MINISTRY OF EDUCATION, YOUTH AND SPORTS

# SELF-EVALUATION REPORT FOR EVALUATION OF RESEARCH ORGANIZATIONS IN THE SEGMENT OF HIGHER EDUCATION INSTITUTIONS IN YEAR 2025

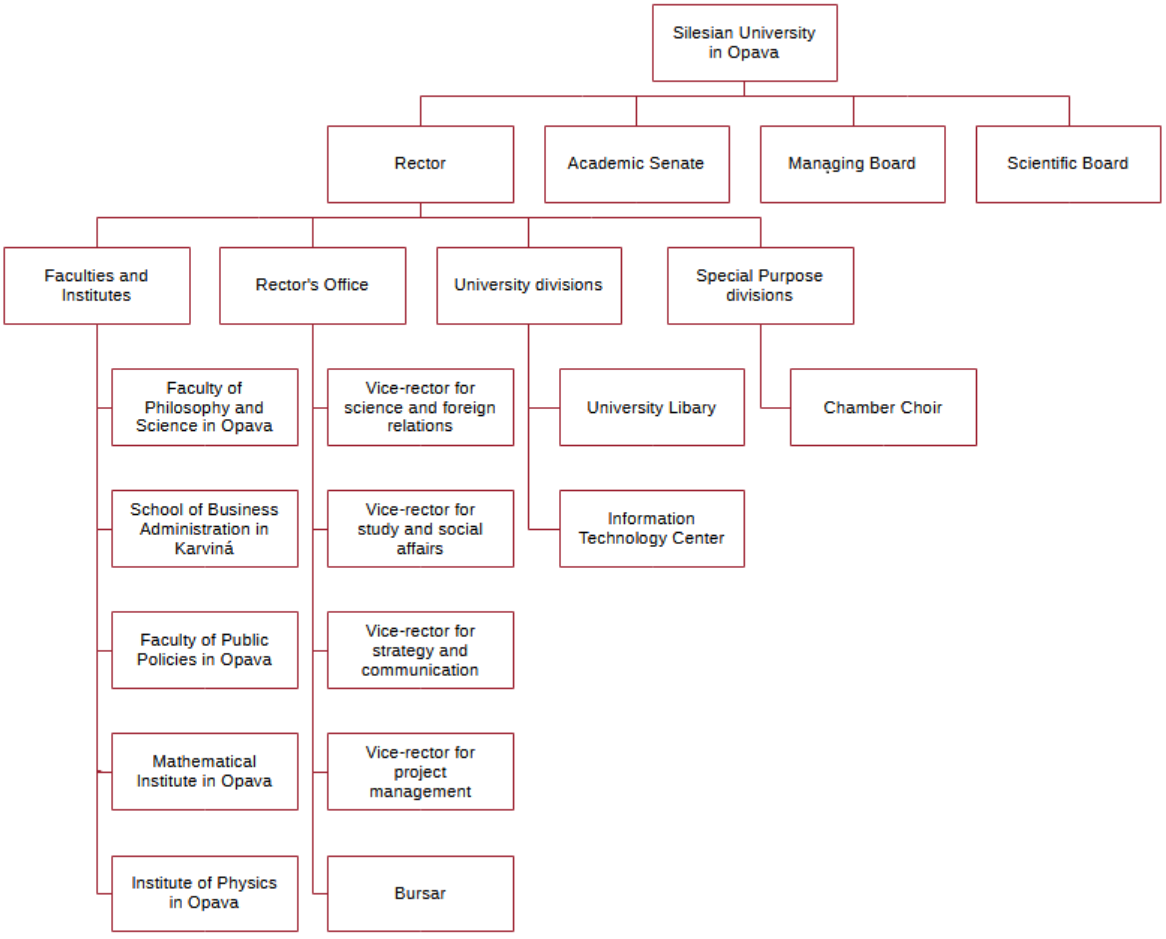
**HIGHER EDUCATION INSTITUTION NAME:** Silesian University in Opava

**COMPANY REGISTRATION NUMBER (CRN):** 47813059

## THE LIST OF EVALUATION UNITS IN MODULE 3:

Faculty of Philosophy and Science (FPS)
School of Business Administration (SBA)
Faculty of Public Policies (FPP)
Mathematical Institute (MI)
Institute of Physics (IP)

## ORGANIZATIONAL STRUCTURE OF THE HIGHER EDUCATION INSTITUTION




**HIGHER EDUCATION INSTITUTION WEBSITE (HTML LINK):** www.slu.cz

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Signature (Rector), stamp

**Introductory information about the evaluated higher education institution**

The HEI briefly introduces itself. The organizational chart, the position of the HEI within the research, development and innovation system and the system of HEIs in the Czech Republic may be commented on, the mission and vision, the size of the HEI, the number and focus of the units evaluated will be briefly presented.

*Maximum 500 words.*

**Description:**

Among the 26 public HEIs in Czechia, Silesian University in Opava (SU) is one of the smallest, and is the only one not located in a capital of one of the 14 regions into which the country is divided.

SU is a modern and open scientific research institution that is highly competitive not only within Central Europe but also on a global scale in selected fields. Its scientific, research, development, and innovation efforts focus on both basic and applied research. A significant aspect of SU's creative activity also includes artistic activities, with its art-focused institutes ranking among the most prominent in both the Czechia and Central Europe.

In the period 2020-2024, SU consisted of 3 faculties and 2 independent institutes of Higher Education:

- Faculty of Philosophy and Science (FPS);
- School of Business Administration (SBA);
- Faculty of Public Policies (FPP),
- Mathematical Institute (MI);
- Institute of Physics (IP).

All these constituents were carrying out R&D&I activities in their respective areas of specialization.

SU's mission in R&D&I is to develop high quality scientific, research, development and innovation activities in selected science, social, economic and pedagogical fields, at national and transnational level, including care for the development of the necessary human resources and links with educational activities, development of cooperation with domestic and foreign universities, research institutions and application sector bodies, and promotion of R&D&I results towards the general public.

SU's vision in R&D&I is to achieve a level comparable to that of leading universities in the Czech Republic and in the EU and to contribute to the successful development of the region, support and develop research and art centres that achieve internationally recognised results and to prepare the next generation of researchers and experts.

| SWOT ANALYSIS | |
|---|---|
| **Strenghts**<br>• existence of high - quality research centers and institutes on all SU faculties;<br>• good and continually improving relationships between academic staff and the representatives of public and business sectors;<br>• scientific collaborations with numerous universities and research institutions abroad;<br>• existence of motivation systems supporting publication and research activities of academic staff;<br>• stable research infrastructure;<br>• participation in international networks in selected science areas;<br>• participation in large international projects (ESA);<br>• friendly and flexible environment of a small-size university;<br>• strong regional anchoring. | **Weaknesses**<br>• continuously lower success rates in public grant competitions;<br>• low public awareness of the research and educational activities of SU;<br>• insufficient international R&D&I collaboration in a number of areas;<br>• absence of strategy for collaboration with the applied sector;<br>• relatively low number of academic staff in the 40 – 50 years age cohort;<br>• low share of experienced foreign researchers<br>• unbalanced scientific performance, in terms of level of quality as well as level of internationalization, of the research areas cultivated at the university. |
| **Opportunities**<br>• attracting more international PhD students and young researchers;<br>• readiness of domestic as well as foreign subjects to collaborate with SU on R&D&I projects;<br>• SU's position as the only public higher educational institution in the historic region of Czech Silesia;<br>• development of infrastructure through large and strategic projects;<br>• revising SU's strategy to align with emerging trends, global shifts, and challenges by adopting effective and innovative approaches to enhance research visibility and engagement. | **Threats**<br>• increasingly strong national and international competition in public grant competitions and limited financial resources;<br>• „brain drain" of young researchers from universities into better financed sectors;<br>• competition from other HEIs in Czechia;<br>• location of SU in a region of low attractivity for students and researchers living outside of the Moravian-Silesian District or even from abroad;<br>• instability of the Czech system for evaluation of R&D&I;<br>• generally low interest of applicants in Ph.D. study. |

# SELF-EVALUATION REPORT FOR MODULE 3

## THE NAME OF THE UNIT BEING EVALUATED: Fakulty of Philosophy and Science

## FORD: 6 - Humanities and the arts

### SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

**3.1 Introductory information about the unit under evaluation**

The evaluated unit will describe its mission and vision and provide a general self-reflection of the societal contribution of R&D&I, along with its long-term goals in the fields it develops. The distribution of research activities by type of research will also be commented on.[1] The evaluated unit will describe its organisational structure and size (staffing, number of students, number of study programmes implemented, etc.) based on the data provided in annex tables 3.1.1 to 3.1.6.

*Maximum 1000 words.*

This is a non-rated indicator that serves as an introduction to the evaluated unit, providing context for data in indicators 3.2-3.7.

**Self-assessment:**

The Faculty of Philosophy and Science (FPS) in Opava is a very diverse unit. One of the visions of the faculty is to use this diversity to its advantage, moving from heterogeneity to interdisciplinarity. This means to develop and integrate educational and scientific research activities in the humanities, arts and social fields in close symbiosis and mutual respect, with the aim of forming a modern and interdisciplinary structured faculty ready to fulfil the mission of a regional educational institution with significant supra-regional, national and international roles.
In selected creative and research areas, the faculty, with the support of grants from external providers and institutional funds, carried out basic and applied research, the results of which contributed to the development of scientific knowledge and society at the regional, national and supranational levels. In the field of exact sciences, it achieved internationally recognised results. The fields of social sciences, humanities, computer science and arts proved their competitiveness and established themselves with their results, especially in Central Europe, with logical disciplinary overlaps of wider significance.

The faculty played a significant role in the application and popularization of creative and research activities and in fulfilling other relevant roles. Being involved in these activities, it prepared pre- and post-gradually educated youth for the exercise of profession in scientific and specialized institutions of national importance; in the implementation of research, it cooperated with the public and business sphere on topical issues and innovations. It focused particularly on creative and research activities contributing to the development of the region of its competence, the Moravian-Silesian

[1] Basic, applied, contract, artistic research (see Definition of Terms in Methodology HEI2025+).

Region, classified as a structurally disadvantaged region, or to the development of territorially adjacent regions of the Czech Republic and border areas. It helped to stabilize public and non-public structures, professionally relevant workforce, co-created modern awareness as a unifying and self-reflective element of society.

In 2020, the faculty underwent a number of organisational changes, which were reflected in the structure of academic departments and educational and creative results. The original Physical Institute, which was part of the faculty until 2019, was transformed into the Institute of Physics in Opava, which was established by the Rector of the Silesian University in Opava on 1st January 2020 as an independent part of the university. At the same time, two physics research centres were also relocated. A consequence of this change was the creation of the Centre of Interdisciplinary Studies within our faculty to provide study for students in physics disciplines and programmes. Other changes included that the name of the original Centre for Multimedia Production was changed to the Centre for Media Communication. Also, the development of artistic activities with a focus on new media was confirmed within the organisation of the faculty by the establishment of a new academic department, the Institute of Movie, Television and Broadcast Creation, which was created by transforming part of the Institute of Czech Language and Library Science.
In 2023, the Faculty of Arts and Science in Opava transformed in terms of the structure of academic departments and the areas of education implemented. After half a decade, it left the sphere of economics and tourism, which brought with it the closure of the Institute of Spa, Gastronomy and Tourism and the departure of most of the academic staff of that field. Only some segments of cultural tourism and the history of catering were retained in the framework of interdisciplinary research and professional study programmes in the field of historical sciences. At the end of the period under review, the faculty consisted of 6 institutes and 3 research centres, falling into three areas of education. The area of Historical Sciences: the Department of Archaeology, the Department of Historical Sciences and the research centres Research Centre for the Cultural History of Silesia and Central Europe (1000-1800) and Research Centre for Contemporary History, Historical Memory and Cultural History (1800-2000); the area of Computer Science: Institute of Computer Science and the Research Institute IT4Innovation; the field of Philology: the Institute of Czech Language and Library Science, the Institute of Foreign Languages; the field of Art: the Institute of Creative Photography, the Institute of Movie, Television and Broadcast Creation and partly also the Institute of Czech Language and Library Science.
At the beginning of the period under review, the faculty offered 13 Bachelor's and 10 Master's degree programmes, 1 of which was also in English. At the end of the period under review, the faculty expanded its offer of study programmes to 21 Bachelor's and 9 Master's degree programmes (1 also in English) and in addition to that offered 17 professionally oriented study programmes, 14 of which are offered at Bachelor's and 3 at Master's level. The faculty also implemented doctoral studies in 5 doctoral degree programmes (in the fields of History, Archaeology, Informatics, Philology, Arts). In the period under review, between 1335 (year 2021) and 1495 (year 2023) students studied in the individual degree programmes, of which foreign students accounted for about 11.8% on average.

In the future the faculty wants to fully focus on its stabilization and further development as an interdisciplinary part of the University with an emphasis on humanities, arts and informatics education, both academic and professional. The emphasis will continue to be on creative activity and on the interdependence of humanities and arts education, science and research with media and information as well as informatics area, respectively, fully in line with Strategic Plan 2021+ [1].
Across the disciplinary spectrum of the faculty, academic education has been and will continue to be implemented and developed in close relationship with scientific, research and other creative

activities, with an emphasis on teamwork and student involvement; the coexistence of artistic creative activity and teaching with an orientation both towards traditional directions and new media is actively promoted and their role in society and public space is emphasised. In cooperation with practice, professional education is also promoted in a targeted way, responding to the challenges and opportunities of a changing social environment.

Table 3.1.1 - Staffing per FTE[2]

| Academic/ Professional position | Total / Of which women | | | | | |
|---|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 | Total |
| Professor | 5,12/0,2 | 4,7/0,2 | 4,95/0,15 | 7,73/0,6 | 6,02/0,3 | 11 |
| Associate Professor | 17,15/3,53 | 14,71/3,54 | 14,19/1,73 | 20,2/4,2 | 14,28/3,4 | 21 |
| Assistant Professor | 40,30/17,31 | 38,51/17,67 | 40,52/18,73 | 42,29/20,23 | 36,78/19,82 | 56 |
| Assistant | 15/5,08 | 12,6/5,51 | 13,39/6,23 | 26,5/11,94 | 32,56/14,06 | 31 |
| R&D Personnel[3] | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0 |
| Researchers in other categories[4] | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0 |
| Technical and economic staff[5] | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0 |
| Scientific, research and development staff involved in teaching activities | 32,72/10,29 | 14,6/4,88 | 13,2/3,77 | 10,08/0 | 15,76/4,98 | 61 |
| Early career researchers[6] | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0 |
| Total[7] | 110,29/36,41 | 85,19/31,8 | 86,25/30,61 | 106,8/36,97 | 105,4/42,56 | 180 |

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D personnel, researchers in other categories and technical and economic staff are mutually exclusive, i.e. one staff member is reported under one category only. Scientific, research and development staff involved in teaching activities, as well as early career researchers are reported collectively for all the above-mentioned categories.

### 3.1.2 Age structure of R&D&I personnel of the evaluated unit and their structure by job title and gender in the year 2019 (numbers of physical employees and personnel)[8]

[2] The average number of hours worked is calculated as the ratio of the total number of hours actually worked during the reference period, from 1 January to 31 December, by all staff (including agreement on work activity, excluding agreement on work performance) to the total annual working time pool per full-time employee. The full- time status of the worker in the evaluated unit is always reported. If an employee holds more than one type of full-time job within the evaluated unit, the total sum of the two shall be reported.

[3] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).

[4] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).

[5] Who participates in the management and support of R&D&I in the institution.

[6] See Definition of Terms in Methodology HEI2025+.

[7] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I personnel, researchers in other categories and technical and economic staff.

[8] The total number of employees/workers as of 31st December of the calendar year in question is to be entered, irrespective of the level of time worked, but only in an employment relationship (including agreement on work activity, excluding

| Academic/ professional position | Under 29 years | | 30-39 years old | | 40-49 years old | | 50-59 years old | | 60-69 years old | | 70 years and older | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women |
| Professor | 0 | 0 | 0 | 0 | **1** | 0 | **2** | **1** | **2** | 0 | **7** | 0 |
| Associate Professor | 0 | 0 | 0 | 0 | **9** | **2** | **4** | 0 | **13** | **3** | **2** | **1** |
| Assistant Professor | **1** | 0 | **15** | **5** | **30** | **12** | **13** | **5** | **4** | **3** | **1** | 0 |
| Assistant | **2** | **2** | **6** | **2** | **13** | **6** | **7** | **3** | **5** | **1** | 0 | 0 |
| R&D Personnel[9] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Researchers in other categories[10] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Technical and economic staff[11] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Scientific, research and development staff involved in teaching activities | **3** | **2** | **21** | **7** | **53** | **20** | **26** | **9** | **24** | **7** | **10** | **1** |
| Early career researcher[12] | 0 | 0 | **3** | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total[13] | **3** | **2** | **21** | **7** | **53** | **20** | **26** | **9** | **24** | **7** | **10** | **1** |

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D Personnel, Researchers in other categories and Technical and economic staff are mutually exclusive, i.e. one staff member is reported in only one category. The categories of scientific, research and development staff involved in teaching activities and early career researchers are reported collectively for all the above-mentioned categories.

### 3.1.3 Age structure of R&D&I personnel of the evaluated unit and their structure by job title and gender in the year 2023 (numbers of physical employees and personnel)[14]

| Academic/ professional position | Under 29 years | | 30-39 years old | | 40-49 years old | | 50-59 years old | | 60-69 years old | | 70 years and older | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women |
| Professor | 0 | 0 | 0 | 0 | **1** | 0 | **2** | 0 | **5** | **1** | **2** | 0 |
| Associate Professor | 0 | 0 | 0 | 0 | **6** | **3** | **2** | 0 | **7** | **1** | **3** | 0 |
| Assistant Professor | 0 | 0 | **12** | **6** | **18** | **8** | **13** | **7** | **5** | **4** | 0 | 0 |
| Assistant | **2** | **1** | **6** | **5** | **7** | **3** | **10** | **3** | **5** | **1** | 0 | 0 |

agreement on work performance). Other types of contractual relationships under the Civil Code that involve purchase of services are not included.

[9] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).

[10] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).

[11] Who participates in the management and support of R&D&I in the institution.

[12] See Definition of Terms in Methodology HEI2025+.

[13] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I Personnel, Researchers in other categories and technical and economic staff.

[14] The total number of employees/workers as at 31.12. of the calendar year in question is to be entered, irrespective of the level of time worked, but only in an employment relationship (including agreement on work activity, excluding agreement on work performance). Other types of contractual relationships under the Civil Code that involve purchase of services are not included.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R&D Personnel[15] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Researchers in other categories[16] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Technical and economic staff[17] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Scientific, research and development staff involved in teaching activities | **2** | **1** | **18** | **11** | **32** | **14** | **27** | **10** | **22** | **7** | **5** | 0 |
| Early career researcher[18] | 0 | 0 | 0 | 0 | **3** | **2** | **1** | 0 | 0 | 0 | 0 | 0 |
| Total[19] | **2** | **1** | **18** | **11** | **32** | **14** | **27** | **10** | **22** | **7** | **5** | **0** |

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D personnel, researchers in other categories and technical and economic staff are mutually exclusive, i.e. one staff member is reported under one category only. Scientific, research and development staff involved in teaching activities, as well as early career researchers are reported collectively for all the above-mentioned categories.

Table 3.1.4 – Students

| Type of study | 2019 | | 2020 | | 2021 | | 2022 | | 2023 | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women |
| Undergraduate | 947 | 565 | 1070 | 610 | 1045 | 604 | 1079 | 622 | 1249 | 748 | 3594 | 2094 |
| Master's[20] | 341 | 216 | 279 | 169 | 223 | 139 | 203 | 115 | 202 | 106 | 680 | 419 |
| Doctoral | 89 | 25 | 81 | 24 | 67 | 17 | 57 | 15 | 44 | 14 | 118 | 37 |
| Lifelong Learning Courses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1377 | 806 | 1430 | 803 | 1335 | 760 | 1339 | 752 | 1495 | 868 | 4392 | 2550 |

Table 3.1.5 - Study programmes in Czech/English

| Type of study programme | Total[21] / Of which professional study programmes | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2019 | | 2020 | | 2021 | | 2022 | | 2023 | | Total | |
| Undergraduate | 13/0 | 0 | 23/0 | 10/0 | 19/0 | 11/0 | 20/0 | 13/0 | 21/0 | 14/0 | 34/0 | 14/0 |
| Master's | 10/1 | 0 | 13/1 | 3/0 | 10/1 | 3/0 | 9/1 | 3/0 | 9/1 | 3/0 | 19/0 | 3/0 |
| Doctoral | 5/2 | 0 | 1/0 | 0 | 1/0 | 0 | 1/0 | 0 | 1/0 | 0 | 6/2 | 0/0 |

[15] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).
[16] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).
[17] Who participates in the management and support of R&D&I in the institution.
[18] See Definition of Terms in Methodology HEI2025+.
[19] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I personnel, researchers in other categories and technical and economic staff.
[20] All master's degree students are listed, regardless of the length of their programme of study.
[21] The total number of study programmes for which admissions have been announced in a given academic year.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lifelong Learning courses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 28/3 | 0 | 37/1 | 13/0 | 30/1 | 14/0 | 30/1 | 16/0 | 31/1 | 17/0 | 62/2 | 17/0 |

Note: For each SP type, enter the number of SPs in Czech language in the first cell and insert the number of SPs in English language after the slash in the same cell (e.g. 15/3), enter the number of professional SPs in Czech language in the second cell and insert the number of professional SPs in English language after the slash. Follow a similar procedure in the last column of the table (Total).

### 3.1.6 – R&D&I capacities

| R&D&I field | FORD | FORD share [%] | Predominant type of research | Total share of industry group [%] |
|---|---|---|---|---|
| 1. Natural Sciences | 1.1 Mathematics | | Zvolte položku. | 12 |
| | 1.2 Computer and information sciences | 9 | Balanced basic and applied research | |
| | 1.3 Physical sciences | 3 | Basic Research | |
| | 1.4 Chemical sciences | | Zvolte položku. | |
| | 1.5 Earth and related environmental sciences | | Zvolte položku. | |
| | 1.6 Biological sciences | | Zvolte položku. | |
| | 1.7 Other natural sciences | | Zvolte položku. | |
| 2. Engineering and Technology | 2.1 Civil engineering | | Zvolte položku. | |
| | 2.2 Electrical engineering, Electronic engineering, Information engineering | | Zvolte položku. | |
| | 2.3 Mechanical engineering | | Zvolte položku. | |
| | 2.4 Chemical engineering | | Zvolte položku. | |
| | 2.5 Materials engineering | | Zvolte položku. | |
| | 2.6 Medical engineering | | Zvolte položku. | |
| | 2.7 Environmental engineering | | Zvolte položku. | |
| | 2.8 Environmental biotechnology | | Zvolte položku. | |
| | 2.9 Industrial biotechnology | | Zvolte položku. | |
| | 2.10 Nanotechnology | | Zvolte položku. | |
| | 2.11 Other engineering and technologies | | Zvolte položku. | |
| 3. Medical and Health Sciences | 3.1 Basic medicine | | Zvolte položku. | |
| | 3.2 Clinical medicine | | Zvolte položku. | |
| | 3.3 Health sciences | | Zvolte položku. | |
| 4. Agricultural and veterinary sciences | 4.1 Agriculture, Forestry, and Fisheries | | Zvolte položku. | |
| | 4.2 Animal and Dairy science | | Zvolte položku. | |
| | 4.3 Veterinary science | | Zvolte položku. | |
| | 4.4 Other agricultural sciences | | Zvolte položku. | |
| 5. Social Sciences | 5.1 Psychology and cognitive sciences | | Zvolte položku. | 9 |
| | 5.2 Economics and Business | 9 | Applied Research | |
| | 5.3 Education | | Zvolte položku. | |
| | 5.4 Sociology | | Zvolte položku. | |

| | | | | |
|---|---|---|---|---|
| | 5.5 Law | | Zvolte položku. | |
| | 5.6 Political science | | Zvolte položku. | |
| | 5.7 Social and economic geography | | Zvolte položku. | |
| | 5.8 Media and communications | | Zvolte položku. | |
| | 5.9 Other social sciences | | Zvolte položku. | |
| 6. Humanities and the Arts | 6.1 History and Archaeology | 19 | Balanced basic and applied research | 79 |
| | 6.2 Languages and Literature | 40 | Applied Research | |
| | 6.3 Philosophy, Ethics and Religion | | Zvolte položku. | |
| | 6.4 Arts (arts, history of arts, performing arts, music) | 20 | Applied Research | |
| | 6.5 Other Humanities and the Arts | | Zvolte položku. | |
| | Total | 100 % | - | 100 % |

## RECOGNITION BY THE RESEARCH COMMUNITY

### 3.2 Recognition by the research community

The evaluated unit will briefly comment on its position in the research community. It shall consider individual and other prestigious R&D&I awards, participation of its academic staff in the editorial boards of international scientific journals, elected membership in professional societies, major invited lectures given by the evaluated unit's academic staff abroad or by foreign scientists and other relevant guests at the evaluated unit. Additionally, it will address the involvement of staff in the evaluation of national or European project/programme calls over the period of 2019–2023 based on the data provided in annex tables 3.2.1 to 3.2.5 (max. 10 most relevant items). If necessary, the evaluated unit shall list any additional services to the scientific community that it considers relevant.

*Maximum 1000 words.*

**Self-assessment:**

The results of scientific and creative activities receive wide recognition on a global scale in all areas of education. Academic staff are invited lecturers at international scientific conferences and at domestic and foreign universities, e.g. in the USA, Chile, India, Hungary, Slovakia, Germany, Spain, Romania, Poland, etc. The evaluated unit also invites eminent personalities in the field to give lectures and to establish scientific research relations. Guests during the period under review included researchers from Ireland, India, Germany, Spain, Portugal, Poland, Italy, Norway, Slovakia, etc.

The staff of the evaluated institutes are mostly long-term members of scientific and disciplinary societies (*Polsko-Czeskie Towarzystwo Naukowe*- Polish-Czech Scientific Society, *Sieć Muzeów Domowych* - Network of Home Museums), steering, organizing and program committees of international conferences and workshops (e.g. *Workshop on Natural Computing*, international conference CMC 2022, II. *Kongres Czechoznawstwa Polskiego i Polonoznawstwa Czeskiego* 2021-2023, SILSE, INFORUM (Albertina Icome Prague), *Média a dějiny* - Media and History, *Montessori ve školce, ve škole a v programu pro dospívající* - Montessori in Kindergarten, School and Adolescent Program), as well as reviewers of papers in professional journals (e.g. *ProInflow*, *Studia Germanistica*), members of editorial boards (e.g. *Astropis, Scientific American, Ostrava Journal of English Philology*, *Iudaica Russica*, *Wydział Humanistyczny Uniwersytetu Śląskiego* - Faculty of Humanities of the University of Silesia, *Acta historica*, *Soudobé dějiny - Contemporary History*, *Marginalia Historica*, *Acta Musei Nationalis Pragae*, *Fotograf - Photographer, Scientific World Journal, Qualitative and Quantitative Methods in Libraries e-journal* ad. ), assessors of doctoral and habilitation dissertations, members of doctoral boards at other universities, members of important national and international professional societies (*International Centre for Silesian Studies*; *Polish-Czech Scientific Society*; *Czech Society for Cybernetics and Informatics*; *International Membrane Computing Society*; *European Society for the History of Photography in Vienna*; *International Association of Photographic Curators Oracle*; *Photographic Academy in London*; *C.Z.A.S.E. (The Czech Association for the Study of English*), etc. They serve as members of the Scientific Body of Evaluators: *The Research, Development and Innovation Council at the Office of the Government of the Czech Republic* (prof. PhDr. Jiří Knapík, Ph.D.), member of *The Art Commission of the Ministry of Culture for the Field of Professional Visual Arts* (doc. Mgr. Tomáš Pospěch, Ph.D.).

The staff are active evaluators of research projects of the GAČR - Czech Science Foundation (doc. Mgr. Martin Pelc, Ph.D., prof. PhDr. Zdeněk Jirásek, CSc., doc. PhDr. Miroslav Zelinský, CSc.), NAKI projects (prof. PhDr. Irena Korbelářová, Dr., PhDr. Dalibor Prix, CSc., prof. MgA. Marek Jícha), EEA Norway projects in the area of support for the revitalization of movable and immovable cultural heritage (PhDr. Petr Vojtal), TAČR - Technology Agency of Czech Republic projects (Mgr. Bc. Miloš Zapletal, Ph.D., doc. PhDr. Miroslav Zelinský, CSc.), NERD - Research for Doctoral Degree Students

(prof. PhDr. Jiří Knapík, Ph.D.), evaluators for the Slovak Academy of Sciences (doc. Ing. Petr Sosík, Dr.), etc.

Recognition by the scientific community in the Czech Republic and abroad took the form of awards, both for scientific research and artistic creative activities of academic staff and students, of which only a fraction is listed in Table 3.2.1. These include awards for best publications, project awards, and awards for both research and other creative activities.

Table 3.2.1 - Prestigious R&D&I awards granted during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Name of the award | Awarding institution |
|---|---|---|
| doc. Mgr. Martin Pelc, Ph.D. | *Sport as Spectacle: Birth of Sports Spectatorship and Fan-culture in Czech society (till 1945)* project award. | Chairman of the Czech Science Foundation (GAČR) |
| Mgr. Martin Petrásek | Special Prize of the Jury of the International Festival of Popular Science Films Academia Film Olomouc for the documentary *Perk's Telescope*. | Academia Film Olomouc |
| doc. Mgr. Tomáš Pospěch, Ph.D. | 1st prize in The Most Beautiful Czech Books of the Year Award 2022 in the category Scientific Literature: *Consolation by Living: the life of a private collector behind the Iron Curtain.* | Ministry of Culture of the Czech Republic |
| doc. PhDr. Libor Martinek, Ph.D. | Bronze medal "Zasłużony Kulturze Gloria Artis" for promotion of Polish culture abroad. | Ministerstwo Kultury i Dziedzictwa Narodowego |
| doc. PhDr. Libor Martinek, Ph.D. | Prize for the best publication in the second Polish-wide competition for a diploma and scientific thesis on the works of M. K. Sarbiewski*: Libor Martinek et al., České a polské literární baroko - Czeski i polski barok literacki, Opava 2021.* | Academia Europaea Sarbieviana |
| MgA. Roman Vondrouš | 1st prize in the Czech Press Photo 2020 competition with the image *Disinfection*. | Czech Photo Centre |
| MgA. Roman Vondrouš | 1st prize in the Czech Press Photo 2022 competition with the image *Appointment of the Prime Minister*. | Czech Photo Centre |
| MgA. Roman Vondrouš | 1st prize in the Czech Press Photo 2023 competition with the image *Riots at the Court*. | Czech Photo Centre |
| doc. Mgr. Tomáš Pospěch, Ph.D. | 1st place: Association of Professional Photographers Award - *Photographic Publication of the Year 2020* | Association of Professional Photographers of the Czech Republic |

| | | |
|---|---|---|
| prof. PhDr. Irena Korbelářová, Dr. | *Bene Merito* - Honorary Medal for merit in strengthening Poland's position in the international sphere, 2019 | Minister for Foreign Affairs of the Republic of Poland |

Note: Provide up to 10 examples.

Table 3.2.2 Participation of academic staff of the evaluated unit in editorial boards of international scientific journals during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Name of scientific journal, ISSN |
|---|---|
| Ing. Milena Botlíková, Ph.D. | Malaysia, Accounting and Financial Review, ISSN 2636-915X |
| doc. MgA. Pavel Mára | European Journal of Media, Art and Photography, ISSN 1339-4940, ISSN (online) 2989-3224 |
| prof. PhDr. Irena Korbelářová, Dr. | Slezský sborník / Acta Silesiaca, ISSN 0037-6833. |
| prof. PhDr. Jiří Knapík, Ph.D. | Marginalia Historica, ISSN: 1804-5367 |
| doc. Mgr. Martin Pelc, Ph.D. | Sląski Kwartalnik Historyczny Sobótka. ISSN 0037-7511 |
| doc. Mgr. Martin Pelc, Ph.D. | Acta historica Universitatis Silesianae Opaviensis, ISSN: 1803-411X |
| doc. Mgr. Tomáš Pospěch, Ph.D. | Fotograf, ISSN: 1213-9602 a 1802-2413 |
| doc. Mgr. Tomáš Pospěch, Ph.D. | Sešit pro umění, teorii a příbuzné zóny, ISSN: 1802-8918 |
| doc. PhDr. Michaela Weiss, Ph.D. | Iudaica Russica, Wydział Humanistyczny Uniwersytetu Śląskiego, ISSN 2657-8352 |
| doc. PhDr. Michaela Weiss, Ph.D. | Ostrava Journal of English Philology, ISSN: 1803-8174 |

Note: Please provide up to 10 examples of academic staff participation in editorial boards of international scientific journals (e.g. editor, editorial board member, etc.).

Table 3.2.3 The most important invited lectures delivered by the academic staff of the evaluated unit at foreign institutions during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Invited lecture title | Name of host institution, or name of conference or event | Year |
|---|---|---|---|
| Dr. Jorge Iván Ovalle Araya, Ph.D. | Gravitational Decoupling: black holes and other applications. | Department of Mathematics, Universidad de Antofagasta, Chile | 2019 |
| Mgr. Debora Lančová, Ph.D. | Puffy accretion disks: sub-Eddington, optically thick, and stable. | BHI Colloquium, Harvard University, Cambridge, MA USA | 2019 |
| doc. RNDr. Lucie Ciencialová, Ph.D. | Connecting the P Colonies. | International Conference on Membrane Computing (ICMC 2020), Ulanbatar, Mongolia | 2020 |
| doc. Ing. Petr Sosík, Dr. | Simulations of bacteria with morphogenetic systems. ICMC 2021 | International Conference on Membrane Computing. Chengdu, China and Debrecen, Hungary | 2021 |
| MgA. Mgr. Jana Orlová, Ph.D. | Performance: Theory and Practice. | University of Minnesota, Department of Art | 2022 |
| doc. PhDr. Eva Klímová, Ph.D. | Il verbo italiano e il verbo inglese sulle scale semantiche. | Università degli Studi, Roma 3, | 2022 |
| Doc. PhDr. Gabriela Rykalová, | Sprachliche Innovation und Sprachwandel am | 10. Internationale | 2022 |

| | | | |
|---|---|---|---|
| Ph.D. | Beispiel ausgewählter Adjektive. | Germanistische Werkstatt „Zukunftspotenzial der Germanistik: Themen, Trends, Tendenzen ". Opole. | |
| Mgr. Anna Novotná, Ph.D. | Opportunities and Challenges of LIS. | Campus of Open Learning, University of Delhi. | 2023 |
| Mgr. Hana Komárková, Ph.D. | The oath as a source for observing changes within urban society from the late Middle Ages to the end of the Early Modern Period. | Historical and Anthropological Seminar of the Ukrainian Catholic University in Lviv (online) | 2023 |
| doc. PhDr. Vratislav Janák, CSc. | Litomyšl – Nedošín 11: nejstarší neolitický rondel v Čechách? | ArcheologicAL Institute SAV Nitra | 2023 |

Note: Provide up to 10 examples.

Table 3.2.4 - The most important lectures by foreign scientists and other guests relevant to R&D&I at the evaluated unit during the evaluation period

| Name, surname and title(s) of the lecturer | Lecturer's employer at the time of the lecture | Invited lecture title | Year |
|---|---|---|---|
| Prof. Dr. Danila Zuljan Kumar | Slovenian Academy of Sciences and Arts, Fran Ramovš Institute of the Slovenian Language, Slovenia | The Function of Contemporary Culture and Art in Revitalizing the Endangered Language and Reawakening of the Dyin Culture and Identity | 2019 |
| Prof.ssa Ilde Consales | Università Roma Tre, Italy | L'invasione degli anglicismi nell'italiano di oggi. | 2021 |
| George Stone | Sutledge Placement Consultants, Great Britain, | Welsh hospitality industry | 2021 |
| Prof. Dr. György VASZIL | University of Debrecen, Hungary | Reversiblity of reaction systems | 2022 |
| Jacob Wilkins | Oxford University, Great Britain | Optimization, STFC-TCPG | 2022 |
| Prof. José, M. Sempere Luna, PDI | Polytechnical University in Valencia, Spain | Modeling pandemics by membrane computing | 2022 |
| Prof. Dr. Dr. h. c. mult. Norbert Richard Wolf | Julius-Maximilians-Universität Würzburg, Garmany | Zwei Geschlechter, drei Genera und die Genders. | 2023 |
| Jane Ekstam, Ph.D. | Østfold University College, Norway | Storytelling in the anthropocene. Imagination, fact and magical realism. | 2023 |
| Dr. h. c. Prof. PhDr. Václav Furmánek, DrSc. | Archeologický ústav SAV, Nitra, Slovakia | Popolnicové polia v Karpatskej kotline | 2023 |
| prof. UZ, dr. hab. Radosław Domke | Uniwersytet Zielonogórski, Zielona Góra, Poland | A Historical Analysis of Poland in the 20th and 21st Centuries. | 2023 |

Note: Provide up to 10 examples.

Table 3.2.5 - Involvement in the evaluation of national/European research project/programme calls relevant to the R&D&I area at the unit during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Name of the research project/programme call | Name of the contracting authority/guarantor of the project/programme call | Year |
|---|---|---|---|
| Mgr. Bc. Miloš Zapletal, Ph.D. | TA ČR | Technology Agency of the Czech Republic (TA ČR) | 2020 |
| PhDr. Petr Vojtal | EEA/Norway in the field of support for the Revitalisation of Movable and Immovable Cultural Heritage | Ministry of Culture of the Czech Republic | 2020 |
| doc. Mgr. Martin Pelc, Ph.D. | projects within the evaluation panel P410 GAČR | Czech Science Foundation (GA ČR) | 2021 |
| prof. PhDr. Irena Korbelářová, Dr. | Projects NAKI II | Ministry of Culture of the Czech Republic | 2021 |
| PhDr. Dalibor Prix, CSc. | Projects NAKI II | Ministry of Culture of the Czech Republic | 2021 |
| prof. MgA. Marek Jícha | Projects NAKI II | Ministry of Culture of the Czech Republic | 2021 |
| Mgr. Bc. Miloš Zapletal, Ph.D. | Projects TAČR (AL – Art, architecture, cultural heritage) | Technology Agency of the Czech Republic (TA ČR) | 2022 |
| prof. PhDr. Jiří Knapík, Ph.D. | Project NERD (Research for Doctoral Degree Students) | Academy of Arts, Architecture and Design in Prague | 2022 |
| doc. Ing. Petr Sosík, Dr. | SASPRO | Slovak Science Academy | 2022 |
| doc. PhDr. Miroslav Zelinský, CSc. | Assessment for GAČR, panel 409 Sciences of Art | Czech Science Foundation (GA ČR) | 2023 |

Note: Provide up to 10 examples.

## RESEARCH PROJECTS

### 3.3 Research projects

The evaluated unit shall list at most 10 (considered most significant by the evaluated unit) research projects/activities (regardless of whether they are supported by public funds or based on contract research[22]) that it has implemented or participated in during the period of 2019–2023[23]. This should be done from the full list in annex tables (Table 3.3.1-3.3.2)[24], regarding particularly the results achieved or the application potential of the projects. The unit should also describe how the research projects contributed to the mission and purpose of the evaluated unit. If the evaluated unit has been a participant in listed project, it shall indicate which other entities were involved and describe its contribution to the project. The interdisciplinary aspects of the projects will also be commented on, along with any collaboration with other units of the evaluated HEI.

*Maximum 300 words per project.*

**Self-assessment:**

The faculty has undertaken a number of projects, both basic and applied research. The projects were solved by both domestic and foreign providers. In the first place it is necessary to highlight the successfully solved projects of the Grant Agency of the Czech Republic:

- **Pioneer Organization and Changes in the Socialistic Forms of Children's Socialization in the Czech Lands (1949–1968).** [2]

The project is based on the research of official ideas about the form of the children's socialization in the Czech lands and its real changes depending on the political and social situation in Czechoslovakia. The time frame of 1949-68 reflects the period of existence of the Pioneer Organisation of the Czechoslovak Union of Youth. The project links cultural and social history with political history, history of education and oral history methods. It deals not only with the ideological and institutional aspects of the Pioneer movement, but also with the real experience of its members, thus contributing to a deeper understanding of children's collective identity in socialist Czechoslovakia. The emphasis on the analysis of archival and printed sources, combined with contemporary audiovisual materials and eyewitness testimonies, allows for a comprehensive view of the issues under study. The project thus provides new insights not only for historians, but also for sociologists, anthropologists and education specialists. At the same time, it opens up space for comparative research on children's organizations in other Eastern Bloc countries and their long-term impact on society.

- **Sport as a spectacle: Birth of sports spectatorship and fan-culture in Czech society (till 1945)** [3]

The project belongs to the sub-discipline of sports history, but instead of the event level of history, it focuses on the anthropological dimension of perception. It focuses on the phenomenon of sports spectatorship and fandom in Czech society as an important manifestation of modern mass popular culture. The research focuses not only on the quantitative evaluation of sports attendance, but especially on the changes in the social, gender or age composition of the audience. The

[22] For the definition of contract research for the purposes of evaluation in the HE segments, see Article 2.2.1 of the Community Framework for State Aid for Research, Development and Innovation 2014/C 198/01.
[23] Regardless of whether the projects are completed or still ongoing, provided that at least part of the project was implemented during the evaluation period.
[24] The evaluated unit shall only fill tables that are relevant to it.

manifestations of fan culture are also the subject of research. In addition to the traditional method of historical hermeneutics, iconographic materials analysed by visual studies procedures are intensively used. The main output of the project is the monograph *(Let´s go out to the) Football match! Football spectatorship and fan culture in the Czech lands until 1939*, mapping the birth and transformation of the phenomenon in the most important sports until 1945. The sub-research questions are: the birth of the sports fan; the social transformations of the sports audience and the sectorisation of sports venues; the soundscape of the sports stadium; expressions of loyalty; manifestations of symbolic and physical violence; the material culture of the lived world of sports fans (fanartikel – fan merchandise); the transformations of fans' perceptions of sport; and sports tourism.
The project is distinguished by its interdisciplinary approach, linking the history of sport with anthropology, sociology and visual studies. Traditional historical hermeneutics is complemented by the analysis of iconographic materials, allowing for a more comprehensive understanding of sports spectatorship as a culturally conditioned phenomenon.

This project was also awarded an honorary mention by the President of the Grant Commission of the Czech Republic as one of the best evaluated projects in 2023.

- **Testing strong gravity via black holes** [4]

The development of observations in the gravitational and electromagnetic spectrum is currently focused on testing gravity around black holes. The project has developed a method to describe the spacetime of black holes in any theory of gravity, including those theories that are different from the prevailing Einstein theory. The distinctions between different theories of gravity are most pronounced in the specific conditions of extremely strong gravity around black holes. With this new method, different theories of gravity and their distinctions can be studied, potentially bridging the gap between theory and experiment in an attempt to understand gravity under these specific conditions. The project thus contributes to a full understanding of gravity and its influence on the physical processes leading to the enormous energy ejections from the vicinity of black holes, which may have a major impact in the future for practical applications in energy and other research fields. In particular, the considerable number of high-quality publications related to this project (57 in total) is to be highly appreciated.

The interdisciplinary overlap lies in the interconnection of theoretical physics, astrophysics and mathematics. The development of a new method to describe the space-time of black holes in different theories of gravity allows testing fundamental physical laws under extreme conditions, which is crucial not only for cosmology but also for the development of future technologies exploiting gravitational effects. The inclusion of alternative theories of gravity, such as Einstein-dilaton-Gauss-Bonnet or dynamical Chern-Simons, extends the possibilities of comparison with Einstein's theory and provides new insights into the behaviour of strong gravity. In doing so, the project not only contributes to basic research, but also opens up applications in the fields of gravitational astronomy and theoretical energetics.

- ***Schlaraffia: The Element of Play in Nineteenth-century Culture*** [5]

Schlaraffia referred to a network of associations founded in Prague in 1859 and spread throughout the world among the German bourgeoisie. The Schlaraffie were men's societies of the predominantly German bourgeois elite cultivating a chord of friendship, art and humour while consistently maintaining a peculiar pseudo-knightly ceremony. The original drinker-recessionary

banter gradually gave way to a sophisticated humour based on irony and travesty, aimed at parodying the social order and extolling real or fictional schlarephic values, virtues and heroes. By 1914, over 200 branches had been established in Europe, Asia, Africa, North America and Australia/Oceania, with approximately 100 more in the interwar period. The phenomenon was born out of the spirit of historicism and its forms parodied social order, hierarchies and culture. In contrast to previous productions, the project aimed to examine Shlaraffia interdisciplinarily: 1) in terms of theories and concepts that conceive of the play not as a marginal social form, but as a symbol of the world, in this case the bourgeois world, anchored in the historicism of the second half of the 19th century, or in the sense of the concept of carnevalisation. 2) in terms of literary science, musicology, history and theory of art, to capture the sources and means of humour and thus contribute to the understanding of elite culture in the period, and 3) to describe the principles of the functioning of the Schlaraffia as a male union and pseudo-genealogically structured global social network centred in Prague.
The project combines historical research with literary science, musicology, art theory and sociology. The project thus provides new insights into the mechanisms of social cohesion, identity and cultural self-identification in the German-speaking bourgeoisie.

The involvement of the faculty in applied research projects, especially NAKI II and NAKI III, was also significant:

- ***Culinary Heritage of the Czech Lands: Memory, Presentation and Education*** [6]

In cooperation with the institutions: National Museum of Agriculture, Institute of Hospitality Management in Prague 8, Ltd./University College Prague, Research Institute of Brewing and Malting.

The aim of the project was to document, research, present and educate the values of the historical regional and local culinary heritage of the Czech lands, reflecting the elements of national and cultural identity, which in its natural environment is threatened with extinction due to globalization and cultural transfer induced by modern lifestyles; as well as to create conditions for the identification of traditional regional dishes and drink, their application in contemporary practice and recognition based on regional/national products. Using applied research, a methodology for documenting culinary heritage in the Czech lands and specialist publications were created; a range of educational outputs was prepared to deepen users' knowledge and create a positive relationship to place, region and past: a specialised map presenting selected aspects of the development of catering, beverage culture and gastronomy against the background of the cultural and historical regions, ethnographic areas and administrative units of the Czech Republic; specialised exhibitions with critical catalogues; educational audiovisual outputs; conferences and professional workshops. To ensure the objectives, interdisciplinary documentation of the culinary heritage of historical countries (Bohemia, Moravia, Silesia) and its contemporary presentation through professional and vocational activities was carried out.
The interdisciplinary character lies in the interconnection of cultural history, ethnology, gastronomy, sociology and applied research. The documentation and analysis of regional culinary heritage is based on historical, ethnographic and anthropological methods, which allows a deeper understanding of the development of food habits and their socio-cultural context. The practical dimension of the project is reflected in the use of the results in contemporary gastronomy, regional development and tourism, with economic and cultural impact. The educational aspect is also an important component - exhibitions, professional publications and audiovisual materials contribute to the dissemination of knowledge and the promotion of local identity.

- ***Historical Landscape of the Borderlands between Silesia and Moravia*** [7]

The overall main objective of the project, supported by the Ministry of Culture of the Czech Republic, was the development of specialized maps with scientific content (GIS) and certified methodology based on interdisciplinary research of the historical landscape on the border of Czech Silesia and Northern Moravia, which would significantly contribute to the primary protection of archaeological monuments, i.e. not only in the sense of simply recording them, but: in the sense of their prediction and early identification based on the analysis and determination of their general spatial and environmental characteristics; furthermore, in the sense of categorization and structuring of information on their level of threat; and finally, in the sense of their possible use and evaluation in the future.
In view of the dramatic changes in the landscape caused by construction and industrial activity over the last 150 years, modern conservation cannot rely on the simple recording of individual "point" and "limited area" monuments (see the State Archaeological List). The research is spatially focused on the wider area of the Moravian Gate with the adjacent geomorphological areas.
The project had a strong interdisciplinary character as it links archaeology, geography (GIS), environmental science, historical landscape analysis and conservation. The use of geoinformation technologies (GIS) allows not only the recording but also the prediction and early identification of archaeological sites based on spatial and environmental characteristics. The involvement of environmental analysis is crucial for understanding the relationship between the historic landscape and human activity, especially with regard to changes caused by industrialization and urbanization. Categorising the degree of threat to individual sites then helps modern conservation to respond effectively to risks and design conservation strategies.

- ***Cultural traditions of Czech fishing in the light of its utilization in tourism and landscape architecture***

The project was implemented in cooperation with the Czech University of Life Sciences in Prague, Faculty of Economics and Management (beneficiary-coordinator), University of South Bohemia in České Budějovice, Faculty of Fisheries and Protection of Waters, National Museum of Agriculture in Prague, Institute of Hospitality Management in Prague 8, s.r.o.; Prague University of Economics and Business, Faculty of Business Administration.
The aim of the project was to research the cultural tradition of Czech fish farming in the wider context of history and society. The topic of the project was the analysis of fish farming identity in the context of Czech culture, the search for traditions of fish farming, their use in catering in the past and present, promotion within the products of culinary culture, cultural tourism and tourism.
The project was significantly interdisciplinary in nature. The main areas of basic research were history, sociology, ichthyology, economics, agricultural sciences, with the use of applied research and field investigation in the field of fish farming, gastronomy and culinary culture, cultural heritage.

- ***Endangered Memory of the Moravian and Silesian Sudetenland Landscape*** [8]

The project responds to the current situation of the bark beetle calamity that has hit northern Moravia and Silesia. The main impulse is the findings of colleagues from the National Heritage Institute, supplemented by published aerial photographs (orthophotomaps), which show the enormous scale of the calamitous forestry extraction and its impact on archaeological immovable cultural monuments and areas with archaeological findings registered in the State Archaeological List (SAS) of the Czech Republic.
The aim of the project was multidisciplinary research of monuments in the landscape of the Moravian and Silesian Sudetenland and the development of a conservation procedure for the

protection of monuments threatened by logging forestry activities, which will also be addressed both to the conservation authorities and handed over to the owners and managers of forests or other entities whose activities threaten monuments in the area in question. Another objective was the development of specialized maps with scientific content, which will contain a set of information and data and, last but not least, the presentation of the research results to the professional public through conferences, workshops and professional publications and the education of the general public through a thematic exhibition and follow-up activities.
The project stands out for its interdisciplinary approach, which combines archaeology, geomorphology, environmental sciences and geoinformatics. By combining historical data with current environmental information, threatened sites can be accurately identified and categorised, which is crucial for effective heritage conservation. In addition, the project augments traditional records (SAS) with modern 3D and spatial models that reflect the evolution of settlement and natural conditions in the study area. The collaboration of experts from different disciplines not only enhances the quality of scientific results, but also brings new opportunities for the application of this knowledge in practice.

- ***Castles in the landscape of the Moravian-Silesian borderland – new forms of presentation of unused historical buildings*** [9]

The main aim of the project was to create tools for the protection and adequate use of castle settlements affected by the discontinuity of historical development after 1945. The project aims to develop a concept for the sustainable restoration of the significance of these natural historic centres, which also have the potential to develop the region's tourism and related social, cultural and economic aspects. The examples of three selected castle buildings from the Moravian-Silesian border region were used to create model presentations - exhibitions with a critical catalogue. An interdisciplinary approach was applied in the creation of the exhibitions, using methods of monument research and surveys, as well as modern research, documentation and analytical methods. For each object, the most appropriate presentation methods were chosen, using both proven methods and new approaches (the use of interactivity in various forms). On the basis of these, a heritage procedure was developed for owners and managers of similar objects, which will enable the principles of the presentation itself to be introduced with regard to the heritage values of the object. Another of the main objectives of the project is the creation of two interactive specialised maps with scientific content, one of which documents the castle buildings in the region and the other model passports the cultural and historical values of one of the estates. The results of the research were also disseminated through an audiovisual production with an expert script. Interactive elements and innovative approaches to the presentation of monuments highlight not only the historical value of the buildings but also their potential for sustainable regional development.

- **IT4Innovations excellence in science** [10]

The main objective of the project was to build on the research activities successfully initiated within the OP R&D&I project IT4Innovations Centre of Excellence and to further increase the scientific excellence and international impact of these research activities, especially in the fields of "High Performance Computing" (HPC) and "Cyber-physical systems" (CPS) and related sciences such as computer science, mathematics, biomedicine, engineering, material science or earth sciences. An integral part of this goal was the intensive use of the established supercomputing infrastructure which makes the centre one of the leading European HPC centres and the development of applications for its efficient use. This infrastructure is also recognised as a Large National

Infrastructure of the Czech Republic - IT4Innovations National Supercomputing Centre - on the Czech Republic's Roadmap of Large Infrastructures for Research, Experimental Development and Innovation. IT4I actively follows the latest trends in High Performance Computing (HPC) and advanced computing applications, including the convergence of HPC, artificial intelligence and big data domains. IT4I's research infrastructure has a high potential for sustainability and international competitiveness. IT4I scientists are recipients of a number of major national and especially international scientific awards and prizes for innovative results.
The IT4I XS project is highly interdisciplinary, linking computer science, mathematics, engineering, biomedical, material and earth sciences with key research areas in high-performance computing (HPC) and cyber-physical systems (CPS). With its supercomputing infrastructure and collaboration with national and international institutions, it enables advanced simulations, analysis and modelling in a wide range of scientific and technological disciplines. The interdisciplinary nature of the project is essential for innovation in the applied sphere, both in academic and industrial research, while the direct link to the development of cutting-edge computing technologies ensures the high international impact and sustainability of the centre.

Table 3.3.1 Projects supported by public funds

| In the role of beneficiary | | | | | | |
|---|---|---|---|---|---|---|
| Provider[25] | Project name | Support (in thousands CZK/EUR)[26] | | | | |
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| Czech Science Foundation (GA ČR) | Oscillations and coherent features in accretion disks around compact objects and their observational signatures | 1 098/43 3314 | 0/0 | 0/0 | 0/0 | 0/0 |
| Czech Science Foundation (GA ČR) | Testing strong gravity via black holes | 2 956/116 608 | 0/0 | 0/0 | 0/0 | 0/0 |
| Czech Science Foundation (GA ČR) | Sport as a spectacle: Birth of sports spectatorship and fan-culture in Czech society (till 1945) | 523/20 631 | 501/19 763 | 607/24 000 | 0/0 | 0/0 |
| Czech Science Foundation (GA ČR) | Pioneer Organization and Changes in the Socialistic Forms of Children's Socialization in | 587/23 156 | 681/26 864 | 725/28 600 | 0/0 | 0/0 |

[25] If the provider is from abroad, please indicate the provider's country of origin in brackets. For the determination of the country of origin of the provider, the place of residence of the provider is decisive.
[26] Indicate the total amount expressed in thousands of CZK and the conversion of the total amount into Euro.

| | | | | | | |
|---|---|---|---|---|---|---|
| | the Czech Lands (1949–1968) | | | | | |
| Czech Science Foundation (GA ČR) | Schlaraffia: The Element of Play in Nineteenth-century Culture | 0/0 | 0/0 | 0/0 | 0/0 | 991 |
| Ministry of Culture | Historical Landscape of the borderlands between Silesia and Moravia | 2 015/79 487 | 2 116/83 471 | 1 768/69 744 | 2 036/80 316 | 0/0 |
| Ministry of Culture | Culinary Heritage of the Czech Lands: Memory, Presentation and Education | 1 517/59 842 | 2 012/79 369 | 1 793/70 730 | 1 884/74 320 | 0/0 |
| Ministry of Culture | Endangered Memory of the Moravian and Silesian Sudetenland Landscape | 0/0 | 2 743/108 205 | 2 176/85 838 | 2 607/102 840 | 0/0 |
| Ministry of Education, Youth and Sports | Promotion and Development of International Scientific Cooperation in Relativistic Astrophysics and Preparation of X-ray Space Missions | 2 501/98 659 | 0/0 | 0/0 | 0/0 | 0/0 |
| Ministry of Education, Youth and Sports | Neutron stars and pulsars | 1 100/43 393 | 0/0 | 0/0 | 0/0 | 0/0 |
| Technology Agency of the Czech Republic (TA ČR) | The village is a world. Changes in the social climate in Bruntál 1978-2018 in the context of photographs by Jindřich Štreit | 965/ 38 067 | 958/ 37 791 | 951/ 37 515 | 1 304/ 51 440 | 0/0 |
| Ministry of Education Youth and Sports | Specific research projects (research carried out by students) | 5 504/ 217 120 | 4 593/ 181 183 | 4 570/ 180 276 | 2 022/ 79 763 | 2 119/ 83 590 |
| Ministry of Education Youth and Sports | Research projects carried out by students of doctoral study programmes | 0/0 | 2 548/ 100 513 | 1 198/ 47 258 | 0/0 | 0/0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Total | | **18 766/740 276** | **16 152/633 472** | **13 788/543 905** | **9 853/388 679** | **3 110/122 682** |
| In the role of another participant | | | | | | |
| Provider[27] | Project name | Support (in thousands CZK/EUR) | | | | |
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| Czech Science Foundation (GA ČR) | Sources and Distribution of Selected Pottery Products of the High and Late Middle Ages | 189/7 412 | 0/0 | 0/0 | 0/0 | 0/0 |
| Ministry of Culture | Cultural traditions of Czech fishing in the light of its utilization in tourism and landscape architecture | 289/11 400 | 324/12 781 | 313/12 347 | 0/0 | 0/0 |
| Ministry of Culture | Castles in the landscape of the Moravian-Silesian borderland – new forms of presentation of unused historical buildings | 0/0 | 0/0 | 0/0 | 0/0 | 1 394/54 990 |
| Ministry of Education Youth and Sports | IT4Innovations excellence in science | 1 968/77 633 | 2 175/85 799 | | | |
| Ministry of Education Youth and Sports | Facility for Antiproton and Ion Research - participation of the Czech Republic | 758/29 901 | 0/0 | 0/0 | 0/0 | 0/0 |
| Ministry of Education Youth and Sports | Investigation of baryonic systems at FAIR international research facility | 750/29 586 | 0/0 | 0/0 | 0/0 | 0/0 |
| Total | | **3 954/156 000** | **5 499/216 923** | **313/12 347** | **0/0** | **1 394/54 990** |

[27] Ibid.

Table 3.3.2 - Contract research activities

| Client[28] | Activity name | Revenue (in thousands CZK/EUR) | | | | |
|---|---|---|---|---|---|---|
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| LPP ltd. | An application for joint control of unmanned drone elements | 0/0 | 446/17 600 | 0/0 | 279/11 000 | 1/40 |
| LPP ltd. | Application of the "Autonomous Diagnostic System for Predictive Vehicle Platform Diagnostics" | 0/0 | 0/0 | 0/0 | 0/0 | 3/118 |
| Total | | **0/0** | **446/17 600** | **0/0** | **279/11 000** | **4/158** |

Note: List and describe contract research activities with a revenue in a given calendar year, regardless of the amount of financial revenue.

## 3.4 Research results with existing or prospective impact on society

The evaluated unit shall briefly comment on a maximum of 10 (considered most significant by the evaluated unit) research results already applied or realistically heading towards application during the period of 2019–2023, based on the overview annex table 3.4.1 (it is recommended to indicate results with a link to projects listed in indicator 3.3). The evaluated unit must demonstrate in its description that the research results have led or will soon lead to positive impacts[29], on society (e.g. description of how the results are used by various users, the range of persons/institutions for which the result is relevant, measurable economic impacts, etc.). The evaluated entity shall indicate in its commentary whether the gender dimension is considered in these results and discuss the impacts of the results regarding sustainability.

*Maximum range 300 words/result.*

**Self-assessment:**

**Self-assessment:**

- **Scientific publication *Pioneers, painted children? Pioneer organization ČSM and children's collective (1949–1968)***

The publication completes the project *Pioneer Organization and Changes in the Socialistic Forms of Children's Socialization in the Czech Lands (1949–1968)*. The book was co-authored by historian Martin Franc, who together with Prof. Knapík won the Magnesia Litera Award in the Non-Fiction Literature category in 2012.
The publication makes an important contribution to the history of childhood under socialism and offers a new perspective on the pioneer movement in the context of wider social change. Its conclusions are valuable not only for historians, but also for educators, social workers and institutions concerned with the education of youth. Through a detailed examination of archival sources and visual materials, it allows for a better understanding of the ideological education of children and its influence on the formation of collective identity. The publication can be used in the cultural and educational sector – in museum exhibitions, school courses or public discussions on the history of the 20th century. The gender dimension is reflected through an analysis of the role of boys and girls in the pioneer movement and contemporary ideas about their upbringing. The publication also stimulates critical debate about children's organizations and their long-term influence on education, which is crucial for understanding the past and present.

28 If the client is from abroad, indicate in brackets the country of origin of the client.
29 See Terms definition.

- ***(Scientific publication (Let´s go out to the) Football match! Football Spectatorship and Fan Culture in the Czech Lands prior to 1939***

This scientific publication is the result of the project *Sport as a spectacle: Birth of sports spectatorship and fan-culture in Czech society (till 1945). It* traces the birth of the football fan as a distinctive, often eccentric social type of the Czech every day. The practice of regular attendance at football matches has its roots in the late 19th century. Its mass spread occurred in the interwar period. It was also then that the Czech language was dominated by the new words "fanoušek“ (he-fan) and "fanynka" (she-fan) and a rich journalistic, artistic and intellectual reflection on the phenomenon developed. The historical actors of this book are not only the actual visitors to football grounds and stadiums, but also the millions of those 'who read the newspapers from behind', listeners of radio reports or consumers of fan commercial merchandise. The monograph has been very well received by both the professional and general public, as evidenced by the very positive reviews in the scientific press and on social media.

Its findings can be used not only by historians and sociologists, but also by institutions dealing with sport, culture and media. Thanks to these findings, clubs, museums and sporting event organisers can better understand the historical roots of fandom and work with its current form. The economic benefits lie in the promotion of sports and cultural tourism - growing interest in the historical aspects of sport can bring new visitors to thematic exhibitions or museums. The gender dimension is reflected in the monograph by taking into account the position of women in fan culture, which contributes to a broader perception of gender roles in the sports environment.

- **Specialized map with specialized content *Map of endangered immovable archaeological sites***

Specialised maps with scientific content were created as one of the outputs of the project *Historical Landscape of the borderlands between Silesia and Moravia*. The output of the project was a set of maps in web and analogue form. The main web version created in OpenLayers contains 1625 sites, displayed as points or polygons; sites can be filtered by area, period of existence, monument protection, existing cover, current condition, type of disturbance, type, degree and extent of threat. The development of specialised GIS maps and certified methodologies focused on the historic landscape of Czech Silesia and Northern Moravia is bringing significant positive impacts on the protection of cultural heritage and sustainable development of the region. It will enable more effective identification, prediction and categorisation of archaeological monuments, which will contribute to their protection and better planning of the development of the area. It has a wide application not only among archaeologists and historians, but also among urban planners, public administration or investors in the field of building development, who will thus obtain more accurate information about historical sites. The result will not be used on the basis of a licence agreement, its use will be free of charge, therefore the economic/managerial use cannot be quantified, the use of the map will be beneficial as a source of data in the performance of state conservation, in the scientific activities of research and collection organizations, in the teaching of students at universities. Indirect economic benefits lie in the prevention of irreversible damage to cultural monuments, which will support tourism and the local economy.

- **Specialised map with scientific content *Map of the memory of the landscape of the Moravian and Silesian Sudetenland in danger***

This map was created as one of the outputs of the project *Endangered Memory of the Moravian and*

*Silesian Sudetenland Landscape.* It is a specialised map with information on endangered monuments, categorised on the basis of an analysis of the negative impacts of mining, construction, industrial and agricultural activities and illegal excavations in their area. The methodologies developed will help conservation authorities, forest owners and other stakeholders to make sustainable management decisions that take into account the historical values of the area. Specialised GIS maps with scientific content will provide a detailed overview of threatened sites and enable more effective conservation planning. The result is distributed free of charge. The sustainability of the results is ensured by digitizing the data, allowing for long-term and environmentally friendly use for scientific and practical purposes.

- **Specialized map with scientific content *Map of Culinary Culture of the Czech Lands***

The result was created within the project *Culinary Heritage of Czech Lands: Memory, Presentation and Education.* The map of traditional dishes presents traditional dishes of the Czech lands with the character of essential cultural and historical elements of regional food. Ethnographic areas are the basic locational factor for the presentation of selected traditional dishes. The presentation of dishes and drink originating in the individual regions of Bohemia, Moravia and Czech Silesia by means of the specialised map presented here is necessarily exemplary. The selection was primarily based on the needs and interests of the target groups of the map users. It presents 5 types of events: events focused on one type of dish; raw material-oriented events; events presenting the diversity of local traditional cuisine; fish-oriented events; wine-oriented events. By means of different map layers, the map not only allows its users to access information on the implementation of these types of events in a uniform and systematic way, but also, above all, leads them to expand their knowledge of gastronomic traditions by presenting selected experiential culinary tourism events in the context of cultural, landscape and agricultural features. In addition, it provides opportunities for comparing the situation in the various regions, thus adding a further dimension to this knowledge.

The economic benefits lie in the support of local producers, restaurants and gastronomic event organisers, thereby strengthening regional tourism and the development of rural areas. The specialised map contributes to the development of experiential tourism and encourages visitors to discover local traditions and products. Last but not least, it is an important tool for preserving and popularising the regional culinary heritage of the Czech lands and developing regional identity.

- **Certified methodology *Methodology of identification and documentation of culinary heritage***

The methodology is the result of basic research and field investigations, carried out using interdisciplinary methods from the fields of historical sciences, cultural anthropology, ethnology, cultural tourism and gastronomy. It presents a comprehensive tool for identifying, documenting and verifying dishes, drink and other elements of diet with culinary heritage value, a tool that will help to develop awareness of the existence and value of this specific type of cultural heritage and thus contribute to its protection. The preservation of culinary heritage for future generations is of incalculable social and cultural-historical value.

The result is distributed free of charge. The sustainability of the result is ensured by digitising the data and making it available off-line and on-line. The application of the methodology in the field of protection and preservation of culinary heritage supports local producers, which can positively influence the economy of the region through the interest in regional food and traditional recipes. The gender dimension is present in the reflection on the roles of women and men in traditional

cuisine and in the way culinary heritage is shared between generations.

The higher level of protection and preservation of cultural traditions of the region and entities, their presentation at a highly professional level with the involvement of heritage institutions and structures of tourism and gastronomy can be considered as positive impacts of the methodology.

- **International Workshop and Summer School for *Little (Big) Women***

The international professional workshop (2023) was attended by researchers with a focus on gender history and family research (medieval and early modern) from territorially and historically similar regions (CZ, PL, SK, UA), dealing with the issue of the pre-modern family and the changing position of women in different social classes and situations. The results of this workshop were published in the form of online study material for students of the upcoming summer school. This took place in September 2023 and focused on developing students' skills in working with all kinds of (mainly written) primary historical sources used for research on family and gender history.

The international scientific workshop produced valuable results that have significant positive impacts on society. The published study materials increase the qualification of students and contribute to the deepening of their analytical skills in working with historical sources. This knowledge is crucial not only for the academic sphere, but also for cultural institutions such as museums and archives, where it can be applied in the interpretation of historical data. The study materials created in the workshop in an online form, popularizing history from the perspective of gender issues, are not only an interesting popularization venture, but will serve primarily as teaching material not only in university, but also in secondary school settings.

From the sustainability point of view, the digitisation of the materials is important, making them widely available without the need for printing, thus reducing the ecological footprint. The workshop also contributed to international cooperation and knowledge sharing among researchers from Central Europe, which strengthens long-term scientific collaboration and promotes sustainable development in the humanities.

- **Scientific publication *Fish cuisine of the Czech lands. Cultural-historical traditions and current aspects***

The result was created within the project *Cultural traditions of Czech fishing in the light of its utilization in tourism and landscape architecture*. It focuses on the issue of fish and fish dishes and their place in the diet and everyday life of the inhabitants of the Czech lands in the past and present. It draws on results of interdisciplinary research that straddles history and cultural history, economics with a focus on tourism, water management and aquaculture. It emphasizes the importance of fish and aquatic animals in the diet of the inhabitants of the Czech lands, points out their indispensability for a healthy lifestyle and opens up a wide range of knowledge for application in home cooking when organizing events and cultural and historical events. It highlights the role of gastronomy, with a focus on fish cuisine, in the pre-COVID tourism in the Czech lands.
The contribution of the publication is not only in the expansion of knowledge about the use of freshwater, and some marine, fish in the diet of our ancestors, the role of fish cuisine in the contemporary gastronomy of the Czech lands, but also about the possibilities of implementing these ingredients in the current diet. In this area, it has its implications for both female and male users. It thus contributes to maintaining awareness of the traditions of a specific segment of culinary culture, to developing and increasing the share of freshwater fish of domestic origin in the diet of the current younger and middle generation, and hence to interest in domestic fish production. This may also have an indirect impact on the economic side of the Czech fish farming and gastronomy industry

- **Scientific article *Digitized Image Analysis of Insula Echogenicity Detected by TCS-MR Fusion Imaging in Wilson's and Early-Onset Parkinson's Diseases*.**

The result addresses difficult-to-treat degenerative diseases with new computationally intensive diagnostic methods. These methods open avenues to early and precise diagnostics, providing not only positive societal impact on target group patients, but also reducing the amount of further medical examinations and treatment with impact also on sustainability. The results are relevant for both hospital and research specialists in neurophysiology and neurology. The research team was gender-balanced (three women, four men).

Transcranial sonography (TCS) can reveal pathology in brain structures including insula. This study compared insula echogenicity among 22 patients with Wilson's disease (WD), 21 patients with early-onset Parkinson's disease (EO-PD) and 24 healthy patients. Echogenicity of predefined brain structures (insula, lentiform nucleus, caudate nucleus, substantia nigra and raphe nuclei) was evaluated using digitized analysis of TCS fusion imaging with magnetic resonance. Cortical, subcortical and cerebellar atrophy and ventricle diameters were determined from magnetic resonance images. The mean echogenicity index of insula did not differ between males and females ($p = 0.92$), but the echogenicity of insula was higher in patients with WD than in patients with EO-PD and healthy patients ($p < 0.05$). The substantia nigra echogenicity was higher in patients with EO-PD, and lentiform nucleus echogenicity was higher in patients with WD ($p < 0.05$). The echogenicity of insula correlated with lentiform nucleus echogenicity ($r = 0.75$) but not with age ($r = –0.14$), disease duration ($r = –0.36$), symptom severity ($r = 0.28$), cortical ($r = 0.11$) nor subcortical ($r = 0.05$) atrophy.

- **Scientific article *P systems attacking hard problems beyond NP: a survey*.**

An influential paper of basic research in Q1 journal (as of 2021 in JCR, Q2 in 2024), attacking especially difficult computational problems with unconventional bio-inspired and massively parallel methods. These methods suggest the future use of bio-hardware which is extremely energy-efficient. The paper societal impact is indirect, via the use of the results in other areas of computer science and, in turn, in practical applications.

A great attention is traditionally paid to the results demonstrating a possibility to solve NP-complete problems in polynomial time by means of various unconventional computational models such as membrane (P) systems. A bit less common is the fact that almost all models of P systems with this capability are actually stronger: some of them are able to solve PSPACE-complete problems in polynomial time, while others have been recently shown to characterize the class (which is conjectured to be strictly included in PSPACE). A large part of these results has appeared quite recently. In this survey, we focus on strong models of membrane systems which have the potential to solve hard problems belonging to classes containing NP. These include P systems with active membranes, P systems with proteins on membranes and tissue P systems, as well as P systems with symport/antiport and membrane division and, finally, spiking neural P systems. We provide a survey of computational complexity results of these membrane models, pointing out some features providing them with their computational strength. We also mention a sequence of open problems related to these topics.

Table 3.4.1 - Overview of research results in the period under evaluation

| Type of result[30] | Year of application | Name |
|---|---|---|
| Jimp – scientific article in an impacted periodical | **2020** | Digitized Image Analysis of Insula Echogenicity Detected by TCS-MR Fusion Imaging in Wilson's and Early-Onset Parkinson's Diseases. |
| Jimp – scientific article in an impacted periodical | **2020** | P systems attacking hard problems beyond NP: a survey. |
| B – scientific book | **2021** | Rybí kuchyně českých zemí. Kulturně-historické tradice a současné aspekty<br>Fish cuisine of the Czech lands. Cultural-historical traditions and current aspects |
| Nmap – Specialized map with scientific content | **2021** | Mapa kulinární kultury českých zemí<br>Map of Culinary Culture of the Czech Lands |
| B – scientific book | **2022** | Pionýři, malované děti? Pionýrská organizace ČSM a dětský kolektiv (1949–1968)<br>Pioneers, painted children? Pioneer organization ČSM and children's collective (1949–1968) |
| B – scientific book | **2022** | Na football! Fotbalové diváctví a fanouškovská kultura v českých zemích do roku 1939<br>(Let´s go out to the) Football match! Football Spectatorship and Fan Culture in the Czech Lands prior to 1939 |
| Nmap – Specialized map with scientific content | **2022** | Mapa ohrožených nemovitých archeologických památek<br>Map of endangered immovable archaeological sites |
| Nmap – Specialized map with scientific content | **2022** | Mapa paměti krajiny moravských a slezských Sudet v ohrožení<br>Map of the endangered memory of the Moravian and Silesian Sudetenland landscape |
| B – scientific book | **2023** | Metodika identifikace a dokumentace kulinárního dědictví<br>Methodology of identification and documentation of culinary heritage |
| W International workshop | **2023** | Little (Big) Women |

Note 1: Please list and describe the results already applied in practice or heading towards application in practice with existing or prospective impact on the society (e.g. domestic or foreign patents, sold licenses, spin-offs, prototypes, varieties and breeds, methodologies, significant analyses, surveys, expert outputs for policymaking or other forms of non-publication outputs, etc.). Indirect results of research, development and creative activities with documented societal impact, e.g. expert activities, services to the public/government/scientific community, may also be reported.

[30] Specify the specific type of result. Add rows as needed.

## TRANSFER OF RESULTS INTO PRACTICE

### 3.5 Transfer of results into practice

The evaluated unit shall briefly describe its system for transferring results into practice. It shall also indicate up to five of the most typical users of its results, whether in the university environment or in the non-university application/corporate sphere, detailing how it collaborates with them and how it seeks out new users (using a maximum of five specific examples).

It will also indicate whether and how it commercialises R&D&I results (e.g. selling licences, setting up start-up or spin-off companies, etc.)[31], providing brief description of the commercialisation methods used. The effectiveness of the transfer of results and the commercialisation of R&D&I results will be described using a selection of results (max. five) listed in annex table (Table 3.4.1).[32]

Additionally, the evaluated unit shall briefly comment on the funds received during the period of 2019–2023 from non-public, non-grant sources (e.g. licences sold, spin-off revenues, donations, etc.). A full summary shall be provided in annex table (Table 3.5.1).

*Maximum 500 words plus 200 words for each provided example of finding a new user of results and commercialization.*

**Self-assessment:**

The transfer of the results of the faculty's scientific research activities takes place in close connection with the individual segments reflecting the interdisciplinary structure of their workplaces, research teams and creative activities. The starting point is the close links with professional collaborators from specific areas of scientific and societal practice involved in selected research activities and student teaching. A reasonable role is also played by the demand from the public sphere, directing some research topics and hence the form of their presentation and application in practice.

**In the field of historical sciences, cultural heritage and archaeology**, the results of research and project activities were transferred into practice in cooperation with specific experts from professional institutions in the role of application and presentation actors, established by the Ministry of Culture, the Ministry of Agriculture, the Ministry of the Interior, and local government authorities of various levels. Typical users of the results were: Archives, museums and other memory institutions (Regional Archives in Opava, state district archives in the Czech Republic); National Heritage Institute, its territorial workplaces and installed objects; museums (Silesian Museum, National Museum of Agriculture in Prague), local, district and regional museums (Museum of Těšín, Museum of Hlučín, city museums of Krnov, Odra, Bílovec, Regional Museum Litomyšl, etc.); The transfer took place through lectures, exhibitions (individual, joint), workshops for experts and the public, joint publications, etc. The results were put into practice through cooperation with bilateral instruments of public diplomacy (Czech-Polish Forum), non-public sector (Polish- Czech Scientific Society, Home Museums Network), tourism structures.

New users of the results were gained mainly thanks to interdisciplinary project cooperation and contacts with professional practice (territorial workplace of the National Heritage Institute outside the region of the faculty's activity); with business entities (Research Institute of Brewing and Malting), etc., as well as thanks to successful on-line and off-line presentation of R&D results (museums, media workplaces outside the region).

[31] In the case of military HEIs, their specific position is taken into account when evaluating the commercialisation/evaluation of R&D&I results.
[32] If the commercialisation of R&D&I results is carried out in this way.

The selected activities were non-commercial, contributed to the knowledge of history, present and national awareness of the society, strengthening the identity of the regions within the EU, to the support of cross-border cooperation (Czech-Polish, Czech-Slovak). In addition to the social benefits, economic benefits can be expected in the long term and in cooperation with the gastronomic and tourist industry.

**In the field of informatics,** the cooperation with LPP, ltd. (https://lp-praha.cz/) has a promising impact on the society. LPP is engaged in the development and servicing of military command and control systems, focusing mainly on airborne assets and related infrastructure and software. In 2020, contract research for LPP, titled Application for Joint Control of Unmanned Drone Elements, involved the development of a user environment for controlling a group of unmanned drone elements. This was followed in 2022 by further contract research for LPP, the Autonomous Diagnostic System Application for Predictive Vehicle Platform Diagnostics project. Then there is research on computer processing of natural language and the creation of advanced translators or search tools, etc.

**In the field of foreign language philology,** research activity and its relevance depended on the specific language focus. Foreign language philology focused on the areas of linguistic and literary analysis and interpretation of linguistic data of selected language groups using the corpus method with a focus on current developmental tendencies in language. Emphasis was placed on the possibility of using the results of the research for teaching purposes at all levels of schools as well as in certified and special interest courses within the framework of further education of teaching staff. The transfer of the results of research activities towards applicability in education (foreign language teaching) was of considerable social relevance. The continuation of cooperation with the German publishing house Hueber-Verlag on the creation of Czech versions of textbooks of German as a foreign language and the implementation of didactic and methodological seminars for primary and secondary school teachers in the region can be considered crucial.

**The field of Czech philology** preferred in its research the broad spectrum of contemporary Czech literature and modern linguistic means. An important segment was the international activities aimed at understanding Polish literary production and cooperation in the field of Czech and Polish culture. The transfer of results in the field of Czech philology and librarianship was also carried out in cooperation with institutions of library science. Typical recipients were libraries of various levels and specialisations (Moravian-Silesian Scientific Library in Ostrava). Regular conferences Book in the 21st Century were based on this cooperation: in the period under review, it was the 2020 conference. Another output of the cooperation is the publication series Compendium of Librarianship, organised by the staff of the Institute of the Czech Language and Library Science and published by the Moravian-Silesian Scientific Library in Ostrava.

Scientific research results in the **field of art and new media**, in the segments of photography and film, radio and television production (exhibitions with catalogues; short and feature-length documentaries; screenings) achieved high social relevance. They focused mainly on the documentation and presentation of society-wide topical issues of social and cultural-historical character and contemporary events (e.g. TAČR project: *The Village is the World. Changes in the social climate in the Bruntál region 1978-2018 in the context of Jindřich Štreit's photographs. Period 2019-2021*.). The transfer of the results of applied research and creative activities into practice and their links to the humanities was carried out through collaborators from media practice, cultural and artistic. Typical users of the results were private television and streaming studios, museums and galleries, and cultural institutions. International festivals and their organisers (Colours of Ostrava,

the Statutory City of Ostrava, the Statutory City of Opava), non-profit foundations and societies (the Polish-Czech Scientific Society, etc.) were also recipients. The results were, for example, streaming shows, mediation of cultural programmes (Melting pot), organised conferences and multi-genre festivals (Na cestě - On the Road, Média, dějiny a společnost - Media, History and Society), artistic happenings (Podchod Ostrava – Underpass Ostrava), etc.

Due to the disciplinary focus of the faculty, where the centre of gravity of its scientific and creative (hence also educational) activities lies in the field of humanities and, appropriately, also in the field of arts and new media, it is difficult to commercialize its results at the level of contract research, license sales, start-ups, etc. Many of the activities that are directly or indirectly based on research and creative commissions are to some extent exercised as a form of public service that does not lead to the production of profit. In the context of complementary activities, products are provided to external recipients, e.g. in the field of art and new media, which are indirectly based on research activities, on the basis of cooperation agreements, university or faculty agreements (streaming services, advertising products, etc.).

The faculty does not record any income from non-public sources received during the period under review. The reason for this is the fact that the customers of the results are partners from professional practice outside the commercial sector (memory institutions, museums, heritage protection institutes, etc.); the specific creative outputs demanded by professional practice were mainly based on applied research, but were not primarily of a research nature, but of a media and popularisation nature, and were therefore subject of complementary activities (streaming services, audiovisual and media programmes, exhibitions, etc.).

Table 3.5.1 - Summary of non-public revenues received during the period under evaluation

| Type of revenue | Revenue (in thousands CZK/EUR) | | | | |
|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 |
| | | | | | |
| | | | | | |
| | | | | | |
| Total | | | | | |

Note: Enter funds raised for R&D&I from non-public sources besides grants or contract research (e.g. licences sold, spin-off company revenues, donations, etc.) in the calendar year.

## POPULARIZATION OF VAVAI

### 3.6 The most important activities in the field of popularization of R&D&I and communication with the public

The evaluated unit shall briefly describe its main activities related to the popularisation of R&D&I and communication with the public (e.g. popularisation lectures, citizen science initiatives, etc.) during the period of 2019–2023 and provide up to 10 examples that it considers the most significant.

*Maximum 500 words plus 200 words for each example given.*

**Self-assessment:**

The most important activities in the field of popularization of R&D&I include:

1. Popularization events and participation in national popularization events, where the public is

introduced to the latest research results in the area of developments in science, art and creative activities (*Night of Scientists*, *Week of Science and Technology*, *Week of the Academy of Sciences*, *Week of Humanities*, *Excursions to Robotics Laboratories*, *Observations at the WHOO! Observatory*, methodological and didactic workshops for foreign language teachers, etc.).

2. Workshops to popularize scientific research activities: *Fish Cuisine. Tradition and modern Inspiration for Home Experiential cooking*, *Informatics in practice*.

3. Popular science lectures and debates, e.g. within the Colours of Ostrava.

4. Scientific exhibitions focusing on history, culture, cultural heritage (*With Princes at the Table - Hradec n. Moravicí, Bílovec, Racibórz*) *scientific exhibitions focusing on current trends in multimedia creation and design* (*regular events of Galerie Hauerova 4*, e.g. *Unknown Archaeological Finds from Odersko*, *Endangered poMemory of the Moravian and Silesian Sudetenland Landscape*).

5. Festivals: the international festival of student films *Opavský páv - Opava Peacock* [11] and the multi-genre *festival Na cestě – On the Road*.

6. Audiovisual production with a focus on documentary and presentational role in relation to R&D: popularisation films (*Gastronomic Treasures of Czech Lands*. A set of 7 short films about traditional cuisine of selected regions (*Four Seasons - Autumn, Four Seasons – Winter*), educational films (*Extreme Astrophysics* – 10 educational programmes for spherical projection: *Neutron Star Binary Systems*, *Black Hole Binary Systems*, *Optical Effects in Extreme Gravitational Fields*, *Accretion Structures Near Black Holes and Neutron Stars*, *Radiation in Strong Gravity*, *Life Under Black Suns – Exoplanets Near Black Holes*, *Cosmic Microwave Background*, *X-ray Observational Space Missions*, *Accretion Disk Near Black Holes Up Close*, *Astrophysics Full of Extremes*.

7. Competitions and Olympiads for pupils of all types of schools in the region: *Astronomy Olympiad* (two national finals each year), *Opava Robocup* (competition in programming robotic systems for students of secondary schools), *Robotic X-fight*, *Lesewettbewerb*, *Dramawettbewerb* and *Videowettbewerb* (competitions for pupils of primary schools and students of secondary schools), partner of the competition *With TIPA for the mystery of the electron*.

8. Presentation in the mass media - appearances in TV programmes, cooperation with Czech Radio Ostrava (Czech Radio), popular science articles in the press - in daily newspapers, professional, national science and cultural magazines, presentation of the results of creative activities on social media - Facebook, Instagram, Twitter.

9. Collaboration with theatres on specific productions, whether it is in the form of participation in the preparation of the theatre programme, theatre lecturing or dramaturgical introductions preceding performances, literary evenings and programmes (*Na posedu*, *Literary Evening in Brno*), memorial evenings, author readings.

10. The Visitor Centre primarily provides direct, personal contact between the faculty and the public. It organises various events aimed at popularising science and research at three locations in Opava: the *Fish Pavilion* in Hauerova 4, the *U Vavřince* premises in Hradecká 17 and the Unipoint university space in the Breda & Weinstein shopping centre. In 2019, the Institute of Foreign Languages established the *Pro Lingua* methodological, cultural and professional centre for foreign language teaching, whose main mission is to strengthen interest in language learning, especially in German, Italian and English, professional support for teachers, pupils and students of schools of all levels by organizing lectures and seminars by Czech and foreign experts, popularization of science and communication with the public.

## IMPLEMENTATION OF RECOMMENDATIONS

### 3.7 Implementation of the recommendations in Module 3

The evaluated unit will briefly describe how it has implemented the recommendations for Module 3 from the previous evaluation period, if applicable.

*Maximum 1000 words.*

**Self-assessment:**

In the previous evaluation, the IEP made the following recommendations:

- Continue to develop and seek to translate scientific results into practice and to implement a wider range of projects with economic impact on society.

During the evaluation period, an interdisciplinary approach to research and other creative activities was strongly promoted, both at faculty level and in collaboration with external research and professional institutions. In order to develop research, the results of which should be oriented towards practice, expert teams composed of both academic staff and representatives of the application sphere were created. The above mentioned can be applied in the fields of historical sciences, archaeology and cultural heritage as well as in the field of computer science. As most of the scientific results were achieved in the humanities, it was not possible to achieve the expected and significant results with economic impact.

- Apply for patents and support contract research

The focus of basic and applied research in the field of IT was to achieve relevant results that are in demand or applicable in the application sphere. However, it was not possible to obtain a patent in view of the demand for the desired results, despite the fact that this was contract research.
Basic research in the field of prehistoric, medieval and early modern archaeology focused mainly on applied research in the past period. This was supported by the fact that three external Ministry of Culture (NAKI) projects had been secured. These projects were carried out and their objectives were set in cooperation with partner institutions from the academic and professional environment, with the emphasis on achieving results at the level of certified methodologies, specialised maps, etc. The relatively small archaeological team no longer had the capacity to organise contract research, which is provided by state institutions (National Heritage Institute, Institute of the Czech Academy of Sciences) in the university and the surrounding region.

- Work on technology transfer and further commercialization of R&D&I results

The faculty recognizes, given its predominantly humanities and arts focus, the significant limitations in participating in technology transfer and commercialization of R&D&I results. The research and creative activities that were demanded by external customers were, due to the expected nature of the result, mainly carried out at the level of complementary activities, while the minimum volume of income was also conditioned by the focus of the customers (cultural and memory institutions, local government, etc.).

- Find a balance between applied expertise and research

Recently, especially in the field of historical sciences, it has been possible to find a balance between basic research activities (Czech Science Foundation projects, internal grant projects) and the applied research sphere, where the latter component in particular helps to build close links with the application sphere and to direct the thematic and methodological focus of research, which is

reflected both in practice and in the educational process.

- Develop indicators to measure the quality of interactions with partners

The development of a system for evaluating the quality of mutual cooperation in the form of questionnaires, open or anonymous surveys, etc., has a low level of informative capacity. The organisation of roundtables and workshops of faculty and practice representatives to share experiences and provide feedback proved to be much more beneficial.

- Humanities should present and popularise their results more intensively

At the professional level, it was possible to maintain the already relatively intensive level of publication of scientific research results, with an emphasis on structuring them in accordance with the national Evaluation Methodology 2017 (publications, international and domestic conferences, workshops, invited lectures, certified methodologies and specialised maps). Significantly more emphasis was placed - and it seems with good results - on the presentation of the results of the humanities in the fields of history, philology, library science, interdisciplinary arts and new media, in collaboration with professional partners (museums, galleries, cultural institutions, libraries, etc., in forms accessible to both professional, learned and lay audiences. The target groups were the inhabitants of the region, and selectively other areas of the Czech Republic, across age, social and gender groups (pupils and students of all school levels, teachers, families with children, seniors, interest groups, etc.). Academics from individual disciplinary areas also found their way to the mass media. Students from bachelor, master and doctoral programmes are involved in all events.

- Find other sources of funding

In the past period, the predominant source of funding for research and creative activities beyond the budgeted public resources remained projects of external providers. Despite wide-ranging discussions and searches for possible sources of funding, especially of a non-public nature, they remained unanswered in the conditions of the faculty located in a district town of the Czech-Polish structurally disadvantaged border region. Relatively small research teams, although often interdisciplinary, are not competitive in the context of the existence of nearby universities in Ostrava and Olomouc.

- The faculty is focused on the Czech-Polish region. It would be useful to expand to the whole of Europe, to strengthen international mobility

The faculty has intensified and deepened international cooperation leading to the internationalisation of science and research in all areas of education, both within the Erasmus+ programme and through the so-called strategic management support funds, which have mainly aimed at supporting international mobilities to establish new or deepen existing cooperation with foreign partners across Europe. The Faculty, through its institutes, has been an organiser of major international conferences and professional workshops with international participation. The experience in organising international workshops and conferences will help to develop successful cooperation with Spanish, Polish, German, Austrian, Italian, Slovak and other partners (organisation of summer schools for students, joint international projects). International contacts are also deepened through the participation of academic staff in national and international boards, scientific institutions and especially in upcoming projects.

## A LIST OF SUPPORTING DOCUMENTS/LINKS FOR MODULE 3

| Document name | No. criteria | Location (link in HTML) |
|---|---|---|
| [1] Strategic Plan of the Faculty of Philosophy and Science in Opava for the period of 2021+ | 3.1 | https://box.slu.cz/index.php/s/qvd2w5oekO5dPGy |
| [2] Pioneer Organization and Changes in the Socialistic Forms of Children's Socialization in the Czech Lands (1949–1968) | 3.3 | https://starfos.tacr.cz/en/projekty/GA19-10233S?query=5veqaadnpgjq |
| [3] Sport as a spectacle: Birth of sports spectatorship and fan-culture in Czech society (till 1945) | 3.3 | https://starfos.tacr.cz/en/projekty/GA19-10401S?query=t3yyaac7x24q |
| [4] Testing strong gravity via black holes | 3.3 | https://starfos.tacr.cz/en/projekty/GA19-03950S |
| [5] Schlaraffia: The Element of Play in Nineteenth-century Culture | 3.3 | https://starfos.tacr.cz/en/projekty/GA23-04979S |
| [6] Culinary Heritage of the Czech Lands: Memory, Presentation and Education | 3.3 | https://starfos.tacr.cz/en/projekty/DG18P02OVV067 |
| [7] Historical Landscape of the borderlands between Silesia and Moravia | 3.3 | https://starfos.tacr.cz/en/projekty/DG18P02OVV017 |
| [8] Endangered Memory of the Moravian and Silesian Sudetenland Landscape | 3.3 | https://www.npu.cz/en/about-us/science-and-research |
| [9] Castles in the landscape of the Moravian-Silesian borderland – new forms of presentation of unused historical buildings | 3.3 | https://starfos.tacr.cz/en/projekty/DH23P03OVV035?query=vgnaaadas2uq |
| [10] IT4Innovations excellence in science | 3.3 | https://starfos.tacr.cz/en/projekty/LQ1602 |
| [11] International film festival Opavský páv | 3.6 | https://opavskypav.slu.cz/in-english/ |

# SELF-EVALUATION REPORT FOR MODULE 3

## THE NAME OF THE UNIT BEING EVALUATED: School of Business Administration

## FORD: 5 - Social sciences

### SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

**3.1 Introductory information about the unit under evaluation**

The evaluated unit will describe its mission and vision and provide a general self-reflection of the societal contribution of R&D&I, along with its long-term goals in the fields it develops. The distribution of research activities by type of research will also be commented on.[1] The evaluated unit will describe its organisational structure and size (staffing, number of students, number of study programmes implemented, etc.) based on the data provided in annex tables 3.1.1 to 3.1.6.

*Maximum 1000 words.*

This is a non-rated indicator that serves as an introduction to the evaluated unit, providing context for data in indicators 3.2-3.7.

**Self-assessment:**

The School of Business Administration of Silesian University in Opava (SU SBA) is a modern regional educational and research institution focused on the development of economic, business, and management disciplines, grounded in both theory and practical application. Its mission is to provide high-quality higher education by integrating theory with practice, supported by research activities and cooperation with the application sphere. SU SBA's primary goal is to foster academic excellence, producing graduates who are not only well-prepared for the labor market but also capable of contributing to societal and regional development. The faculty's mission is also realized through its active engagement in research activities that benefit both academia and practice. The faculty also benefits from collaboration within the European University STARS EU project, of which Silesian University has been a member since 2023 as one of nine European universities.

The faculty's vision is to create an inspiring academic environment that fosters innovation, interdisciplinary collaboration, and the transfer of the latest scientific knowledge into education and practice with the emphasis given to the regional challenges. SU SBA aims to strengthen its position among prestigious economic faculties in the Czech Republic and abroad while enhancing international cooperation in research and development.

The faculty's long-term goal in the field of research and development is to expand its research focus in key economic and managerial disciplines, effectively engage academic staff and students in research projects, and support high-quality publications in prestigious scientific journals. The faculty

[1] Basic, applied, contract, artistic research (see Definition of Terms in Methodology HEI2025+).

also emphasizes applied research with a direct impact on practice, maintaining close cooperation with businesses, public administration, and the non-profit sector.

The faculty's research activities can be categorized into basic, applied, and contract research. Basic research focuses on developing theoretical knowledge in economics, management, business studies and applied statistics. The basic research was mainly carried out in two standard grant projects of Czech Science Foundation: i) Non-standard optimization and decision-making methods in management processes, and ii) Supporting Decision Processes with Pairwise Comparisons and Data Mining. Academic staff and students have also been involved in research carried out in a number of internal projects (especially Student Grant Competition, Internal Grant Competition at Silesian University).

Applied research is aimed at utilizing scientific findings in practice, such as through collaboration with the business sector or public administration. Specifically, during the period 2019-2023, four projects of Technological agency Czech Republic (TACR) were solved at the SBA. Two projects were applied within the programme BETA 2, that supporting applied research and innovation for the needs of public authorities, especially for the needs of those authorities that are not providers of support for research, development and innovation: i) Assessment of the impact of the system changes in university education since 2016, and ii) Mapping of activities and associated personnel capacities within the framework of support for kindergartens, primary and secondary schools at the level of individual regions. Two projects are solved within the SIGMA programme, where the aim is to support applied research leading to the creation of new results applicable in practice, to address the challenges and needs of society and the economy, and to support the solution of systemic measures of the research and innovation environment: i) Second career entrepreneurship – from corporate to unicorn, and ii) Resilience of Smart Cities and Villages of the Moravian-Silesian Region). Contract research is conducted based on specific requirements from external partners and institutions.

The SU SBA consists of five departments responsible for education and research in various specialized fields (Department of Economics and Public Administration, Department of Business Economics and Management, Department of Finance and Accounting, Department of Informatics and Mathematics, Department of Tourism and Leisure Activities) [1]. Key components also include the Institute for Interdisciplinary Research. Each department has a developed concept of scientific research activities which lists the main activities where research is directed. The faculty’s research activities are supported by a team of highly qualified academic staff, including professors (3), associate professors (14), assistant professors (39-45), and assistants (6-7), as well as a significant number of doctoral (10-18) and master’s students. The faculty’s research team also includes specialists in mathematics, statistics, and informatics, ensuring a strong interdisciplinary approach to research. Therefore, projects and published activities are directed towards the following FORD fields: 5. Social Sciences (particularly 5.2, 5.8) and 1. Natural Sciences (particularly 1.1, 1.2).

The SU SBA offers academic and professional study programmes. On average, SBA offers 11 bachelor's degree programmes, 5 master's degree programmes and 1 doctoral degree programme. On average, 2200 students studied at SU SBA during the period 2019-2023 yearly, without lifelong learning courses.

Research at SU SBU focuses on the contribution to knowledge and development of the field, as well as the societal and regional contribution. The societal contribution of SU SBA’s research is reflected in the broad areas that the faculty develops, mainly in the social entrepreneurship, support for non-profit organizations, volunteering, social services, green economy, sustainability in business

activities, regional development, support for innovations of local ecosystems, retention of young people in the region, support for regional strategic goals, etc. Through its research, SBA plays a significant role in advancing knowledge in social sciences, with a particular emphasis on economics, business and management or finance. In addition to these areas, the faculty also contributes to the development of mathematical, statistical, and informatics research. Research in these areas plays a critical role in supporting and enhancing the faculty's research activities in economics and business. These fields are essential in developing quantitative models and data analysis techniques that are vital for both theoretical and practical applications.

Research at SU SBA focuses on addressing real-world and regional challenges, and the results are regularly transferred to industry and public administration, ensuring that they are directly relevant to societal needs. The faculty's research outcomes not only enhance academic knowledge but also have a strong impact on economic policy-making, business practices, and social innovation.

Table 3.1.1 - Staffing per FTE[2]

| Academic/ Professional position | Total / Of which women | | | | | |
|---|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 | Total |
| Professor | 3/0 | 3/0 | 3/0 | 3/0 | 3/0 | 3/0 |
| Associate Professor | 17/7 | 17/7 | 16/7 | 15/6 | 17/7 | 19/8 |
| Assistant Professor | 45/27 | 41/28 | 50/30 | 53/32 | 50/29 | 60/35 |
| Assistant | 8/3 | 7/4 | 7/5 | 7/5 | 7/5 | 11/6 |
| R&D Personnel[3] | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 |
| Researchers in other categories[4] | 1/0 | 2/1 | 2/1 | 2/1 | 2/1 | 2/1 |
| Technical and economic staff[5] | 3/3 | 3/3 | 3/3 | 3/3 | 3/3 | 3/3 |
| Scientific, research and development staff involved in teaching activities | 73/37 | 68/39 | 76/42 | 78/43 | 77/41 | 93/49 |
| Early career researchers[6] | 21/15 | 22/15 | 22/14 | 21/15 | 20/14 | 30/20 |
| Total[7] | 77/40 | 73/43 | 81/46 | 83/47 | 82/45 | 98/53 |

[2] The average number of hours worked is calculated as the ratio of the total number of hours actually worked during the reference period, from 1 January to 31 December, by all staff (including agreement on work activity, excluding agreement on work performance) to the total annual working time pool per full-time employee. The full- time status of the worker in the evaluated unit is always reported. If an employee holds more than one type of full-time job within the evaluated unit, the total sum of the two shall be reported.

[3] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).

[4] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).

[5] Who participates in the management and support of R&D&I in the institution.

[6] See Definition of Terms in Methodology HEI2025+.

[7] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I personnel, researchers in other categories and technical and economic staff.

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D personnel, researchers in other categories and technical and economic staff are mutually exclusive, i.e. one staff member is reported under one category only. Scientific, research and development staff involved in teaching activities, as well as early career researchers are reported collectively for all the above-mentioned categories.

### 3.1.2 Age structure of R&D&I personnel of the evaluated unit and their structure by job title and gender in the year 2019 (numbers of physical employees and personnel)[8]

| Academic/ professional position | Under 29 years | | 30-39 years old | | 40-49 years old | | 50-59 years old | | 60-69 years old | | 70 years and older | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women |
| Professor | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Associate Professor | 0 | 0 | 2 | 1 | 9 | 3 | 2 | 2 | 2 | 1 | 1 | 0 |
| Assistant Professor | 1 | 1 | 17 | 9 | 15 | 9 | 8 | 7 | 4 | 1 | 0 | 0 |
| Assistant | 1 | 1 | 1 | 0 | 1 | 0 | 3 | 1 | 2 | 1 | 0 | 0 |
| R&D Personnel[9] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Researchers in other categories[10] | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Technical and economic staff[11] | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 |
| Scientific, research and development staff involved in teaching activities | 2 | 2 | 19 | 9 | 26 | 12 | 13 | 10 | 10 | 3 | 1 | 0 |
| Early career researcher[12] | 1 | 1 | 13 | 8 | 4 | 3 | 3 | 3 | 0 | 0 | 0 | 0 |
| Total[13] | 3 | 2 | 21 | 11 | 26 | 12 | 15 | 12 | 10 | 3 | 2 | 0 |

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D Personnel, Researchers in other categories and Technical and economic staff are mutually exclusive, i.e. one staff member is reported in only one category. The categories of scientific, research and development staff involved in teaching activities and early career researchers are reported collectively for all the above-mentioned categories.

[8] The total number of employees/workers as of 31st December of the calendar year in question is to be entered, irrespective of the level of time worked, but only in an employment relationship (including agreement on work activity, excluding agreement on work performance). Other types of contractual relationships under the Civil Code that involve purchase of services are not included.

[9] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).

[10] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).

[11] Who participates in the management and support of R&D&I in the institution.

[12] See Definition of Terms in Methodology HEI2025+.

[13] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I Personnel, Researchers in other categories and technical and economic staff.

3.1.3 Age structure of R&D&I personnel of the evaluated unit and their structure by job title and gender in the year 2023 (numbers of physical employees and personnel)[14]

| Academic/ professional position | Under 29 years | | 30-39 years old | | 40-49 years old | | 50-59 years old | | 60-69 years old | | 70 years and older | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women |
| Professor | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Associate Professor | 0 | 0 | 2 | 1 | 10 | 2 | 2 | 2 | 3 | 2 | 0 | 0 |
| Assistant Professor | 0 | 0 | 16 | 11 | 18 | 8 | 10 | 7 | 5 | 3 | 1 | 0 |
| Assistant | 1 | 1 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 0 |
| R&D Personnel[15] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Researchers in other categories[16] | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Technical and economic staff[17] | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 |
| Scientific, research and development staff involved in teaching activities | 1 | 1 | 17 | 11 | 28 | 11 | 13 | 11 | 10 | 6 | 4 | 0 |
| Early career researcher[18] | 1 | 0 | 14 | 10 | 3 | 2 | 2 | 2 | 0 | 0 | 0 | 0 |
| Total[19] | 2 | 2 | 19 | 12 | 31 | 12 | 16 | 13 | 10 | 6 | 4 | 0 |

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D personnel, researchers in other categories and technical and economic staff are mutually exclusive, i.e. one staff member is reported under one category only. Scientific, research and development staff involved in teaching activities, as well as early career researchers are reported collectively for all the above-mentioned categories.

[14] The total number of employees/workers as at 31.12. of the calendar year in question is to be entered, irrespective of the level of time worked, but only in an employment relationship (including agreement on work activity, excluding agreement on work performance). Other types of contractual relationships under the Civil Code that involve purchase of services are not included.

[15] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).

[16] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).

[17] Who participates in the management and support of R&D&I in the institution.

[18] See Definition of Terms in Methodology HEI2025+.

[19] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I personnel, researchers in other categories and technical and economic staff.

Table 3.1.4 – Students

| Type of study | 2019 | | 2020 | | 2021 | | 2022 | | 2023 | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women |
| Undergraduate | 1128 | 692 | 1734 | 1053 | 1888 | 1140 | 1681 | 951 | 1602 | 921 | 4786 | 2809 |
| Master's[20] | 515 | 383 | 625 | 429 | 588 | 405 | 525 | 360 | 571 | 374 | 1776 | 1159 |
| Doctoral | 18 | 6 | 14 | 8 | 16 | 6 | 11 | 5 | 10 | 5 | 38 | 20 |
| Lifelong Learning Courses | 301 | 233 | 184 | 147 | 170 | 130 | 339 | 270 | 446 | 337 | 1440 | 1117 |
| Total | 1962 | 1314 | 2557 | 1637 | 2662 | 1681 | 2556 | 1586 | 2629 | 1637 | 8040 | 5105 |

Table 3.1.5 - Study programmes in Czech/English

| Type of study programme | Total[21] / Of which professional study programmes | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2019 | | 2020 | | 2021 | | 2022 | | 2023 | | Total | |
| Undergraduate | 5/0 | 2/0 | 9/0 | 4/0 | 11/0 | 6/0 | 14/1 | 8/0 | 14/1 | 8/0 | 6/1 | 8/0 |
| Master's | 4/1 | 0/0 | 5/1 | 0/0 | 5/1 | 0/0 | 6/1 | 0/0 | 6/1 | 0/0 | 6/2 | 0/0 |
| Doctoral | 1/1 | 0/0 | 1/1 | 0/0 | 1/1 | 0/0 | 1/1 | 0/0 | 1/1 | 0/0 | 1/1 | 0/0 |
| Lifelong Learning courses | 21/0 | 1/0 | 10/0 | 1/0 | 8/0 | 1/0 | 17/0 | 1/0 | 21/0 | 1/0 | 19/0 | 1/0 |
| Total | 31/2 | 3/0 | 25/2 | 5/0 | 25/2 | 7/0 | 38/3 | 9/0 | 42/3 | 9/0 | 32/4 | 9/0 |

Note: For each SP type, enter the number of SPs in Czech language in the first cell and insert the number of SPs in English language after the slash in the same cell (e.g. 15/3), enter the number of professional SPs in Czech language in the second cell and insert the number of professional SPs in English language after the slash. Follow a similar procedure in the last column of the table (Total).

3.1.6 – R&D&I capacities

| R&D&I field | FORD | FORD share [%] | Predominant type of research | Total share of industry group [%] |
|---|---|---|---|---|
| 1. Natural Sciences | 1.1 Mathematics | 6 | Basic Research | 10 |
| | 1.2 Computer and information sciences | 4 | Basic Research | |
| | 1.3 Physical sciences | | Zvolte položku. | |
| | 1.4 Chemical sciences | | Zvolte položku. | |
| | 1.5 Earth and related environmental sciences | | Zvolte položku. | |
| | 1.6 Biological sciences | | Zvolte položku. | |
| | 1.7 Other natural sciences | | Zvolte položku. | |
| 2. Engineering and Technology | 2.1 Civil engineering | | Zvolte položku. | |
| | 2.2 Electrical engineering, Electronic engineering, Information engineering | | Zvolte položku. | |

[20] All master's degree students are listed, regardless of the length of their programme of study.

[21] The total number of study programmes for which admissions have been announced in a given academic year.

| | | | | |
|---|---|---|---|---|
| | 2.3 Mechanical engineering | | Zvolte položku. | |
| | 2.4 Chemical engineering | | Zvolte položku. | |
| | 2.5 Materials engineering | | Zvolte položku. | |
| | 2.6 Medical engineering | | Zvolte položku. | |
| | 2.7 Environmental engineering | | Zvolte položku. | |
| | 2.8 Environmental biotechnology | | Zvolte položku. | |
| | 2.9 Industrial biotechnology | | Zvolte položku. | |
| | 2.10 Nanotechnology | | Zvolte položku. | |
| | 2.11 Other engineering and technologies | | Zvolte položku. | |
| 3. Medical and Health Sciences | 3.1 Basic medicine | | Zvolte položku. | |
| | 3.2 Clinical medicine | | Zvolte položku. | |
| | 3.3 Health sciences | | Zvolte položku. | |
| 4. Agricultural and veterinary sciences | 4.1 Agriculture, Forestry, and Fisheries | | Zvolte položku. | |
| | 4.2 Animal and Dairy science | | Zvolte položku. | |
| | 4.3 Veterinary science | | Zvolte položku. | |
| | 4.4 Other agricultural sciences | | Zvolte položku. | |
| 5. Social Sciences | 5.1 Psychology and cognitive sciences | | Zvolte položku. | 90 |
| | 5.2 Economics and Business | 89 | Balanced basic and applied research | |
| | 5.3 Education | | Zvolte položku. | |
| | 5.4 Sociology | | Zvolte položku. | |
| | 5.5 Law | | Zvolte položku. | |
| | 5.6 Political science | | Zvolte položku. | |
| | 5.7 Social and economic geography | 1 | Basic Research | |
| | 5.8 Media and communications | | Zvolte položku. | |
| | 5.9 Other social sciences | | Zvolte položku. | |
| 6. Humanities and the Arts | 6.1 History and Archaeology | | Zvolte položku. | |
| | 6.2 Languages and Literature | | Zvolte položku. | |
| | 6.3 Philosophy, Ethics and Religion | | Zvolte položku. | |
| | 6.4 Arts (arts, history of arts, performing arts, music) | | Zvolte položku. | |
| | 6.5 Other Humanities and the Arts | | Zvolte položku. | |
| | Total | 100 % | - | 100 % |

## RECOGNITION BY THE RESEARCH COMMUNITY

**3.2 Recognition by the research community**

The evaluated unit will briefly comment on its position in the research community. It shall consider individual and other prestigious R&D&I awards, participation of its academic staff in the editorial boards of international scientific journals, elected membership in professional societies, major invited lectures given by the evaluated unit's academic staff abroad or by foreign scientists and other relevant guests at the evaluated unit. Additionally, it will address the involvement of staff in the evaluation of national or European project/programme calls over the period of 2019–2023 based on the data provided in annex tables 3.2.1 to 3.2.5 (max. 10 most relevant items). If necessary, the evaluated unit shall list any additional services to the scientific community that it considers relevant.

*Maximum 1000 words.*

**Self-assessment:**

The SU SBA has a strong presence in the national and international research communities. Its researchers contribute to scientific development through organization of international conferences, editorial board memberships (Table 3.2.2), participation in prestigious projects or invited lectures (Table 3.2.3) [2] and [3].

The SU SBA has a long tradition of organizing international scientific conferences that attract leading experts and researchers. The COVID-19 pandemic significantly impacted conference organization in the evaluation period, requiring adaptations such as virtual and hybrid formats. Key conferences include: i) International Conference on Finance and Banking (ICFB) is a long-established conference with a strong international presence, bringing together academics and professionals to discuss the latest developments in finance and banking. ii) International Conference on Decision-Making for Small and Medium-Sized Enterprises (DEMSME) is a meeting of professionals from universities and businesses interested in the theory and applications of decision-making research using informatics, mathematics, business economics and management, and marketing approaches in the practice of SMEs. iii) Economic and Societal Challenges of the European Economy Conference reflects the actual situation in the European and global economy. The conference continues the tradition of events focused on the economic policy of EU member states, organised by the SU SBA. The other conferences are iv) International Scientific Conference Current Trends in Spas, Hospitality and Tourism, and v) International conference for PhD students and young researchers Karviná Ph.D. Conference on Business and Economics.

Academic staff have been invited as keynote speakers and guest lecturers at international conferences and universities (significant contributions are presented in Table 3.2.3). Moreover, SU SBA invites distinguished international experts as keynote speakers at conferences organized or co-organized by the faculty (Table 3.2.4). As an example, prof. Bruno Sergi from University of Mesina, Italy and Harvard University, USA spoke at the ICFB conference in 2019 or Giovanni Cerruli (Research Institute on Sustainable Economic Growth, Italy) in 2023. In addition, professor Yu-Wang Chen (The University of Manchester, United Kingdom) or Professor Anna Ujwary-Gil (Institute of Economics, Polish Academy of Sciences, Warsaw, Poland) had a keynote speech at DEMSME conference.

Another area of recognition by the research community is journal publishing. Since 1998 the SU SBA has been publishing the peer-reviewed scientific journal Acta academica karviniensia. The journal is now published under the SCIENDO platform and is being prepared for the application process for inclusion in the SCOPUS database.

The SU SBA also cooperates in the publication of the impacted scientific journal E+M Economics and Management, which publishes original scientific contributions based on theoretical and empirical analysis in the fields of economics, business economics, finance, management, or information management and marketing. The journal has been listed in the Web of Science database since 2011.

The SU SBA annually announces a competition for the Dean's Award for significant publishing activities of academic staff and PhD students, which has contributed to increasing the prestige of SU OPF in the field of science and research. From the external awards, one doctoral dissertation was awarded.

A weakness of the SU SBA is the involvement and participation of academics in the evaluation of research project/programme calls relevant to the R&D&I area at the unit. However, academics are members of international and national institutions and organisations of importance, e.g. European Council for Small Business and Entrepreneurship (ECSB), Czech Economic Society (CZ), CMStatistics, group Dependence model and copulas (UK), KES International (UK), European Council of Small Business (Finland), Czech Marketing Association (CZ), and APEK – Association of E-commerce in Czech Republic. The evaluation period was significantly affected by the pandemic and therefore limited opportunities to attend conferences and present papers occurred. Therefore, there was little chance of receiving awards. Here is a good opportunity to enhance the quality of this area as well as the involvement of academics in the evaluation research project.

In 2019 - 2023, the SU SBA participated in scientific research projects of international importance. The SU SBA participated in an international project of the transnational scientific research network COST EU Cost Action CA18115 entitled "Transnational Collaboration on Bullying, Migration and Integration at School Level" supported by the European Commission (see part 3.3). Within the HORIZONT 2020 programme, the partner and principal investigator Moravian-Silesian Innovation Centre initiated a project from the call INNOSUP-05-2018-2020: peer learning of innovation agencies, to which SU was invited as a reliable partner in the field of R&D.

In the research, some academics collaborate with the Czech Academy of Sciences with several joint publications. The SU SBA has also long supported the publication of articles with co-authors outside the faculty. The internationalisation of the SU SBA is particularly evident in the area of cooperation within STARS EU. The STARS EU Alliance of European Universities (of which the Silesian University is a part) has been awarded a four-year grant in the Erasmus+ "European Universities" call. The Alliance, which is coordinated by the Hanze University of Applied Sciences (Groningen, Netherlands). This cooperation opens up opportunities for deeper collaboration, international science and research project submissions and research cooperation. Moreover, Assoc. Prof. Iveta Palečková was awarded a Fulbright Scholarship and participated in the Summer Institute of American Studies in the summer of 2022 as part of the United States Institutes for Scholars on U.S. Economics and Business 2022 program. The Institute was hosted by the Institute for Training and Development.

Table 3.2.1 - Prestigious R&D&I awards granted during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Name of the award | Awarding institution |
|---|---|---|
| Radka Kubalová, Ing. Ph.D. | 3rd place in The Competition for the Best Dissertation defended in 2021-2022, Category 1: Economics and Finance | VSB-TU Ostrava |

Note: Provide up to 10 examples.

Table 3.2.2 Participation of academic staff of the evaluated unit in editorial boards of international scientific journals during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Name of scientific journal, ISSN |
|---|---|
| Tomáš Heryán, Ing. Ph.D. | Studia Universitatis Vasile Goldis Arad, Seria Stiinte Economice, ISSN 1584 – 2339 |
| Kamila Turečková, doc. Ing. Ph.D. MBA | Geographia Technica, 1842-5135 |
| Jan Górecki, Ing. Ph.D. | Journal of Statistical Software, 1548-7660 |
| Jan Górecki, Ing. Ph.D. | Kybernetika, 0023-5954 |
| Roman Šperka, doc. RNDr. Ing., Ph.D. | Marketing of Scientific and Research Institutions, ISSN 2353-8414 |
| Daniel Stavárek, prof. Ing. Ph.D. | International Journal of Monetary Economics and Finance, ISSN 1752-0479 |
| Daniel Stavárek, prof. Ing. Ph.D. | Banks and Bank Systems, ISSN 1816-7403 |
| Irena Szarowská, Ing. Ph.D., MPA | Acta Universitatis Danubius. Œconomica, ISSN 2065-0175 |
| Jaroslav Ramík, prof. RNDr. CSc. | Fuzzy Optimization and Decision Making, ISSN 1568-4539 |
| Jaroslav Ramík, prof. RNDr. CSc. | Fuzzy Sets and Systems, ISSN 1872-6801 |

Note: Please provide up to 10 examples of academic staff participation in editorial boards of international scientific journals (e.g. editor, editorial board member, etc.).

Table 3.2.3 The most important invited lectures delivered by the academic staff of the evaluated unit at foreign institutions during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Invited lecture title | Name of host institution, or name of conference or event | Year |
|---|---|---|---|
| Jan Górecki, Ing. Ph.D. | Hierarchical Outer Power Archimedean copulas | Technical University Dresden | 2019 |
| Ingrid Majerová, Dr. Ing. | Regional Development and its Measurement in Visegrad Group Countries | University of Information Technology and Management in Rzeszow, Poland | 2019 |
| Roman Šperka, doc. RNDr. Ing., Ph.D. | Getting more from real business data | ICESBA 2021, 6th International Conference on Economic Sciences and Business Administration "BIG DATA-DRIVEN SMART URBAN ECONOMY", 26-27 November 2021, Spiru Haret University, Romania, Keynote Speaker | 2021 |
| Jiří Mazurek, Mgr, PhD, doc | Is the Best-Worst Method Path or Scale Dependent? Evidence from an Experimental Study | The University of Manchester, Alliance Manchester Business School, UK. | 2022 |
| Jan Górecki, Ing. Ph.D. | Pairwise likelihood estimation for copulas with tractable bivariate margins | Polish Academy of Sciences | 2022 |
| Irena Szarowská, Ing. Ph.D., MPA | Does government spending matter for economic growth? Empirical evidence from the Visegrad group | 19th international Conference "MIRDEC 2022", organized by Universidade Autonoma de Lisboa, 23-25 November 2022, Barcelona, Spain., Keynote Speaker | 2022 |

| | | | |
|---|---|---|---|
| Tomáš Heryán, Ing. Ph.D. | Heterogeneous Difference-in-Differences, its Application & Current Issues due to the COVID-19 Pandemic | Vasile Goldiș Western University of Arad, Romania | 2023 |
| Jiří Mazurek, Mgr, PhD, doc | Is the Best-Worst Method Path or Scale Dependent? Evidence from an Experimental Study | McMaster University, Canada | 2023 |
| Janusz Karpeta, PhDr., PhD. | Linguistic and cultural analysis of slogans and advertising spots of Czech and Polish beer brands | 20.7.-21.7. Escola Superior Agrária de Braganca, International Conference on Lúpulo E Cerveja, Portugal | 2023 |
| Miroslava Kostková Ing. Ph.D. | Global trends and innovations in gastronomy | 30.5.-31.5. plenary session in conference to celebrate the 70th anniversary of the founding of the UFT University in Plovdiv, Bulgaria | 2023 |

Note: Provide up to 10 examples.

Table 3.2.4 - The most important lectures by foreign scientists and other guests relevant to R&D&I at the evaluated unit during the evaluation period

| Name, surname and title(s) of the lecturer | Lecturer's employer at the time of the lecture | Invited lecture title | Year |
|---|---|---|---|
| Prof. Bruno S. Sergi | University of Mesina, Italy & Harvard University, USA | The Valuation Consequences of Spin-Off Restructuring. Are these Transactions still Wealth Creating Strategies? | 2019 |
| Ana Iolanda Voda | Alexandru Ioan Cuza University, Iasi, Romania | Young Entrepreneur ≠ Entrepreneurship Education ± Big Five Personal Traits? | 2019 |
| Marcel G. Buijs | IPro Training NL, Netherlands | Effective decision-making using the business model canvas | 2019 |
| Prof. Konrad Kułakowski | AGH University of Science and Technology in Kraków, Poland | Heuristic rating estimation method as a way of ranking prediction based on comparing alternatives in pairs | 2019 |
| Dr. habil. Gábor Dávid Kiss | University of Szeged, Hungary | The Drivers of the Capital Market Movements in the Case of Scandinavia | 2021 |
| Ana Maria Bercu | Alexandru Ioan Cuza University, Iasi, Romania | How the 2030 Agenda for Sustainable Development goals are impacted by the pandemic? Perspectives from administrative science. | 2022 |
| Igor Asanov | INCHER, University of Kassel, Germany | Showing Life Opportunities: Increasing opportunity driven entrepreneurship and STEM careers through online courses in schools | 2022 |
| Prof. Yu-Wang Chen | The University of Manchester, United Kingdom | Business Analytics: A Brief Overview of Teaching and | 2023 |

| | | | |
|---|---|---|---|
| | | Research at Alliance Manchester Business School | |
| Prof. Anna Ujwary-Gil | Polish Academy of Sciences, Warsaw, Poland | Technology and Services Provided by Digital Innovation Hubs in Poland and the Czech Republic: Digital Transformation of Small and Medium-Sized Enterprises | 2023 |
| Giovanni Cerruli | Research Institute on Sustainable Economic Growth, Italy | Optimal policy learning: How data-driven policy-making will transform social, economic and financial policies | 2023 |

Note: Provide up to 10 examples.

Table 3.2.5 - Involvement in the evaluation of national/European research project/programme calls relevant to the R&D&I area at the unit during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Name of the research project/programme call | Name of the contracting authority/guarantor of the project/programme call | Year |
|---|---|---|---|
| | | | |

Note: Provide up to 10 examples.

## RESEARCH PROJECTS

### 3.3 Research projects

The evaluated unit shall list at most 10 (considered most significant by the evaluated unit) research projects/activities (regardless of whether they are supported by public funds or based on contract research[22]) that it has implemented or participated in during the period of 2019–2023[23]. This should be done from the full list in annex tables (Table 3.3.1-3.3.2)[24], regarding particularly the results achieved or the application potential of the projects. The unit should also describe how the research projects contributed to the mission and purpose of the evaluated unit. If the evaluated unit has been a participant in listed project, it shall indicate which other entities were involved and describe its contribution to the project. The interdisciplinary aspects of the projects will also be commented on, along with any collaboration with other units of the evaluated HEI.

*Maximum 300 words per project.*

**Self-assessment:**

In 2019 - 2023, the SU SBA participated in scientific applied, basic and contract research projects of national and international importance [4].

In the years 2019-2023, SU SBA participated in the research project from the call "SMART technologies for improving the quality of life in cities and regions" funded by the European Social Fund, Operational Programme Research, Development, Education (CZ.02.1.01/0.0/0.0/17_049/0008452). The aim of the research was to create a set of composite indicators that can be used to measure social efficiency. The activities were aimed at designing and

[22] For the definition of contract research for the purposes of evaluation in the HE segments, see Article 2.2.1 of the Community Framework for State Aid for Research, Development and Innovation 2014/C 198/01.

[23] Regardless of whether the projects are completed or still ongoing, provided that at least part of the project was implemented during the evaluation period.

[24] The evaluated unit shall only fill tables that are relevant to it.

piloting a SMART solution based on the concept of sustainable development (economic, social and environmental pillars). Attention was also paid to the verification of the link between the concept of sustainable development and the competitiveness of territorial units. Partners of this project were University of Ostrava, Fraunhofer Institute for Industrial engineering IAO, ČEZ ESCO, a.s., ARRIVA MORAVA a.s., Moravian-Silesian Innovation Centre, a.s., AutoCont CZ a.s.

In 2019-2023, the SBA participated in an international project of the transnational scientific research network COST EU Cost Action CA18115 entitled "Transnational Collaboration on Bullying, Migration and Integration at School Level" supported by the European Commission. The project team was divided into 6 Working Groups (WGs) to address the particular problems of bullying, migration and integration in the school systems of each country. SU SBA was represented in WG2, which addressed qualitative research in primary schools with a focus on immigration, diversity and school practices. WG6 addressed how e-technology and the internet can and are used as a pro-social tool to prevent and combat intolerance, racism and xenophobia and to promote inclusion and respect in secondary schools. The aim of the project was to propose measures and policies for the benefit of pupils in an international context.

Within the HORIZONT 2020 programme, the partner and principal investigator Moravian-Silesian Innovation Centre initiated a project from the call INNOSUP-05-2018-2020: peer learning of innovation agencies, to which SU was invited as a reliable partner in the field of R&D. The duration of the project was 1 year - until the end of March 2022. The main objective of the EFFECT-SME project was to improve the quality of innovation support programmes for start-ups and SMEs by developing an efficient and effective methodology that assesses the impact of support programmes on these entities. The general concept of EFFECT SME was based on the exchange of best practices and specific technical knowledge in innovation support, monitoring and evaluation of the impact of support programmes for start-ups and SMEs. This allowed for mutual learning between each of the project partners, but also to adapt the identified schemes to the specific national/regional context of many other agencies outside the consortium and to improve the application of their evaluation culture/practice. The main output of the project was the so-called Design Option Paper (DOP) on impact assessment. The innovation methodology developed during the project was disseminated through many business support networks for subsequent use by innovation agencies in Europe. The project partners were Moravian-Silesian Innovation Centre Ostrava (MSIC) CZ, Steinbeis 2i GmbH (S2i) DE and Fundacion para el conocimiento Madrid (Madrid) ES. The role of the SU SBA was to conduct desk research and to facilitate workshops.

During the period 2021-2022 the project “Mapping of activities and associated personnel capacities within the framework of support for kindergartens, primary and secondary schools at the level of individual regions” within the project TACR call Beta 2. The aim of the project was mapping availability, types of activities and allocated capacities within the activities of the regions of the Czech Republic, regional educational centers, pedagogical or other faculties, the Czech School Inspectorate, the National the Pedagogical Institute of the Czech Republic or other actors in supporting nursery, primary and secondary schools at the regional level. A comparative study between regions was created, which showed what type of support and advice are provided by individual regions and other relevant entities with the aim of mapping the largest possible number of provided services and support, the availability of which school principals and teachers are informed about. The research verified how the activities of the regions support or can support the goals of the education policy of the Czech Republic. The sub-goals were: 1. To obtain data that will be usable by the Ministry of Education, Culture and Sports during the preparation of the analytical part of the Long-Term Plan of the Czech Republic 2023-2027 and the regions in their Long-Term

Plans in support of kindergartens, primary schools and upper secondary schools. 2. To obtain knowledge that can be used for the support activities of the middle link of support in the territory of the regions and the activities of the upcoming IPs Curriculum project at the level of the regions. 3. To evaluate the content of selected performance reports of the Ministry of Education and Culture in this area and obtain recommendations on how to revise their content.

During the period 2021-2024 the project within Czech Science Foundation (GAČR) "Supporting Decision Processes with Pairwise Comparisons and Data Mining" was investigated at SU SBU. The project developed both classical statistical, and modern computer science techniques to support the data analysis and knowledge discovery from data. Data mining methods are powerful in dealing with large quantities of data, but on the other hand they are difficult to master by users to facilitate decision support. Pairwise comparisons methods enable to incorporate human evaluation of subjective priorities. The project proposed a new approach to integration of decision support system with data mining and new pairwise comparisons method. By doing this the researchers investigated the role of data mining to facilitate decision support together with pairwise comparisons methods, in particular in decision support systems. The researchers continued their previous research focused on pairwise comparisons methods and data mining. A suitable combination of methods was both novel and promising. New results could originate with potential application areas both in traditional areas as decision making, economics, finance, sociology and psychology, as well as modern areas: robotics, autonomous systems.

Several project of contract researches were investigated at SU SBA. For instance, Creation of Municipal Strategic Plans (Example in Table 3.3.2). Strategic development plans are key tools for the long-term and sustainable management of municipalities, cities, or organizations. They help define the direction in which the entity will move and set specific goals and action steps to achieve them. These plans include an analysis of current conditions, identification of strengths and weaknesses, opportunities and threats, as well as the actual implementation plan. Interdisciplinary cooperation between the Institute of Interdisciplinary Research, departments of Economics and Public Administration, Business Economics and Management, and the Department of Tourism and Leisure Activities is crucial for ensuring the expertise and quality of the created plan. Between 2019 and 2023, new strategic plans were implemented for the municipalities of Bravantice and Střítež, as well as updates to the strategic plans for the municipalities of Velká Polom and Petrovice u Karviné, and ongoing updates to the strategic plans of Bravantice and Střítež.

The project Moravian-Silesian Tourism, Ltd. - Analysis of Czech-Polish Tourism Attractions in the Moravian-Silesian Region and the Silesian Voivodeship focused on the analysis of tourism attractions and examined the possibilities of cooperation between the Czech Republic and Poland. The contracted research, primarily carried out by the Department of Tourism and Leisure Activities, allowed for the identification of potential tourist areas and also assessed the optimal use of historical, cultural, and natural resources to ensure economic benefits for both regions.

The project in cooperation with the Statutory City of Opava - Implementation of Activities to Support Entrepreneurship and Business in the City of Opava included an analysis of the business environment in Opava, with the aim of creating activities to support entrepreneurship and business. The activities focused on proposing specific measures and actions to stimulate the development of small and medium-sized enterprises. As part of this research, joint networking meetings for start-up entrepreneurs and action community groups in Opava were organized, as well as workshops focused on supporting entrepreneurship and a survey of the business environment of SMEs (small and medium-sized enterprises) in Opava and its surrounding area.

Another contracted research project with CZ Testing Institute, Ltd. called Competitor Analysis with the Competitor Value Curve focused on analyzing competition in a selected industry and evaluating competitiveness using the value curve. The goal was not only to understand the current market environment but also to identify areas where the company could increase its competitiveness. This research also emphasized the company's entry into foreign markets, which was essential for understanding potential competition in the international context.

Another contracted research project with Ing. et Ing. Adam Liška, MBA called Market and Marketing Analysis and Creation of Brand Identity involved conducting a detailed market and marketing analysis followed by the creation of brand identity for the client. This activity was crucial for the development of a business idea and its potential subsequent implementation in the market. A significant aspect of this research was the involvement of students in master's and doctoral programs, who participated in preparing the analysis and creating the brand identity. This approach not only supported their professional development but also expanded their competencies in market analysis, marketing strategy, and the application of theoretical knowledge into practice.

Table 3.3.1 Projects supported by public funds

| In the role of beneficiary | | | | | | |
|---|---|---|---|---|---|---|
| Provider[25] | Project name | Support (in thousands CZK/EUR)[26] | | | | |
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| Czech Science Foundation (GAČR) | Supporting decision processes with pairwise comparisons and data mining | | | 670/26 430 | 955/37 673 | 955/37 673 |
| Technology Agency of the Czech Republic (TAČR) | Mapping of activities and associated personnel capacities within the framework of support for kindergartens, primary and secondary schools at the level of individual regions | | | | | 2003/79 013 |
| Technology Agency of the Czech Republic (TAČR) | Resilience of Smart Cities and Villages of the Moravian-Silesian Region | | | | | 702/27 692 |

[25] If the provider is from abroad, please indicate the provider's country of origin in brackets. For the determination of the country of origin of the provider, the place of residence of the provider is decisive.
[26] Indicate the total amount expressed in thousands of CZK and the conversion of the total amount into Euro.

| | | | | | | |
|---|---|---|---|---|---|---|
| Total | | **0** | **0** | **670/26 430** | **955/37 673** | **3 660/144 379** |
| In the role of another participant | | | | | | |
| Provider[27] | Project name | Support (in thousands CZK/EUR) | | | | |
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| Czech Science Foundation (GAČR) | Non-standard optimization and decision-making methods in manage-ment processes | 608/23 984 | 608/23 984 | | | |
| Technology Agency of the Czech Republic (TAČR) | Assessment of the impact of the system changes in an university education since 2016 | | | 630/25 000 | 495/19 526 | |
| Technology Agency of the Czech Republic (TAČR) | Second career entrepreneurship – from corporate to unicorn | | | | | 187/7 377 |
| Total | | **608/23 984** | **608/23 984** | **630/25 000** | **495/19 526** | **187/7 377** |

Table 3.3.2 - Contract research activities

| Client[28] | Activity name | Revenue (in thousands CZK/EUR) | | | | |
|---|---|---|---|---|---|---|
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| Municipality of Bravantice | Creation of the Strategic Plan for the Municipality of Bravantice | | 30/1183 | | | |
| Moravian-Silesian Tourism, s.r.o. | Analysis of Czech-Polish Tourism Attractions in the Moravian-Silesian Region and the Katowice Voivodeship | | | 28/1105 | | |
| CZ Testing Institute, s.r.o. | Competitor Analysis with the Competitor Value Curve | | | | 19/730 | |
| Statutory City of Ostrava | Moravian-Silesian Online MICE Tour - Audiovisual Creation | | | | 46/1 799 | |
| Municipality of Střítež | Creation of the Strategic Plan for the Municipality of Střítež until 2029 | | | | 45/1 775 | |

[27] Ibid.

[28] If the client is from abroad, indicate in brackets the country of origin of the client.

| | | | | | | |
|---|---|---|---|---|---|---|
| Enotep, a.s. | Feasibility Study for the Chuchelná Project | | | | 36/1 432 | |
| Statutory City of Karviná | Conducting Public Opinion Survey | | | | 162/6 391 | |
| Statutory City of Opava | Implementation of Activities to Support Entrepreneurship and Business in the City of Opava | | | | | 100/3 944 |
| ISSM Gastro a Hotel Gong, s.r.o. | Customer Satisfaction and Product Change Proposal | | | | | 25/9 860 |
| Ing. et Ing. Adam Liška, MBA | Market and Marketing Analysis and Creation of Brand Identity | | | | | 48/1 874 |
| Total | | **30/1 183** | **28/1 105** | **109/4 304** | **198/7 822** | **173/6 805** |

Note: List and describe contract research activities with a revenue in a given calendar year, regardless of the amount of financial revenue.

### 3.4 Research results with existing or prospective impact on society

The evaluated unit shall briefly comment on a maximum of 10 (considered most significant by the evaluated unit) research results already applied or realistically heading towards application during the period of 2019–2023, based on the overview annex table 3.4.1 (it is recommended to indicate results with a link to projects listed in indicator 3.3). The evaluated unit must demonstrate in its description that the research results have led or will soon lead to positive impacts[29], on society (e.g. description of how the results are used by various users, the range of persons/institutions for which the result is relevant, measurable economic impacts, etc.). The evaluated entity shall indicate in its commentary whether the gender dimension is considered in these results and discuss the impacts of the results regarding sustainability.

*Maximum range 300 words/result.*

**Self-assessment:**

The implementation of strategic plans for the municipalities of Bravantice (2019) and Střítež (2021), as well as the implementation of updates to the strategic plans for Velká Polom and Petrovice u Karviné, provided these municipalities with tools for effective and long-term development, considering the needs of local residents. These plans serve as specific directions for the development of infrastructure, education, social services, and ensuring a high quality of life. The municipalities gained systematic and strategic approaches to management, leading to better allocation of public resources and stability in development.

As part of managing the Financial Health of Municipalities MSK web application (2020-2023), an application was provided to municipalities in the Moravian-Silesian Region to monitor their financial health. The web application primarily provides information on the current state of municipal finances and alerts to potential problem areas, enabling municipalities to react promptly to potential financial issues and ensure responsible financial management. Overall, all these activities contribute to responsible management of public finances, long-term sustainability of implemented projects, and improvement of the quality of life in the respective regions.

[29] See Terms definition.

As part of the research activities, the Interreg V-A CZ-PL project was also implemented with the aim of increasing the availability of cross-border information in the fields of education, healthcare, and public life in the Euroregion Cieszyn Silesia, not only for crisis periods. The key change brought about by the project implementation is the creation of an information platform that will provide free access to important information for everyone in Euroregion.

The licensing agreement with TEMPO, a large commercial company, was part of a rebranding effort and allowed the use of a professionally designed logo and logo manual, which established rules for their use across various communication channels and marketing materials.

In addition to research activities, as part of fulfilling the third role of the university at Business Gate, the joint center of SU SBA and the city of Karviná, focused on supporting entrepreneurship and business, workshops for students and the public are held. These workshops provide opportunities for the exchange of experiences and knowledge among students, industry professionals, representatives of regional authorities, and policymakers. The annual Entrepreneurship Week is also held, during which experts and representatives of key institutions come to discuss with SU SBA students, as well as high school students. Discussions on current topics in the context of entrepreneurship or business contribute to creating more balanced and sustainable projects.

Other non-publication results with existing impact on society include:

- "Velvet Revolver Ostrava" or FaceBook of the project financed by the CZ Ministry of Culture, participation of students among approx. 25 high schools + attending three Art Schools; this project focused on liberty and its meaning in the modern world; Tomáš Heryán, Ing. Ph.D., project head
- Strategic Plan of the Municipality of Dolní Životice, Ing. Tomáš Pražák, Ph.D, doc. Ing. Pavlína Pellešová, Ph.D., Ing. Patrik Kajzar, Ph.D., Mgr. Klarą Václavínková, Dr. Ing. Ingrid Majerová and Ing. Karin Gajdová, team members.
- Service to the public/government: member of the Finance Committee of the Moravian-Silesian Region, Vice-Chairman of the Planning Commission of the Council of the Moravian-Silesian Region, member of the Legislative Commission of the Council of the Moravian-Silesian Region, Councillor of the Municipality of Ludgeřovice, member of the Finance Committee of the Municipality of Ludgeřovice. Ing. Karin Gajdová, Ph.D.
- The project EUREGIO-INFO CZ-PL-INTERREG V-A (2021-2023) was aimed at increasing the availability of cross-border information from the areas of economy, education, healthcare and public life in the Euroregion Cieszyn Silesia. Information platforms with free access to information on cross-border statistics in the ER TS-ŚC have been created (Team members: Ing. Tomáš Pražák, Ph.D., Ing. Irena Szarowská, Ph.D., MPA, doc. Ing. Pavlína Pellešová, Ph.D., Ing. Patrik Kajzar, Ph.D., Dr. Ing. Ingrid Majerová, doc. Ing. Marian Lebiedzik, Ph.D., Ing. Karin Gajdová, Ph.D. and Ing. Tereza Pražáková.
- Night of Scientists 2022 - Mgr. Ivona Buryová, Ph.D. Self-knowledge in psychology - public lecture.
- Night of Scientists 2023 - Mgr. Ivona Buryová, Ph.D. Secrets of the human mind - lecture for the public.

Table 3.4.1 - Overview of research results in the period under evaluation

| Type of result[30] | Year of application | Name |
|---|---|---|
| Implementation of Strategic Plan for the Municipality | 2019 | Creation of the Strategic Plan for the Municipality of Bravantice |
| Implementation of Strategic Plan for the Municipality | 2021 | Creation of the Strategic Plan for the Municipality of Střítež until 2029 |
| Sold License | 2022 | Licensing Agreement with Tempo, – Logo and Logo Manual |
| Service of the Web Application for the Moravian-Silesian Region | 2020-2023 | Service of the Web Application for the Financial Health of Municipalities MSK (grant from the Moravian-Silesian Region) |
| Interreg V-A CZ-PL | 2021-2023 | EUREGIO-INFO |
| Publication (D) | 2021 | DUHÁČEK ŠEBESTOVÁ, J., ŠPERKA, R., KLEPEK, M., 2021. Migration and Integration at School Level: A Czech Preliminary Study Paper. In: Proceedings of International Conference Economic and Societal Challenges of the European Economy (Covid and Post-Covid Period). Karviná: Silesian University, pp. 63-74. ISBN 978-80-7510-488-5. |
| Publication (Jost) | 2023 | BAUEROVÁ, R. and KOPŘIVOVÁ, V., 2023. Preventing Cyberbullying: What Is the Parental Role in this Issue. Acta academica karviniensia, 23(2), 18-35. ISSN 2533-7610. doi: 10.25142/aak.2023.012. |

Note 1: Please list and describe the results already applied in practice or heading towards application in practice with existing or prospective impact on the society (e.g. domestic or foreign patents, sold licenses, spin-offs, prototypes, varieties and breeds, methodologies, significant analyses, surveys, expert outputs for policymaking or other forms of non-publication outputs, etc.). Indirect results of research, development and creative activities with documented societal impact, e.g. expert activities, services to the public/government/scientific community, may also be reported.

## TRANSFER OF RESULTS INTO PRACTICE

### 3.5 Transfer of results into practice

The evaluated unit shall briefly describe its system for transferring results into practice. It shall also indicate up to five of the most typical users of its results, whether in the university environment or in the non-university application/corporate sphere, detailing how it collaborates with them and how it seeks out new users (using a maximum of five specific examples).

It will also indicate whether and how it commercialises R&D&I results (e.g. selling licences, setting up start-up or spin-off companies, etc.)[31], providing brief description of the commercialisation methods used. The effectiveness of the transfer of results and the commercialisation of R&D&I results will be described using a selection of results (max. five) listed in annex table (Table 3.4.1).[32]

Additionally, the evaluated unit shall briefly comment on the funds received during the period of 2019–2023 from non-public, non-grant sources (e.g. licences sold, spin-off revenues, donations, etc.). A full summary shall be provided in annex table (Table 3.5.1).

*Maximum 500 words plus 200 words for each provided example of finding a new user of results and commercialization.*

[30] Specify the specific type of result. Add rows as needed.
[31] In the case of military HEIs, their specific position is taken into account when evaluating the commercialisation/evaluation of R&D&I results.
[32] If the commercialisation of R&D&I results is carried out in this way.

**Self-assessment:**

SU SBA has established a structured system for transferring research results into practice. The Institute for Interdisciplinary Research plays a key role in facilitating applied research and collaboration with external partners. Institute coordinates knowledge transfer and connects experts from various fields. It supports innovative approaches to problem-solving and the effective utilization of knowledge. It actively establishes and strengthens partnerships with academic institutions, businesses, and public administration. In the field of intellectual property, Institute ensures that innovations and research results are properly protected and efficiently utilized. It provides consultancy on research, copyrights, and commercialization. Additionally, Institute offers administrative support for the project—coordinating activities, managing documentation, and reporting. This allows research teams to fully focus on their expertise in knowledge transfer and innovation.

Intellectual property management is an essential part of knowledge transfer and requires clearly defined processes and contractual agreements. Institute follows international standards and legal regulations to ensure the proper protection and management of intellectual property arising throughout the project. It carefully documents all research processes and results, systematically registers intellectual property, and manages it through work-for-hire contracts, licensing, or other forms of protection. Protecting intellectual property requires a well-thought-out approach to ensure that all parties have clarity regarding their rights and obligations. When members of a multidisciplinary team are engaged in contractual research, the institute establishes agreements that precisely define the scope and conditions for utilizing their contributions. For employees of the organization, these conditions are also included in their employment contracts with intellectual property clauses.

As knowledge transfer moves into practice—whether through direct sales or partnerships with external organizations—a carefully prepared contract or purchase order plays a key role. These documents clearly specify what knowledge and technologies are being transferred, how they will be protected, and what conditions apply to their further use. The contract approval process is standardized, involving step-by-step approvals from initial discussions to the final signature. The institute's legal team ensures that all contractual terms comply with current legal regulations and the organization's internal policies. Financial settlement for knowledge transfer includes predefined financial terms or licensing fees that correspond to the nature and scope of intellectual property use. These terms reflect the value of the transferred assets and ensure fair revenue distribution among all involved parties.

A specific example of commercialization is the licensing agreement with TEMPO, a large commercial company, which was part of a rebranding effort and allowed the use of a professionally designed logo and logo manual, establishing rules for their use across various communication channels and marketing materials.

Moreover, SU SBA maintains continuous cooperation with business partners, ensuring that research and education remain relevant to practical needs. A key initiative in this area is Business Gate, where students work on real business challenges provided by companies. This hands-on approach strengthens their problem-solving skills and enhances direct connections between academia and industry.

Additionally, within the scope of educational activities, students are actively encouraged to develop entrepreneurial skills and establish start-ups. The university provides support through mentoring or networking opportunities to facilitate student-led business ventures.

Table 3.5.1 - Summary of non-public revenues received during the period under evaluation

| Type of revenue | Revenue (in thousands CZK/EUR) | | | | |
|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 |
| The licensing agreement with Tempo, obchodní družstvo | | | | 29/1144 | |
| | | | | | |
| | | | | | |
| Total | | | | 29/1144 | |

Note: Enter funds raised for R&D&I from non-public sources besides grants or contract research (e.g. licences sold, spin-off company revenues, donations, etc.) in the calendar year.

## POPULARIZATION OF VAVAI

### 3.6 The most important activities in the field of popularization of R&D&I and communication with the public

The evaluated unit shall briefly describe its main activities related to the popularisation of R&D&I and communication with the public (e.g. popularisation lectures, citizen science initiatives, etc.) during the period of 2019–2023 and provide up to 10 examples that it considers the most significant.

*Maximum 500 words plus 200 words for each example given.*

**Self-assessment:**

As part of its communication with the public, workshops on developmental topics in the areas of marketing, entrepreneurship, and modern technologies are regularly held at the Business Gate building. An example of such a workshop is the interactive lecture on cybersecurity and online threats, which took place in 2023 with experts from the National Cyber and Information Security Agency. This lecture provided participants with important information on current online threats and practical tips for protecting against them. To ensure regular communication of Business Gate's activities, popular science articles are sent annually to the Polar newsletter, contributing to the wider public's awareness of the center's ongoing initiatives and activities.

The academics regularly appear in the media, where the research results are also popularised in these discussions. For example, they are guest of the Czech Television, Polar regional television or other media where comment current economic problems in news.

The following are important activities in the field of popularisation of science and research:

- Daniel Stavárek, prof. Ing. Ph.D., (2019) Financial literacy competition in cooperation with the Czech National Bank and the Karviná City Council for high school students on the topic: "100 years of the Czech crown: how many years the crown still has to live and what will they be like". Essays.
- Tomáš Heryán, Ing. Ph.D. (2019 + 2022) Colours of Ostrava, MeltingPot stage of Silesian University Opava, Financial Literacy Quiz
- Daniel Stavárek, prof. Ing. Ph.D., (2020) Financial literacy competition in cooperation with the Czech National Bank and the Karviná City Council for high school students on the topic: "Will I still use cash in retirement?" Essays.

- Daniel Stavárek, prof. Ing. Ph.D., (2021) Financial literacy competition in cooperation with the Czech National Bank and the Karviná City Council for high school students on the topic: "How can households prepare financially for a crisis?" Essays.
- Ilja Skaunic, Ing. Ph.D. MBA; Jana Šimáková, Ing. Ph.D. (2021) Researchers' Night: Time. The Evolution of Money in the Czech Territories Over Time - Lecture, Exhibition.
- Ilja Skaunic, Ing. Ph.D. MBA; Jana Šimáková, Ing. Ph.D. (2022) Researchers' Night: With all the senses. How to Know the Right One? Banknotes with All our Senses - Lecture, exhibition.
- Daniel Stavárek, prof. Ing. Ph.D., (2022) Financial literacy competition in cooperation with the Czech National Bank and the Karviná City Council for high school students on the topic: "What will we pay with in 30 years?" Essays.
- Miroslava Kostková Ing. Ph.D. (2022 and 2023) Researchers' Night, exhibition. Trends in healthy nutrition, exhibition.
- Klára Václavínková (2022 and 2023) Researchers' Night, exhibition. Trends in healthy nutrition, exhibition.
- Veronika Kopřivová, Ing. Ph.D. (2023) Researchers' Night, lecture for public, What is behind the success of well-known brands?
- Veronika Kopřivová, Ing. Ph.D. (2023) Czech Academy of Sciences, video lecture for public, Do you want to buy a pen? Cognitive biases certainly won't make the process any easier.
- Ilja Skaunic, Ing. Ph.D. MBA; Jana Šimáková, Ing. Ph.D. (2023) Researchers' Night: Mystery. Secrets of Money, or How Not to Lose Money - Lecture, exhibition.
- Radka Bauerová, Ing. Ph.D. (2023) Researchers' Night, lecture for public, What is behind the success of well-known brands? How eye-tracking reveals the secrets of successful communication.
- Tomáš Heryán, Ing. Ph.D. (2023) Colours of Ostrava, MeltingPot stage of Silesian University Opava, Investments & Healthy Aging in the Czech Republic
- Daniel Stavárek, prof. Ing. Ph.D., (2023) Financial literacy competition in cooperation with the Czech National Bank and the Karviná City Council for high school students on the topic: "Cryptocurrencies - a serious payment instrument or the most fun way to earn money?" Essays.

A series of articles presenting in a popular form the results of research carried out at the School of Business Administration. The articles are intended mainly for professional media and journalists as a basis and theme for their work: https://www.slu.cz/opf/cz/mediapop

## IMPLEMENTATION OF RECOMMENDATIONS

**3.7 Implementation of the recommendations in Module 3**

The evaluated unit will briefly describe how it has implemented the recommendations for Module 3 from the previous evaluation period, if applicable.

*Maximum 1000 words.*

**Self-assessment:**

In evaluation in the year 2020, the commission made several recommendations to the SU SBA. In the first area, in the previous period, SBA had not any applied research results with an economic

impact. During the last period, the SBA focused also on applied research and four applied research TAČR were solved and SU SBA applied several project applications during 2019-2023.

In addition, recommendation was to focus on publication of the research results, therefore, SU SBA focused on publication the results of research in high quality journals. Moreover, SU SBA continued to expand Business Gate activities and focused on helping students develop their business project. In addition, in 2023 SBA has an accredited study bachelor programme Innovative Entrepreneurship, which emphasizes student entrepreneurial development, teamwork and project work. The students start their own businesses during the first year of their studies and regularly report on their outcomes. Team Academy principles are followed in this study programme.

Next recommendation was that the unit may try to generate more revenue from non-public sources form research work. The SU SBA continues to focus on the development of contract research. As part of the recommendation, the unit has significant interactions with non-academic applications; however, it should try to work on technology transfer and intellectual property protection. Attention is also paid to the popularisation of research and knowledge transfer. A number of trainings on intellectual property and technology transfer have been conducted under the HR Award project. The preparation of the University-wide Institute for Technology and Knowledge Transfer has been initiated, where the activities and experience of the Institute of Interdisciplinary Research.

In overall, the committee stated that there is still a room for improvement, which could start with an increase in international and national collaborations. The implementation of virtual seminars, for instance, may help in this direction. The unit members may try to participate more in-home and foreign professional societies relevant to R&D&I field. It would give more ambition to the SU SBA's projects. A summer school was held in 2022, and it is planned to continue organising this event in the next period, with academics also participating in a number of training courses and seminars. Within STARS EU partnership there is now greater opportunity for international collaboration as well as joint project submissions.

## A LIST OF SUPPORTING DOCUMENTS/LINKS FOR MODULE 3

| Document name | No. criteria | Location (link in HTML) |
|---|---|---|
| [1] Organizational structure | 3.1 | https://www.slu.cz/opf/en/organizationalstructure |
| [2] Recognition by the research community - Conferences, invited lectures and journals 2019-2023 | 3.2 | https://www.slu.cz/opf/cz/file/cul/fe41fda2-b350-4658-a79c-3bcc2f2960ff?backlink=ggbo2 |
| [3] Recognition by the research community - Notable publication activities 2019–2023 | 3.2 | https://www.slu.cz/opf/cz/file/cul/92446aeb-ab63-4332-9c1c-278bfe746d56?backlink=popp0 |
| [4] Research project | 3.3 | https://www.slu.cz/opf/cz/file/cul/401c2a06-e215-45d1-9e61-d6f7295581a3?backlink=popp0 |

# SELF-EVALUATION REPORT FOR MODULE 3

## THE NAME OF THE UNIT BEING EVALUATED: Faculty of Public Policies in Opava

## FORD: 5 - Social sciences

### SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

**3.1 Introductory information about the unit under evaluation**

The evaluated unit will describe its mission and vision and provide a general self-reflection of the societal contribution of R&D&I, along with its long-term goals in the fields it develops. The distribution of research activities by type of research will also be commented on.[1] The evaluated unit will describe its organisational structure and size (staffing, number of students, number of study programmes implemented, etc.) based on the data provided in annex tables 3.1.1 to 3.1.6.

*Maximum 1000 words.*

This is a non-rated indicator that serves as an introduction to the evaluated unit, providing context for data in indicators 3.2-3.7.

**Self-assessment:**

The faculty was established with the aim of connecting the academic environment with practice, delivering useful and applicable knowledge, and increasing qualification levels within the region. Its mission is built on three pillars: quality education, applied research, and collaboration with practice.

The faculty's vision is to become an institution that effectively links science with real life. A key objective is for research activities to have a practical impact, particularly in the fields of healthcare, public administration, social services, and non-teaching pedagogy. The faculty focuses on social inclusion and the risks of exclusion, the quality of public administration, intergenerational coexistence, education, health and social issues, and a variety of other topics.

The research activities of the faculty are closely connected to practice and are carried out in cooperation with organizations and institutions in the fields of education, public administration, social work, and healthcare (in non-medical professions). This interconnection enables the smooth transfer of knowledge and reciprocal feedback. The faculty operates in regions with high unemployment and a shortage of qualified professionals in key areas, particularly in the Ostrava and Karviná regions, which have been severely affected by the economic and social consequences of the industrial transformation and the decline of mining.

Another area where the faculty is actively involved is the Krnov and Jeseník regions, which include socially excluded localities that have arisen, among other reasons, due to post-war population transfers and subsequent resettlement by unintegrated inhabitants. This brings specific challenges in the fields of education, social work, and healthcare. The faculty's long-term objective is to

[1] Basic, applied, contract, artistic research (see Definition of Terms in Methodology HEI2025+).

improve the quality of life in the region by supporting key actors in social services, healthcare, and education.

During the reporting period, the faculty comprised four academic departments and offered study programs in both full-time and part-time modes. The number of accredited programs increased from 9 to 17 (from 5 to 12 bachelor's programs, from 3 to 4 master's programs, while the number of doctoral programs remained at one). In line with the strategic goals of the faculty, the Institute of Central European Studies was dissolved, and a new Institute of Special Education was established.

The number of academic staff increased from 37 to 46, with over 80 experts from the application sector involved. The number of students remained stable, with a slight increase from 1,260 to 1,273.

For the future, the faculty plans to:

- expand its portfolio of study programs,
- intensify research cooperation with the application sector and international partners,
- support lifelong learning as a tool for increasing qualifications in accordance with labor market needs,
- develop the university's third role, i.e., direct support for regional development and strengthening the faculty's position as an integral part of Silesian University.

This approach will have a positive impact on the overall perception of the faculty and the university in both academic and professional contexts.

Table 3.1.1 - Staffing per FTE[2]

| Academic/ Professional position | Total / Of which women | | | | | |
|---|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 | Total |
| Professor | 4,6/0,30 | 4,72/0,42 | 4,3/0,30 | 4,2/0,20 | 4/ 0 | 4,72/0,42 |
| Associate Professor | 8,68/4,11 | 10,38/5,72 | 7,86/5,47 | 7,07/5,19 | 7,72/5,38 | 10,38/5,72 |
| Assistant Professor | 18,07/10,93 | 20,28/12,14 | 22,58/13,34 | 25,08/15,19 | 22,84/15,37 | 25,08/15,37 |
| Assistant | 2,70/1,7 | 3,76/2,76 | 3,65/3,65 | 3,71/3,71 | 4,97 / 4,64 | 4,97/4,64 |
| R&D Personnel[3] | 0 | 0 | 0 | 0 | 0 | 0 |
| Researchers in other categories[4] | 0 | 0 | 0 | 0 | 0 | 0 |
| Technical and economic | 12/11 | 12/11 | 12/11 | 13/12 | 13/12 | 13/12 |

[2] The average number of hours worked is calculated as the ratio of the total number of hours actually worked during the reference period, from 1 January to 31 December, by all staff (including agreement on work activity, excluding agreement on work performance) to the total annual working time pool per full-time employee. The full- time status of the worker in the evaluated unit is always reported. If an employee holds more than one type of full-time job within the evaluated unit, the total sum of the two shall be reported.

[3] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).

[4] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).

| | | | | | | |
|---|---|---|---|---|---|---|
| staff[5] | | | | | | |
| Scientific, research and development staff involved in teaching activities | 33,52/16,58 | 39,14/22,07 | 38,39/22,76 | 40,06/24,29 | 39,53/25,39 | 40,06/35,39 |
| Early career researchers[6] | 7/3 | 8/4 | 9/4 | 11/5 | 11/5 | 11/5 |
| Total[7] | 45,52/28,04 | 51,14/33,07 | 50,39/33,76 | 53,06/36,29 | 52,53/37,39 | |

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D personnel, researchers in other categories and technical and economic staff are mutually exclusive, i.e. one staff member is reported under one category only. Scientific, research and development staff involved in teaching activities, as well as early career researchers are reported collectively for all the above-mentioned categories.

### 3.1.2 Age structure of R&D&I personnel of the evaluated unit and their structure by job title and gender in the year 2019 (numbers of physical employees and personnel)[8]

| Academic/ professional position | Under 29 years | | 30-39 years old | | 40-49 years old | | 50-59 years old | | 60-69 years old | | 70 years and older | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women |
| Professor | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 1 | 3 | 0 |
| Associate Professor | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 1 | 7 | 4 | 1 | 0 |
| Assistant Professor | 0 | 0 | 9 | 5 | 7 | 4 | 3 | 2 | 6 | 4 | 1 | 1 |
| Assistant | 0 | 0 | 2 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| R&D Personnel[9] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Researchers in other categories[10] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Technical and economic staff[11] | 0 | 0 | 5 | 4 | 3 | 3 | 2 | 2 | 0 | 0 | 0 | 0 |
| Scientific, research and development staff involved in teaching activities | 0 | 0 | 12 | 6 | 12 | 6 | 5 | 3 | 15 | 9 | 5 | 1 |
| Early career researcher[12] | 0 | 0 | 1 | 1 | 0 | 0 | 4 | 0 | 2 | 2 | 0 | 0 |

[5] Who participates in the management and support of R&D&I in the institution.
[6] See Definition of Terms in Methodology HEI2025+.
[7] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I personnel, researchers in other categories and technical and economic staff.
[8] The total number of employees/workers as of 31st December of the calendar year in question is to be entered, irrespective of the level of time worked, but only in an employment relationship (including agreement on work activity, excluding agreement on work performance). Other types of contractual relationships under the Civil Code that involve purchase of services are not included.
[9] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).
[10] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).
[11] Who participates in the management and support of R&D&I in the institution.
[12] See Definition of Terms in Methodology HEI2025+.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total[13] | 0 | 0 | 17 | 10 | 15 | 9 | 7 | 5 | 15 | 9 | 5 | 1 |

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D Personnel, Researchers in other categories and Technical and economic staff are mutually exclusive, i.e. one staff member is reported in only one category. The categories of scientific, research and development staff involved in teaching activities and early career researchers are reported collectively for all the above-mentioned categories.

### 3.1.3 Age structure of R&D&I personnel of the evaluated unit and their structure by job title and gender in the year 2023 (numbers of physical employees and personnel)[14]

| Academic/ professional position | Under 29 years | | 30-39 years old | | 40-49 years old | | 50-59 years old | | 60-69 years old | | 70 years and older | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women |
| Professor | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 |
| Associate Professor | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 5 | 1 | 0 |
| Assistant Professor | 0 | 0 | 10 | 5 | 9 | 6 | 7 | 4 | 6 | 4 | 1 | 1 |
| Assistant | 0 | 0 | 3 | 1 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 |
| R&D Personnel[15] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Researchers in other categories[16] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Technical and economic staff[17] | 0 | 0 | 3 | 3 | 5 | 4 | 1 | 1 | 1 | 1 | 0 | 0 |
| Scientific, research and development staff involved in teaching activities | 0 | 0 | 10 | 6 | 12 | 9 | 11 | 7 | 13 | 9 | 5 | 1 |
| Early career researcher[18] | 0 | 0 | 2 | 1 | 2 | 1 | 5 | 1 | 2 | 2 | 0 | 0 |
| Total[19] | 0 | 0 | 16 | 9 | 17 | 13 | 12 | 8 | 13 | 11 | 5 | 1 |

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D personnel, researchers in other categories and technical and economic staff are mutually exclusive, i.e. one staff member is reported under one category only. Scientific, research and development staff involved in teaching activities, as well as early career researchers are reported collectively for all the above-mentioned categories.

[13] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I Personnel, Researchers in other categories and technical and economic staff.
[14] The total number of employees/workers as at 31.12. of the calendar year in question is to be entered, irrespective of the level of time worked, but only in an employment relationship (including agreement on work activity, excluding agreement on work performance). Other types of contractual relationships under the Civil Code that involve purchase of services are not included.
[15] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).
[16] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).
[17] Who participates in the management and support of R&D&I in the institution.
[18] See Definition of Terms in Methodology HEI2025+.
[19] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I personnel, researchers in other categories and technical and economic staff.

Table 3.1.4 – Students

| Type of study | 2019 | | 2020 | | 2021 | | 2022 | | 2023 | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women |
| Undergraduate | 991 | 784 | 1114 | 890 | 1103 | 927 | 1091 | 932 | 1051 | 916 | 1114 | 932 |
| Master's[20] | 262 | 196 | 213 | 168 | 166 | 127 | 220 | 149 | 212 | 158 | 262 | 196 |
| Doctoral | 7 | 1 | 8 | 1 | 6 | 1 | 5 | 1 | 5 | 1 | 8 | 1 |
| Lifelong Learning Courses | 214 | 165 | 151 | 116 | 202 | 159 | 79 | 68 | 251 | 188 | 251 | 188 |
| Total | 1474 | 1146 | 1486 | 1175 | 1477 | 1214 | 1395 | 1150 | 1519 | 1263 | 1519 | 1263 |

Table 3.1.5 - Study programmes in Czech/English

| Type of study programme | Total[21] / Of which professional study programmes | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2019 | | 2020 | | 2021 | | 2022 | | 2023 | | Total | |
| Undergraduate | 4/0 | 3/0 | 9/0 | 8/0 | 9/0 | 9/0 | 11/0 | 11/0 | 11/0 | 11/0 | 44/0 | 42/0 |
| Master's | 2/0 | 1/0 | 2/0 | 2/0 | 2/0 | 2/0 | 2/0 | 2/0 | 3/0 | 3/0 | 11/0 | 10/0 |
| Doctoral | 1/0 | 0/0 | 1/0 | 0/0 | 1/0 | 0/0 | 1/0 | 0/0 | 1/0 | 0/0 | 5/0 | 0/0 |
| Lifelong Learning courses | 8/0 | 8/0 | 5/0 | 5/0 | 7/0 | 7/0 | 4/0 | 4/0 | 11/0 | 11/0 | 35/0 | 35/0 |
| Total | 15/0 | 12/0 | 17/0 | 15/0 | 19/0 | 18/0 | 18/0 | 17/0 | 26/0 | 25/0 | 95/0 | 87/0 |

Note: For each SP type, enter the number of SPs in Czech language in the first cell and insert the number of SPs in English language after the slash in the same cell (e.g. 15/3), enter the number of professional SPs in Czech language in the second cell and insert the number of professional SPs in English language after the slash. Follow a similar procedure in the last column of the table (Total).

3.1.6 – R&D&I capacities

| R&D&I field | FORD | FORD share [%] | Predominant type of research | Total share of industry group [%] |
|---|---|---|---|---|
| 1. Natural Sciences | 1.1 Mathematics | | Zvolte položku. | |
| | 1.2 Computer and information sciences | | Zvolte položku. | |
| | 1.3 Physical sciences | | Zvolte položku. | |
| | 1.4 Chemical sciences | | Zvolte položku. | |
| | 1.5 Earth and related environmental sciences | | Zvolte položku. | |
| | 1.6 Biological sciences | | Zvolte položku. | |
| | 1.7 Other natural sciences | | Zvolte položku. | |
| 2. Engineering and | 2.1 Civil engineering | | Zvolte položku. | |

[20] All master's degree students are listed, regardless of the length of their programme of study.

[21] The total number of study programmes for which admissions have been announced in a given academic year.

| | | | | |
|---|---|---|---|---|
| Technology | 2.2 Electrical engineering, Electronic engineering, Information engineering | | Zvolte položku. | |
| | 2.3 Mechanical engineering | | Zvolte položku. | |
| | 2.4 Chemical engineering | | Zvolte položku. | |
| | 2.5 Materials engineering | | Zvolte položku. | |
| | 2.6 Medical engineering | | Zvolte položku. | |
| | 2.7 Environmental engineering | | Zvolte položku. | |
| | 2.8 Environmental biotechnology | | Zvolte položku. | |
| | 2.9 Industrial biotechnology | | Zvolte položku. | |
| | 2.10 Nanotechnology | | Zvolte položku. | |
| | 2.11 Other engineering and technologies | | Zvolte položku. | |
| 3. Medical and Health Sciences | 3.1 Basic medicine | | Zvolte položku. | |
| | 3.2 Clinical medicine | | Zvolte položku. | |
| | 3.3 Health sciences | | Zvolte položku. | |
| 4. Agricultural and veterinary sciences | 4.1 Agriculture, Forestry, and Fisheries | | Zvolte položku. | |
| | 4.2 Animal and Dairy science | | Zvolte položku. | |
| | 4.3 Veterinary science | | Zvolte položku. | |
| | 4.4 Other agricultural sciences | | Zvolte položku. | |
| 5. Social Sciences | 5.1 Psychology and cognitive sciences | 25 | Applied Research | 50 |
| | 5.2 Economics and Business | | Zvolte položku. | |
| | 5.3 Education | 25 | Applied Research | |
| | 5.4 Sociology | | Zvolte položku. | |
| | 5.5 Law | | Zvolte položku. | |
| | 5.6 Political science | | Zvolte položku. | |
| | 5.7 Social and economic geography | | Zvolte položku. | |
| | 5.8 Media and communications | | Zvolte položku. | |
| | 5.9 Other social sciences | 50 | Applied Research | |
| 6. Humanities and the Arts | 6.1 History and Archaeology | | Zvolte položku. | 50 |
| | 6.2 Languages and Literature | | Zvolte položku. | |
| | 6.3 Philosophy, Ethics and Religion | | Zvolte položku. | |
| | 6.4 Arts (arts, history of arts, performing arts, music) | | Zvolte položku. | |
| | 6.5 Other Humanities and the Arts | | Zvolte položku. | |
| | Total | 100 % | - | 100 % |

## RECOGNITION BY THE RESEARCH COMMUNITY

### 3.2 Recognition by the research community

The evaluated unit will briefly comment on its position in the research community. It shall consider individual and other prestigious R&D&I awards, participation of its academic staff in the editorial boards of international scientific journals, elected membership in professional societies, major invited lectures given by the evaluated unit's academic staff abroad or by foreign scientists and other relevant guests at the evaluated unit. Additionally, it will address the involvement of staff in the evaluation of national or European project/programme calls over the period of 2019–2023 based on the data provided in annex tables 3.2.1 to 3.2.5 (max. 10 most relevant items). If necessary, the evaluated unit shall list any additional services to the scientific community that it considers relevant.

*Maximum 1000 words.*

**Self-assessment:**

Despite its relatively short existence (founded in 2008), the Faculty of Public Policies has established a solid position within the research community, both domestically and internationally, owing to the activities of its academic staff.

In 2019, the then Dean, Prof. PhDr. Rudolf Žáček, Dr., received the *Bene Merito* medal from the Ministry of Foreign Affairs of the Republic of Poland for "activities strengthening Poland's position in the international arena." This award recognized his long-term cooperation with Polish universities, his role in the establishment and operation of the Conference of Rectors of Silesian Universities, which brings together universities located in Czech and Polish Silesia (Wrocław, Katowice, Opole, Ostrava, Opava), where he served as chair for several years, and his contribution to the founding and functioning of the Czech-Polish Scientific Society (*Towarzystwo Naukowe Czesko-Polskie*).

Membership in editorial boards of internationally-oriented scientific journals is undoubtedly another specific form of recognition of the faculty staff's professional and scientific qualifications. At the Faculty of Public Policies, five academic staff members hold such memberships (Prof. PhDr. Rudolf Žáček, Dr.; Prof. PhDr. Dušan Janák, CSc.; Assoc. Prof. PaeDr. Vlasta Cabanová, Ph.D.; Mgr. Lukáš Vomlela, Ph.D.). Two academic staff members (Mgr. Robin Brzobohatý, Ph.D.; Mgr. Marta Kolaříková, Ph.D.) delivered invited lectures abroad during the evaluation period, specifically at institutions in the USA, Switzerland, and Italy.

Numerous lectures by foreign experts were also held at the faculty. Given the exceptionally close ties with institutions in Poland and Slovakia, most of these lecturers came from these countries.

The faculty and its staff are members of various professional organizations, both national and international.

Mgr. Andrea Preissová Krejčí, Ph.D., participated in the evaluation of program/project calls for TAČR and NAKI III.

Several faculty members are also involved in evaluation activities organized by the National Accreditation Bureau, particularly in the fields of healthcare, social work, psychology, and education.

Table 3.2.1 - Prestigious R&D&I awards granted during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Name of the award | Awarding institution |
|---|---|---|
| **Prof. PhDr. Rudolf Žáček, Dr.** | *Bene Merito* Medal | Ministry of Foreign Affairs, Poland |

Note: Provide up to 10 examples.

Table 3.2.2 Participation of academic staff of the evaluated unit in editorial boards of international scientific journals during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Name of scientific journal, ISSN |
|---|---|
| JUDr. Marie Sciskalová, Ph.D. | **Manažment podnikov** [*Management of Enterprises*], Member of the Scientific Board (Prešov, Slovakia, ISSN 1338-4101) |
| Mgr. Lukáš Vomlela, Ph.D. | • **Border and Regional Studies**, Member of the Executive Editorial Board (Opole, Poland, ISSN: 2719-6577 (Online))<br>• **Public Administration and Security Studies**, Member of the Scientific Board (Gorzów Wielkopolski, Poland, ISSN: 2543-6961, E-ISSN: 2720-3093) |
| doc. PaedDr. Vlasta Cabanová, PhD. | • **Magister**, Member of the International Editorial Board (Palacký University Olomouc, Czech Republic, ISSN: 1805-7152, e-ISSN: 2571-1342)<br>• **Biuletyn Historii Wychowania** [*Bulletin of the History of Education*], Member of the International Editorial Board (Adam Mickiewicz University in Poznań, Poland, ISSN: 1233-2224, ISSN (Online): 1233-2224) |
| Prof. PhDr. Rudolf Žáček, Dr. | • **Prague Papers on the History of International Relations**, Member of the Editorial Board (Charles University, Prague, Czech Republic, ISSN: 1803-7356 (Print), ISSN: 2336-7105 (Online))<br>• **Studia Śląskie** [*Silesian Studies*], Member of the Editorial Board (Opole, Poland, ISSN: 0039-3355, e-ISSN: 2657-6759)<br>• **Těšínsko**, Executive Editor (ISSN: 0139-7605)<br>• **Central European Papers**, Member of the Editorial Board (Silesian University in Opava, Czech Republic, ISSN: 2336-3312 (Print), ISSN: 2336-369X (Online)) |
| Prof. PhDr. Dušan Janák, Ph.D. | • **Central European Papers**, Member of the Editorial Board (Silesian University in Opava, Czech Republic, ISSN: 2336-3312 (Print), ISSN: 2336-369X (Online))<br>• **Těšínsko**, Member of the Editorial Board (ISSN: 0139-7605) |

Note: Please provide up to 10 examples of academic staff participation in editorial boards of international scientific journals (e.g. editor, editorial board member, etc.).

Table 3.2.3 The most important invited lectures delivered by the academic staff of the evaluated unit at foreign institutions during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Invited lecture title | Name of host institution, or name of conference or event | Year |
|---|---|---|---|
| Mgr. Robin Brzobohatý, Ph.D. | Child-Inclusive Family Mediation Step-By-Step | Association of Family and Conciliation Courts, Los Angeles, USA | 2023 |
| Mgr. Marta Kolaříková, Ph.D. | Importance of pre-school education for children in social exclusion environment | 41. Annual Conference of the International School Psychology Association, Basilej | 2019 |
| Mgr. Marta Kolaříková, Ph.D. | Child with trauma - challenge of Czech schools | Catholic University of America (Summer school, Roma) | 2023 |

Note: Provide up to 10 examples.

Table 3.2.4 - The most important lectures by foreign scientists and other guests relevant to R&D&I at the evaluated unit during the evaluation period

| Name, surname and title(s) of the lecturer | Lecturer's employer at the time of the lecture | Invited lecture title | Year |
|---|---|---|---|
| doc. Mgr. Antónia Sabolová Fabianová, PhD. a doc. Ing. Mgr. Zuzana Poklembova, PhD. | Pavol Jozef Šafárik University in Košice | Self-Compassion and Mindfulness in Helping Professions, Self-Compassion as a Basis for Self-Care | 2023 |
| dr. Agnieszka Kozerska, Dr hab. Elżbieta Napora, prof. UJD | Jan Długosz University in Częstochowa | Successful Ageing as a Paradigm | 2019 |
| Dr hab. Elżbieta Napora, prof. UJD | Jan Długosz University in Częstochowa | Some Aspects of Mental Health in Adolescents. Analysis of the Results Before and After a Social Pandemic | 2021 |
| Ľubica Voľanská, Soňa Gyárfáš Lutherová | Slovak Academy of Sciences | Who is Taking Care of Whom? The Intergenerational Relationships During the COVID-19 Pandemic in Bratislava | 2021 |
| Prof. Dr. Wolfgang Beck | Harz University of Applied Sciences | Domestic Violence in Times of the Corona Crisis – Causes, Manifestations and Preventive Measures | 2021 |
| Dr hab. Elżbieta Napora, prof. UJD | Jan Długosz University in Częstochowa | Psychological Determinants of Students' School Achievements. Basic Directions of Educational Work | 2022 |
| prof. PaedDr. Darina Tarcsiová, PhD. | Comenius University Bratislava, Department of Special Education, Faculty of Education | Possibilities of Using Sign Language Communication in Special Education | 2024 |
| Mgr. Lenka Nadányi, PhD. | Comenius University Bratislava, Department of Special Education, Faculty of Education | Specifics of Educating Children with Autism Spectrum Disorder in Kindergartens in Slovakia | 2023 |
| doc. PaedDr. Terézia Harčaríková, PhD. | Comenius University Bratislava, Department of Special Education, Faculty of Education | An Individual with an Incurable Disease as a Specific Problem in Special Education – Possibilities for Research | 2023 |
| PaedDr. Dorota Smetanová, PhD. | Comenius University Bratislava, Department of Special Education, Faculty of Education | Issues of Sexual Education in Social and Educational Contexts | 2022 |

Note: Provide up to 10 examples.

Table 3.2.5 - Involvement in the evaluation of national/European research project/programme calls relevant to the R&D&I area at the unit during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Name of the research project/programme call | Name of the contracting authority/guarantor of the project/programme call | Year |
|---|---|---|---|
| Mgr. Andrea Preissová Krejčí, Ph.D. | NAKI III – Programme for the Support of Applied Research in the Field of National and Cultural Identity | Ministry of Culture of the Czech Republic | 2023-2024 |
| Mgr. Andrea Preissová Krejčí, Ph.D. | ZÉTA, ÉTA, VS SIGMA (OPO a OROPO) | 2020-2024 | 2020-2024 |

Note: Provide up to 10 examples.

## RESEARCH PROJECTS

### 3.3 Research projects

The evaluated unit shall list at most 10 (considered most significant by the evaluated unit) research projects/activities (regardless of whether they are supported by public funds or based on contract research[22]) that it has implemented or participated in during the period of 2019–2023[23]. This should be done from the full list in annex tables (Table 3.3.1-3.3.2)[24], regarding particularly the results achieved or the application potential of the projects. The unit should also describe how the research projects contributed to the mission and purpose of the evaluated unit. If the evaluated unit has been a participant in listed project, it shall indicate which other entities were involved and describe its contribution to the project. The interdisciplinary aspects of the projects will also be commented on, along with any collaboration with other units of the evaluated HEI.

*Maximum 300 words per project.*

**Self-assessment:**

Given its professional focus, the faculty concentrated its research activities primarily on applied research projects, fully aligned with the strategic objectives of both the faculty and the university, as well as the faculty's long-term vision. It succeeded in securing and successfully implementing two projects funded by the Technology Agency of the Czech Republic (TA CR), one project under the NAKI II programme (Ministry of Culture of the Czech Republic), and several smaller projects of specific research supported by the Ministry of Education, Youth and Sports of the Czech Republic (MEYS). These projects enabled greater involvement of students from master's and doctoral programmes in research activities and positively influenced the goals and content of newly developed study programmes, based on feedback gathered from the field and future employers.

The implemented projects significantly contributed to fulfilling the faculty's mission by linking academic research with practice and delivering applied and innovative solutions in the field of public administration and regional development. A complete overview of research projects and projects with a research focus (i.e., projects in which research was conducted and research outputs were generated) is provided in Annex „Overview of Research and Research-Oriented Projects" [1].

[22] For the definition of contract research for the purposes of evaluation in the HE segments, see Article 2.2.1 of the Community Framework for State Aid for Research, Development and Innovation 2014/C 198/01.

[23] Regardless of whether the projects are completed or still ongoing, provided that at least part of the project was implemented during the evaluation period.

[24] The evaluated unit shall only fill tables that are relevant to it.

**TA CR Project:** ***Attitudes of Residents of the Moravian-Silesian Region Towards the Use of the Internet of Things for the Development of Smart City Concepts***

The research focused on analysing the attitudes of residents of the Moravian-Silesian Region towards the use of modern technologies within the smart city concept and offered a multidisciplinary perspective integrating knowledge from public administration, information technology, sociology, and regional development. This enabled the provision of expert input for decision-making processes and allowed for more efficient alignment of public services with the needs of the population.

A key element was the close cooperation with practice – research results were directly implemented into practice immediately after the project's completion through the application guarantor, the Moravian-Silesian Region. The project thus contributed to the modernization of the region, which is one of the structurally affected areas of the Czech Republic. The research helped identify factors influencing the acceptance of smart technologies and their use in the context of public administration and quality of life.

The methodology combined both qualitative and quantitative approaches, enabling a comprehensive view of the issue of smart technology adoption in the region. The research questions covered a wide range of topics – from general public awareness of smart cities and the Internet of Things to ways of informing the public and identifying key supporter groups for these technologies. As a result, the project strengthened the faculty's role in research on public policy, regional development, and digital innovation, contributing to its long-term goal of linking academic knowledge with practice and ensuring its direct transfer to the public sector.

**TA CR Project:** ***The Impact of the Epidemiological Crisis on the Provision of Social and Healthcare Services in the Homes of Seniors***

The faculty has long aimed to promote an interdisciplinary approach in both research and education, and this project fulfilled that objective by combining social work, healthcare disciplines, and modern technologies. In cooperation with Caritas Opava, real-life experiences in the provision of field-based social and healthcare services to seniors during the epidemiological crisis were assessed. An important aspect was the involvement of faculty students, who gained direct practical experience in this area.

The project had a direct impact on the faculty's educational activities, as it led to the innovation of study programmes. Based on the insights of students who participated in the care of seniors, the bachelor's study programme was expanded to include a new course titled *Fundamentals of Nursing for Social Workers*. This strengthened the quality of student preparation, equipping them more effectively for their professional careers in the field of social services. The introduction of this course, approved by the National Accreditation Bureau in January 2022, aligns with the faculty's strategy to develop applicable knowledge and skills that respond to the current needs of the labour market and society.

Thus, the project fulfilled key strategic objectives of the faculty not only in the areas of applied research and innovation in education but also in the direct support of improving the quality of life of seniors in the region. The research results strengthened interdisciplinary cooperation and enhanced the position of the faculty as an institution actively engaged in addressing current societal challenges.

**Ministry of Culture CR – NAKI II Project:** ***Legal, Historical and Social Science Aspects of New and Traditional Minorities in the Czech Republic***

The faculty was a co-recipient of the project, whose principal investigator was the Faculty of Law, Charles University in Prague. Other collaborating institutions included the Faculty of Public Policies, Silesian University in Opava; the Hussite Theological Faculty of Charles University in Prague; the Institute of Contemporary History of the Czech Academy of Sciences in Prague; and the Silesian Regional Museum in Opava. The principal investigator was Prof. JUDr. Jan Kuklík, DrSc. (Faculty of Law, Charles University), and the co-investigator for the Faculty of Public Policies was Prof. PhDr. Dušan Janák, Ph.D.

The project significantly contributed to the development of interdisciplinary research at the faculty in the areas of minority issues, migration, and mechanisms of social exclusion in ethnically mixed regions. The faculty has long been oriented towards connecting scientific knowledge with real social and cultural issues in the region, and this project fulfilled that aim by integrating historical, sociological, and political science perspectives with visual documentation and exhibition activities.
The research conducted at the faculty focused on the historical development of national and religious minorities in Czech Silesia and surrounding areas from 1918 to the present. Through this project, the faculty strengthened its scientific specialization in regional topics with national relevance. It played a key role in forming an international research team composed of Czech and Polish experts, in line with its strategic goal to enhance international cooperation and interdisciplinary research.

**SGS 11/20:** ***Analysis of the Implementation of Family Rehabilitation for Children at Risk of Institutional Care – Child Protection or Increasing Trauma?*** **(2020–2021)**
Among the projects conducted within the framework of specific university research, this project contributed to the faculty's professional focus in the field of social work and child protection, thereby fulfilling its long-term vision of linking research with practical measures aimed at improving the lives of vulnerable groups. The research addressed current challenges in child protection, family policy, and work with at-risk families, aligning with the faculty's strategic orientation towards supporting applied research with a tangible impact on public policies and social services.
The project had an interdisciplinary character, involving historical, sociological, and legal analyses of child protection, and it reflected changes in approaches to family rehabilitation and their legislative implications. The research was conducted in two regions (the Moravian-Silesian Region and the Pardubice Region), where the faculty has been active over the long term, strengthening its role as a professional institution contributing to regional development.
A significant benefit was also the connection between academic research and the needs of social practice. The project enhanced the professional qualifications of the faculty's staff in the areas of social work and child protection legislation, thereby reinforcing the faculty's role as an educational institution preparing future social workers for field practice.

**SGS 13/22:** ***Informal Care in Contemporary Society – Needs and Social Contribution***
This specific university research project addressed one of the faculty's key thematic areas – the issue of social care and its sustainability in the context of demographic changes. The research focused on analysing the impacts of informal care on the lives of caregivers, their professional skills, and their needs, thereby contributing to the faculty's specialization in the field of social and healthcare services.
The project fulfilled the faculty's strategic objective of exploring current societal challenges, with the issue of informal care representing a critical topic in the context of population ageing and increasing demands on social service providers. Special attention was given to the role of local governments, the activation of seniors, and the identification of necessary changes within the social system of the Czech Republic. The research thus addressed broader issues of regional social policy and the role of public administration, corresponding with the faculty's long-term focus on public policy research and linking academic knowledge with societal needs.
The project's outputs have particular significance in the field of education, as the research results were used as methodological material for teaching at the faculty. In this way, the project reinforced the connection between research and student preparation for practice and contributed to the development of professional competencies in social work and elderly care.

**CONTRACT RESEARCH ACTIVITIES**
Through contract research commissioned by institutions from the application sector, the faculty achieves close interconnection between academic research and practical, applied solutions. Given

the faculty's focus, these institutions are primarily in the fields of public administration and regional development.
During the evaluation period, the faculty conducted two contract research projects related to public administration and public policy. One project, commissioned by the company UDIMO, involved a sociological survey in households in Opava focused on citizens' transport behaviour. The second project, for the Local Action Group Hlučínsko, focused on the evaluation of local action plans in education, resulting in a final evaluation report.

Table 3.3.1 Projects supported by public funds

| In the role of beneficiary | | | | | | |
|---|---|---|---|---|---|---|
| Provider[25] | Project name | Support (in thousands CZK/EUR)[26] | | | | |
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| Technology Agency of the Czech Republic (TA ČR) | Attitudes of the population of the Moravian-Silesian Region to on the use of the Internet of Things in order to develop the concept of Smart Cities | 546/ 21 500 | 326/ 12 900 | | | |
| Technology Agency of the Czech Republic (TA ČR) | The influence of the crisis epidemiological situation on the provision of social and health services in the households of the elderly | | 154/ 6 100 | 692/ 27 300 | 206/ 8 100 | 0/0 |
| Ministry of Education, Youth and Sports | Projects of the Internal Grant Competition of Silesian University | 30/ 1 200 | 0/0 | 0/0 | 0/0 | 0/0 |
| Ministry of Education, Youth and Sports | Specific research projects (research carried out by students) | 625/ 24 700 | 391/ 15 400 | 584/ 23 000 | 538/ 21 200 | 466/ 18 400 |
| Total | | **1 201/47 000** | **871/34 400** | **1 276/ 50 300** | **744/29 300** | **466/18 400** |
| In the role of another participant | | | | | | |
| Provider[27] | Project name | Support (in thousands CZK/EUR) | | | | |
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| Ministry of Culture | Legal, Historical and Social Science Aspects of New and Traditional Minorities in the Czech Republic | 1 013/ 40 000 | 936/ 36 900 | 1 026/ 40 500 | 0/0 | 0/0 |
| Total | | **1 013/ 40 000** | **936/ 36 900** | **1 026/ 40 500** | **0/0** | **0/0** |

[25] If the provider is from abroad, please indicate the provider's country of origin in brackets. For the determination of the country of origin of the provider, the place of residence of the provider is decisive.
[26] Indicate the total amount expressed in thousands of CZK and the conversion of the total amount into Euro.
[27] Ibid.

Table 3.3.2 - Contract research activities

| Client[28] | Activity name | Revenue (in thousands CZK/EUR) | | | | |
|---|---|---|---|---|---|---|
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| UDIMO,spol.s r.o. | *Sociological Survey in Households of the City of Opava with a Sample of 1,000 Respondents* (*Transport Behaviour*) | | | | 194/ 7 600 | |
| MAS Hlučínsko, z. s. | Local Action Plan III for the Hlučínsko Region | | | | | 250/ 9 900 |
| Total | | | | | **194/ 7 600** | **250/ 9 900** |

Note: List and describe contract research activities with a revenue in a given calendar year, regardless of the amount of financial revenue.

## 3.4 Research results with existing or prospective impact on society

The evaluated unit shall briefly comment on a maximum of 10 (considered most significant by the evaluated unit) research results already applied or realistically heading towards application during the period of 2019–2023, based on the overview annex table 3.4.1 (it is recommended to indicate results with a link to projects listed in indicator 3.3). The evaluated unit must demonstrate in its description that the research results have led or will soon lead to positive impacts[29], on society (e.g. description of how the results are used by various users, the range of persons/institutions for which the result is relevant, measurable economic impacts, etc.). The evaluated entity shall indicate in its commentary whether the gender dimension is considered in these results and discuss the impacts of the results regarding sustainability.

*Maximum range 300 words/result.*

**Self-assessment:**

Among the most significant research outputs with societal impact are primarily scholarly monographs and specialized maps developed within national and international projects. The societal impact lies mainly in the interpretation of analysed data, the description of the given problem, and recommendations for improving the current situation. Most of these outputs focus on issues related to the region in which the university operates, though some also address topics with international relevance. A complete overview of publication activity during the reporting period is provided in Annex Overview of Publication Activity [2].

**1. Scholarly Monograph: *Internet of Things and Smart Cities in a Regional Perspective***

The publication is an output of the TA CR project *Attitudes of Residents of the Moravian-Silesian Region Towards the Use of the Internet of Things for the Development of Smart City Concepts*. The monograph addresses the dynamics of development of the Smart Region of Moravian-Silesian Region during the phase of absorption of smart potential and technological development. It describes the socio-political engagement of residents with the concept of smart cities and the Internet of Things. A dominant part of the monograph analyses data from sociological research conducted among the region's inhabitants. It maps their attitudes toward the use of the Internet of

[28] If the client is from abroad, indicate in brackets the country of origin of the client.

[29] See Terms definition.

Things in building smart cities and analyses their experiences, opinions, and satisfaction with the implementation of specific elements of the smart city concept.

**2. Specialized Map with Scholarly Content: *Smart Cities Through the Eyes of the Moravian-Silesian Region***

Specialized map result TL01000015-V1 titled *Smart Cities Through the Eyes of the Moravian-Silesian Region* presents the results of original scientific research in the region and illustrates the views and perceptions of residents regarding the use of the Internet of Things in smart cities. The result is intended for both lay and professional audiences, as well as the application guarantor, and is freely available on the project website.

**3. Scholarly Monograph: *Social Services in a New Era***

The monograph is an output of the TA CR project *The Impact of the Epidemiological Crisis on the Provision of Social and Healthcare Services in the Homes of Seniors*. The authors aim to place the findings obtained during the project into the broader context of the development of social services over the past 30 years and, based on this, outline necessary changes that could enable social services to become the most dynamically developing sector of the national economy in the coming years. An evaluation of social service development shows that the Social Services Act, adopted in 2006, along with the rules for financing and subsequent organizational changes, slowed down the previously dynamic development of social services.

**4. Scholarly Monograph: *National Minorities and Migration in Czech Silesia and Northern Moravia in the 20th and 21st Centuries***

This edited volume focuses on migration processes in a specific border region from the late Austro-Hungarian era to the present day. Particular attention is paid to the course and long-term consequences of demographic changes after 1945 (e.g., the expulsion of Germans, settlement of Greek and Roma populations, migration of Slovaks). The book also describes the arrival and emancipation of new minorities during the communist and post-communist periods (Vietnamese, Ukrainians, and others). Thematic chapters focus on individual minorities in a comparative perspective.

**5. Specialized Map with Scholarly Content: *Atlas of National and Religious Minorities in the Czech Republic***

The atlas is divided into six thematic sections, with the core focus in sections 3 to 6, which depict changes in the national and religious structure of Bohemian Silesia and adjacent Northern Moravia during the 20th and 21st centuries. The individual map sheets are based primarily on census data, allowing for a consistent methodology and clearly defined long-term trends for individual nationalities, while also capturing sudden and radical changes, such as the displacement of the German population after 1945. The atlas also specifically examines the development of two nationally and religiously distinct areas of Bohemian Silesia – the Těšín and Hlučín regions. It includes an extensive theoretical section addressing both the technical preparation of the atlas and the characteristics of the researched area. The final output represents a unique achievement, comprehensively and methodologically capturing, for the first time, national and religious changes in Czech Silesia and Northern Moravia.

**6. Scholarly Monograph: *What Remains Unspoken. How to Develop a Methodology for Assisting Families***

The publication presents the results of the student grant competition project *Implementation Analysis of Family Rehabilitation for Children at Risk of Institutional Care – Protection of Childhood or Increasing Trauma*. The authors first provide a brief historical overview of child protection and childhood development. They also address paradigm shifts in the work of social workers, particularly legal changes and their impact on social workers' performance and the involvement of other social organizations in assisting families. The main part of the book is dedicated to a study conducted in two regions of the Czech Republic with social workers from municipal authorities and social organizations working with vulnerable families. The findings were further validated through a questionnaire survey. The final chapters summarize the research results and include examples of good practice. The publication is intended primarily for experts involved in developing methodologies for working with at-risk families.

**7. Scholarly Monograph: *Implementation of Snoezelen – MSE in the Czech Republic, Poland and Catalonia***

The main aim of this publication is to expand theoretical and practical knowledge of the Snoezelen concept. It presents Snoezelen as a supportive and effective tool for professionals in allied helping professions – special education, psychology, and occupational therapy. The objective is to identify similarities and differences in the use of Snoezelen and to showcase specific approaches applied in the Czech Republic, Poland, and Catalonia. The publication addresses both general readers and fills a gap in academic monographs and handbooks, targeting students and academics. It is connected to the outputs of the Erasmus+ project *Support of the Snoezelen Concept and Its Integration into University Education* (2020-1-CZ01-KA203-078267).

**8. Scholarly Monograph: *Silesia and the Middle Income Trap Problem – Czech and Polish Regional Perspectives***

The book is the result of the project *Silesia and the Problem of the Middle Income Trap – Czech and Polish Regional Perspectives*, carried out in 2020 and 2021. The opening chapter contributes to the scientific debate on the middle-income trap by addressing key questions: What conditions enable a successful transition from a middle-income to a high-income economy? How can policymakers accelerate economic growth? What measures should be taken to tackle the middle-income trap? This publication answers these questions by referencing current literature, international experiences, and the specific case of Silesia, with emphasis on its Polish and Czech regions.

**9. Scholarly Monograph: *Current Questions of Special Education: Parental Resilience and Support in Raising Children with Special Needs***

This professional publication explores aspects of educating children with special educational needs within the family and school environment. It examines parental resilience in managing developmental risks in children with disabilities and chronic illnesses, the position of siblings of children with disabilities, and the impact of family context on school performance and social integration.

The publication also evaluates the effects of distance learning on pupils' mental health, social and communication skills, and emphasizes the role of family support in preventing school failure.

**10. Scholarly Monograph: *Child Protection System – Just Think Differently?***

This monograph compares various models of child protection and explores how their strengths can contribute to the development of child protection systems. It relates to the paradigm shift proposed by Gilbert (2012) – *child focus*. The author argues that support for at-risk children can also be

traumatizing and discusses new challenges in the education of social workers, as well as dilemmas that can either reduce or deepen trauma in children. From this perspective, the strengths of individual models are explored to inspire change in approaches to child assistance, without requiring fundamental legislative reform. These changes are analysed within the *child focus* paradigm.

Table 3.4.1 - Overview of research results in the period under evaluation

| Type of result[30] | Year of application | Name |
|---|---|---|
| B / Scholarly Monograph | 2019 | Internet věcí a chytrá města v regionální perspektivě [*Internet of Things and Smart Cities in a Regional Perspective*] |
| Nmap / Specialized Map with Scholarly Content | 2019 | Chytrá města očima obyvatel Moravskoslezského kraje [*Smart Cities Through the Eyes of the Moravian-Silesian Region*] |
| B / Scholarly Monograph | 2021 | Národnostní menšiny a migrace v Českém Slezsku a na severní Moravě ve 20 a 21 století [*National Minorities and Migration in Czech Silesia and Northern Moravia in the 20th and 21st Centuries*] |
| B / Scholarly Monograph | 2021 | O ČEM SE MLČÍ, jak na metodiku pomoci rodinám [*What Remains Unspoken – How to Develop a Methodology for Assisting Families*] |
| B / Scholarly Monograph | 2021 | Silesia and the Middle Income Trap Problem. Czech and Polish Regiona Perspectives [*Silesia and the Middle Income Trap Problem – Czech and Polish Regional Perspectives*] |
| Nmap / Specialized Map with Scholarly Content | 2021 | Atlas národnostních a náboženských menšin v České republice [*Atlas of National and Religious Minorities in the Czech Republic*] |
| B / Scholarly Monograph | 2022 | Child protection system – just think differently? |
| B / Scholarly Monograph | 2022 | Sociální služby v nově době [*Social Services in a New Era*] |
| B / Scholarly Monograph | 2023 | Current Questions of Special Education: Parental Resilience and Support in Raising Children with Special Needs |
| B / Scholarly Monograph | 2023 | Implementation of Snoezelen – MSE in the Czech Republic, Poland and Catalonia |

Note 1: Please list and describe the results already applied in practice or heading towards application in practice with existing or prospective impact on the society (e.g. domestic or foreign patents, sold licenses, spin-offs, prototypes, varieties and breeds, methodologies, significant analyses, surveys, expert outputs for policymaking or other forms of non-publication outputs, etc.). Indirect results of research, development and creative activities with documented societal impact, e.g. expert activities, services to the public/government/scientific community, may also be reported.

[30] Specify the specific type of result. Add rows as needed.

## TRANSFER OF RESULTS INTO PRACTICE

### 3.5 Transfer of results into practice

The evaluated unit shall briefly describe its system for transferring results into practice. It shall also indicate up to five of the most typical users of its results, whether in the university environment or in the non-university application/corporate sphere, detailing how it collaborates with them and how it seeks out new users (using a maximum of five specific examples).

It will also indicate whether and how it commercialises R&D&I results (e.g. selling licences, setting up start-up or spin-off companies, etc.)[31], providing brief description of the commercialisation methods used. The effectiveness of the transfer of results and the commercialisation of R&D&I results will be described using a selection of results (max. five) listed in annex table (Table 3.4.1).[32]

Additionally, the evaluated unit shall briefly comment on the funds received during the period of 2019–2023 from non-public, non-grant sources (e.g. licences sold, spin-off revenues, donations, etc.). A full summary shall be provided in annex table (Table 3.5.1).

*Maximum 500 words plus 200 words for each provided example of finding a new user of results and commercialization.*

**Self-assessment:**

The transfer of research and creative activity outputs into practice and their prospective societal impacts are typically carried out by the faculty through cooperating application sector entities, particularly public administration organizations, non-governmental non-profit organizations focused on social work, healthcare institutions, the Police of the Czech Republic and the Prison Service, as well as kindergartens, primary, secondary, and special schools. In addition to publication activities (articles in national and international journals and books), the transfer of research results into practice also takes place through workshops, discussions at professional conferences, and round tables. These activities provide significant feedback on the applicability of research results and theories, and at the same time confirm their practical usefulness.

Given the prevailing nature of the faculty's research activities – mainly oriented toward the fields of teaching and non-teaching pedagogy, social work, and healthcare – the research is effectively conducted outside the commercial sphere of private enterprise. Therefore, it does not offer opportunities for commercialization of research outcomes. Results in the form of patents, licenses, or the establishment and operation of spin-off companies are essentially unrealistic in the disciplines characteristic of the faculty's focus.

This is further evidenced by the fact that users of research outputs include not only state and local government authorities but also kindergartens, primary, secondary, and special schools, as well as organizations providing social and partly healthcare services, including charitable and similar non-profit organizations, which themselves often face an acute lack of financial resources. Consequently, research results are not commercialized but are directly transferred into practice through workshops, specialized maps, exhibitions, and the involvement of application sector institutions in projects and conferences.

[31] In the case of military HEIs, their specific position is taken into account when evaluating the commercialisation/evaluation of R&D&I results.

[32] If the commercialisation of R&D&I results is carried out in this way.

Table 3.5.1 - Summary of non-public revenues received during the period under evaluation

| Type of revenue | Revenue (in thousands CZK/EUR) | | | | |
|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 |
| | | | | | |
| | | | | | |
| | | | | | |
| Total | | | | | |

Note: Enter funds raised for R&D&I from non-public sources besides grants or contract research (e.g. licences sold, spin-off company revenues, donations, etc.) in the calendar year.

## POPULARIZATION OF VAVAI

### 3.6 The most important activities in the field of popularization of R&D&I and communication with the public

The evaluated unit shall briefly describe its main activities related to the popularisation of R&D&I and communication with the public (e.g. popularisation lectures, citizen science initiatives, etc.) during the period of 2019–2023 and provide up to 10 examples that it considers the most significant.

*Maximum 500 words plus 200 words for each example given.*

**Self-assessment:**

The faculty places strategic emphasis on regional engagement and fulfilling the university's third role. In terms of science popularization and dissemination of research results, activities are primarily related to:

- conferences
- professional workshops
- round table discussions
- prevention days
- nationwide science popularization events such as the *Researchers' Night*
- the event *Modern Challenges of Humanity*
- the lecture series *Media – History and Society*, which contributes to increasing media literacy
- exhibitions, etc.

Professional conferences and workshops focus on addressing current challenges in science and research, which are also closely related to the faculty's study programmes. Examples include annually held conferences on family-related issues (*2019 Death – Part of Life*, *2021 Family Relationships During the Pandemic*, *2022 21st Century Challenges for Helping Professions*, *2023 Current Approaches to Working with Families in Crisis*), healthcare (*Challenges in Nursing and Midwifery in the 21st Century*, *Insights from Paediatric Nursing*, *Nurses' Day*, *Stomatological Conference*, etc.), and conferences directly linked to outputs of TA CR, NAKI II, and MSMT projects.
Professional exhibitions also attract public interest by presenting research results in a visual format (e.g., *People from Afar: Vietnamese and Mongolians in the Czech Lands*, *Dear Czechs, Greetings from Croatia*, *Widowhood in Old Age*, *Otherness is Normal*, *Czech-Polish Relations and the Těšín Region*, etc.).
Since 2019, students have had the opportunity each month to engage in the *Modern Challenges of Humanity* lecture series, featuring leading experts discussing diverse topics that resonate with

younger audiences. Highly attended lectures have included: *Climate and Its Broader Impact*, *Genetic Engineering of Plants: Science vs. Irrationality*, *Power, Politics and International Threats*, *The Role of New Media Today*, *The Economics of Good and Evil*, *Security Challenges for the Czech Republic*, and *DNA in Forensics*. All lectures are also made available to the wider public online.

Since 2017, the faculty has organized conferences under the series *Media, History and Society*, aimed at improving media literacy and highlighting the potential for depoliticizing and enhancing the quality of media interpretation of historical events within education. The conference is organized in close cooperation with Polish partners and is financially supported by Czech-Polish cooperation funds from the Ministry of Foreign Affairs of the Czech Republic.

Cooperation with external stakeholders is further strengthened through thematic workshops, which bring together practitioners and academic staff to exchange experience and plan future research activities. Some of the most well-received workshops in the healthcare field include: *Actively Against Breast, Cervical, and Testicular Cancer*, *Sexual Health Education and Gynaecological Prevention for Young Women with Intellectual Disabilities*, *Women's Reproductive Age and Fertility – Healthy Young Mother, Healthy and Happy Child*, *Safe Pharmacotherapy in Children*, *Sensory Assessment of Newborns and Infants*, *Drugs During Pregnancy and Their Impact on the Child*. Psychological topics have focused on the prevention of risky behaviour, e.g., *Risky Behaviour on the Internet II – New Forms of Sexting*, *Risks of Online Communication*, *The Journey to Oneself and Others Behind Bars – A Current Perspective on the Czech Prison System and the Treatment of Inmates*, *How and Through What Forms/Methods Do Seniors Want to Learn*, *Primary Prevention of RICHO in After-School Clubs*.

The faculty also contributes to science popularization through participation in regional and supra-regional events with high public attendance, such as lectures at the *Colours of Ostrava* music festival. Additionally, it regularly uses the academic supplement of the most-read regional weekly *Region Opavsko*, appears on the Moravian-Silesian regional television *TV Polar*, and faculty staff occasionally participate in Czech Television's morning programme *Good Morning* broadcast from the Ostrava studio.

## IMPLEMENTATION OF RECOMMENDATIONS

### 3.7 Implementation of the recommendations in Module 3

The evaluated unit will briefly describe how it has implemented the recommendations for Module 3 from the previous evaluation period, if applicable.

*Maximum 1000 words.*

**Self-assessment:**

Due to the faculty's professional focus on helping professions, there is limited potential to secure funding from non-public sources. During the evaluation period, the faculty responded to demand for two contract research projects: one for the company UDIMO, Ltd., involving a sociological survey of families in the Opava region, and another for MAS Hlučínsko, z. s., involving the evaluation of the MAP III projects for the Hlučínsko East (Project ID CZ.02.3.68/0.0/0.0/20_082/0022962) and Hlučínsko West (Project ID CZ.02.3.68/0.0/0.0/20_082/00022959).

**Recommendations for Sections 3.5 and 3.6:**

• The faculty fully fulfils its mission in these specific areas. However, the unit could implement a broader spectrum of projects with economic impact on society.

**Response:** In response to this recommendation, the faculty implemented TA CR projects that include sustainability-related goals and may have future economic impact – for example, by extending the period of informal home-based care and reducing the burden on residential services.

**Recommendations for Sections 3.7, 3.8, and 3.9:**

• The unit could attempt to implement research projects aimed at obtaining patents or licenses. Furthermore, it could focus on building partnerships with private companies.
**Response:** Given the nature of applied research in helping professions, it has not been possible to generate patents or licenses. However, the faculty partially fulfils this recommendation by offering accredited lifelong learning courses across various organizations and institutions, thereby enhancing the professional expertise of practitioners.

**Recommendations for Sections 3.10 and 3.11:**

• The faculty's activities appear to be focused almost exclusively on the Czech-Polish-Slovak region. It might be beneficial to expand its reach to a broader European context. Developing international exchanges would increase the faculty's visibility and open doors to transnational public institutions and NGOs with significant influence in this field.
**Response:** The faculty's primary focus on the Czech-Slovak-Polish area stems from its character as a regional public university situated in the tri-border area, and from its ability to obtain research partners and external funding through euroregional resources, Visegrad Funds, cross-border initiatives, etc.
During the evaluation period, the faculty significantly expanded its involvement in wider international projects and partnerships, as evidenced by its participation in four Erasmus+ KA2 projects and partnerships with universities outside of Poland and Slovakia in 15 other countries. Faculty staff are also engaged in activities of Silesian University within the **STARS EU** Alliance – a consortium of nine European universities for regional transformation. The alliance focuses on interregional cooperation in education and research and includes universities from France, Portugal, the Netherlands, Spain, Germany, Sweden, and Albania, alongside the Silesian University.

**Recommendation for Section 3.12:**

• The faculty fulfils its mission in disseminating knowledge to the general public. However, it could broaden the range of activities aimed at popularizing R&D&I. It would also be of interest to know how students are involved in these projects.
**Response:** Students in master's and doctoral programmes are encouraged to engage in research, both through specific university research projects and as research assistants in TA CR, NAKI II, or ministry-funded projects. Teamwork support is an added value of these activities.
During the evaluation period, the Faculty of Public Policies primarily focused on research activities aimed at extensive cooperation with organizations providing services in the Moravian-Silesian Region and neighbouring areas. This region has been severely affected by structural changes (notably the reduction and cessation of mineral extraction, and the near-total closure of heavy industry enterprises). These developments have had significant social impacts on the local population, leading to increased demand for social services, efforts to reduce unemployment, and the need for retraining, especially among younger and middle-aged working populations.
At the same time, the number and influence (particularly political) of various non-profit and NGO-type think tanks have increased, often functioning as influential entities reliant on both public and private funding, with activities focused on shaping political and economic decision-making. Given these circumstances, in order to fulfil its core mission – the education of professionals for

| |
|---|
| locally lacking professions – the faculty is no longer competitive in the area of research commercialization in fields such as social policy, social work, nursing, or educational and psychological counselling, where private sector involvement remains minimal. |

## A LIST OF SUPPORTING DOCUMENTS/LINKS FOR MODULE 3

| Document name | No. criteria | Location (link in HTML) |
|---|---|---|
| Overview of Research and Research-Oriented Projects [1]. | 3.3 | https://www.slu.cz/fvp/cz/file/cul/edd95507-d693-4c01-8d55-0a7c28bdf3d0 |
| Overview of Publication Activity [2]. | 3.4 | https://www.slu.cz/fvp/cz/file/cul/eb1f6053-23e9-44a3-959e-66526f7fe98f |

# SELF-EVALUATION REPORT FOR MODULE 3

## THE NAME OF THE UNIT BEING EVALUATED: Mathematical Institute in Opava

## FORD: 1 - Natural sciences

### SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

**3.1 Introductory information about the unit under evaluation**

The evaluated unit will describe its mission and vision and provide a general self-reflection of the societal contribution of R&D&I, along with its long-term goals in the fields it develops. The distribution of research activities by type of research will also be commented on.[1] The evaluated unit will describe its organisational structure and size (staffing, number of students, number of study programmes implemented, etc.) based on the data provided in annex tables 3.1.1 to 3.1.6.

*Maximum 1000 words.*

This is a non-rated indicator that serves as an introduction to the evaluated unit, providing context for data in indicators 3.2-3.7.

**Self-assessment:**

Since its establishment in 1999, Mathematical Institute in Opava has been an internationally recognized research institution. With about 20 full-time academic/research staff members (not counting administrative personnel), its main focus is on basic research in the areas of dynamical systems, functional analysis and complex analysis, geometry and global analysis, and ordinary and partial differential equations. For the last 20 years, more than half of its annual budget has been formed by funding allocated on the basis of research output in some way (LCDRO, the subsidy for research performed by students, the so-called “performance component” of the governmental funding for educational activity, grant/project money). Its educational activity during the evaluation period comprised 1 bachelor and 1 master study program (both called simply “Mathematics”) and 2 doctoral study programs (“Mathematical Analysis” and “Geometry and Global Analysis”), totaling to roughly 100-150 enrolled students annually.

Due to its predominant focus on basic research in pure mathematics, the institute has never seriously engaged in applied research, although some of the theoretical results possess outreach also into the applied sphere. The institute does, however, actively seek opportunities for its (bachelor and master) students to become acquainted with applied mathematics and with the typical existing needs of the companies, businesses and public institutions in the region, hence applied mathematical problems of this kind are frequently solved as subjects of bachelor/master theses in the institute.

For the personal capacity reasons explained above, the institute does not intend to enter seriously into applied research (or development and innovation) field even in future. Still, even the current focus on basic research brings undeniable social benefit in the form of graduates of mathematics

[1] Basic, applied, contract, artistic research (see Definition of Terms in Methodology HEI2025+).

study programs, who are exceptionally well equipped – thanks to their general skills in critical thought, ability to find connections between phenomena, and exact thinking – for an extremely diverse portfolio of applications.
The institute consists of 4 departments – Real analysis and dynamical systems, Functional analysis and partial differential equations, Geometry and mathematical physics and Applied mathematics (the last serving mainly for the above-mentioned bachelor/master theses directed towards "applications in practice", with a small amount of applied research – especially in the area of crises management and mathematical economics – carried out also by its academic staff), together with the institute's Secretariat (handling economic, organizational and study agendas).

Table 3.1.1 - Staffing per FTE[2]

| Academic/ Professional position | Total / Of which women | | | | | |
|---|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 | Total |
| Professor | 2/0 | 2/0 | 2/0 | 1,3/0 | 2/0 | 3 |
| Associate Professor | 7/2 | 7,5/2,5 | 7/2 | 8,0/2 | 8,6/2,7 | 12 |
| Assistant Professor | 13,2/6,0 | 11,2/4,9 | 9,2/3,2 | 8,2/3,8 | 7,5/4 | 16 |
| Assistant | 0,4/0,4 | 0,4/0,4 | 0,4/0,4 | 0,4/0,4 | 0,4/0,4 | 1 |
| R&D Personnel[3] | 0,0 | 0,0 | 0/0 | 0/0 | 0/0 | 0 |
| Researchers in other categories[4] | 0,8/0 | 0,1/0,1 | 0,5/0,1 | 1,8/0 | 2,2/0,5 | 9 |
| Technical and economic staff[5] | 6/3 | 6/3 | 6/3 | 6/3 | 6/3 | 6 |
| Scientific, research and development staff involved in teaching activities | 22,6/8,4 | 21,1/7,8 | 18,6/5,6 | 17,9/6,2 | 18,5/7,1 | 27 |
| Early career researchers[6] | 6,8/3 | 6/3 | 3,5/1,3 | 4,4/1,8 | 4,7/3,2 | 14 |
| Total[7] | 29,4/11,4 | 27,2/10,9 | 25,1/8,7 | 25,7/9,2 | 26,7/10,6 | 42 |

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D personnel, researchers in other categories and technical and economic staff are mutually exclusive, i.e. one staff member is reported under one category only. Scientific, research and development staff involved in teaching activities, as well as early career researchers are reported collectively for all the above-mentioned categories.

[2] The average number of hours worked is calculated as the ratio of the total number of hours actually worked during the reference period, from 1 January to 31 December, by all staff (including agreement on work activity, excluding agreement on work performance) to the total annual working time pool per full-time employee. The full- time status of the worker in the evaluated unit is always reported. If an employee holds more than one type of full-time job within the evaluated unit, the total sum of the two shall be reported.
[3] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).
[4] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).
[5] Who participates in the management and support of R&D&I in the institution.
[6] See Definition of Terms in Methodology HEI2025+.
[7] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I personnel, researchers in other categories and technical and economic staff.

### 3.1.2 Age structure of R&D&I personnel of the evaluated unit and their structure by job title and gender in the year 2019 (numbers of physical employees and personnel)[8]

| Academic/ professional position | Under 29 years | | 30-39 years old | | 40-49 years old | | 50-59 years old | | 60-69 years old | | 70 years and older | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women |
| Professor | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| Associate Professor | 0 | 0 | 0 | 0 | 5 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| Assistant Professor | 0 | 0 | 8 | 6 | 4 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| Assistant | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| R&D Personnel[9] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Researchers in other categories[10] | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Technical and economic staff[11] | 0 | 0 | 2 | 0 | 2 | 1 | 2 | 2 | 0 | 0 | 0 | 0 |
| Scientific, research and development staff involved in teaching activities | 0 | 0 | 8 | 6 | 9 | 2 | 2 | 1 | 2 | 0 | 3 | 1 |
| Early career researcher[12] | 0 | 0 | 6 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total[13] | 0 | 0 | 10 | 6 | 11 | 3 | 7 | 3 | 2 | 0 | 3 | 1 |

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D Personnel, Researchers in other categories and Technical and economic staff are mutually exclusive, i.e. one staff member is reported in only one category. The categories of scientific, research and development staff involved in teaching activities and early career researchers are reported collectively for all the above-mentioned categories.

### 3.1.3 Age structure of R&D&I personnel of the evaluated unit and their structure by job title and gender in the year 2023 (numbers of physical employees and personnel)[14]

| Academic/ professional position | Under 29 years | | 30-39 years old | | 40-49 years old | | 50-59 years old | | 60-69 years old | | 70 years and older | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women |
| Professor | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

[8] The total number of employees/workers as of 31st December of the calendar year in question is to be entered, irrespective of the level of time worked, but only in an employment relationship (including agreement on work activity, excluding agreement on work performance). Other types of contractual relationships under the Civil Code that involve purchase of services are not included.
[9] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).
[10] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).
[11] Who participates in the management and support of R&D&I in the institution.
[12] See Definition of Terms in Methodology HEI2025+.
[13] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I Personnel, Researchers in other categories and technical and economic staff.
[14] The total number of employees/workers as at 31.12. of the calendar year in question is to be entered, irrespective of the level of time worked, but only in an employment relationship (including agreement on work activity, excluding agreement on work performance). Other types of contractual relationships under the Civil Code that involve purchase of services are not included.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Associate Professor | 0 | 0 | 1 | 1 | 3 | 1 | 5 | 1 | 1 | 0 | 0 | 0 |
| Assistant Professor | 0 | 0 | 2 | 1 | 4 | 3 | 1 | 0 | 0 | 0 | 1 | 0 |
| Assistant | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| R&D Personnel[15] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Researchers in other categories[16] | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Technical and economic staff[17] | 0 | 0 | 0 | 0 | 4 | 1 | 2 | 2 | 0 | 0 | 0 | 0 |
| Scientific, research and development staff involved in teaching activities | 0 | 0 | 3 | 2 | 8 | 4 | 7 | 1 | 1 | 0 | 2 | 1 |
| Early career researcher[18] | 0 | 0 | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total[19] | 0 | 0 | 5 | 2 | 13 | 5 | 9 | 3 | 1 | 0 | 2 | 1 |

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D personnel, researchers in other categories and technical and economic staff are mutually exclusive, i.e. one staff member is reported under one category only. Scientific, research and development staff involved in teaching activities, as well as early career researchers are reported collectively for all the above-mentioned categories.

Table 3.1.4 – Students

| Type of study | 2019 | | 2020 | | 2021 | | 2022 | | 2023 | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women |
| Undergraduate | 137 | 77 | 109 | 56 | 124 | 68 | 131 | 82 | 152 | 86 | 522 | 292 |
| Master's[20] | 1 | 0 | 4 | 2 | 4 | 3 | 6 | 3 | 5 | 2 | 10 | 5 |
| Doctoral | 4 | 0 | 4 | 0 | 3 | 0 | 4 | 1 | 5 | 2 | 7 | 2 |
| Lifelong Learning Courses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 142 | 77 | 117 | 58 | 131 | 71 | 141 | 86 | 162 | 90 | 539 | 299 |

Table 3.1.5 - Study programmes in Czech/English

| Type of study programme | Total[21] / Of which professional study programmes | | | | | |
|---|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 | Total |

[15] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).
[16] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).
[17] Who participates in the management and support of R&D&I in the institution.
[18] See Definition of Terms in Methodology HEI2025+.
[19] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I personnel, researchers in other categories and technical and economic staff.
[20] All master's degree students are listed, regardless of the length of their programme of study.
[21] The total number of study programmes for which admissions have been announced in a given academic year.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Undergraduate | 1/0 | 0/0 | 1/0 | 0/0 | 1/0 | 0/0 | 1/0 | 0/0 | 1/0 | 0/0 | 1/0 | 0/0 |
| Master's | 1/0 | 0/0 | 1/0 | 0/0 | 1/0 | 0/0 | 1/0 | 0/0 | 1/0 | 0/0 | 1/0 | 0/0 |
| Doctoral | 2/2 | 0/0 | 2/0 | 0/0 | 2/0 | 0/0 | 2/0 | 0/0 | 2/0 | 0/0 | 2/2 | 0/0 |
| Lifelong Learning courses | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 |
| Total | 4/2 | 0/0 | 4/0 | 0/0 | 4/0 | 0/0 | 4/0 | 0/0 | 4/0 | 0/0 | 4/2 | 0/0 |

Note: For each SP type, enter the number of SPs in Czech language in the first cell and insert the number of SPs in English language after the slash in the same cell (e.g. 15/3), enter the number of professional SPs in Czech language in the second cell and insert the number of professional SPs in English language after the slash. Follow a similar procedure in the last column of the table (Total).

### 3.1.6 – R&D&I capacities

| R&D&I field | FORD | FORD share [%] | Predominant type of research | Total share of industry group [%] |
|---|---|---|---|---|
| 1. Natural Sciences | 1.1 Mathematics | **100 %** | Basic Research | **100 %** |
| | 1.2 Computer and information sciences | | Zvolte položku. | |
| | 1.3 Physical sciences | | Zvolte položku. | |
| | 1.4 Chemical sciences | | Zvolte položku. | |
| | 1.5 Earth and related environmental sciences | | Zvolte položku. | |
| | 1.6 Biological sciences | | Zvolte položku. | |
| | 1.7 Other natural sciences | | Zvolte položku. | |
| 2. Engineering and Technology | 2.1 Civil engineering | | Zvolte položku. | |
| | 2.2 Electrical engineering, Electronic engineering, Information engineering | | Zvolte položku. | |
| | 2.3 Mechanical engineering | | Zvolte položku. | |
| | 2.4 Chemical engineering | | Zvolte položku. | |
| | 2.5 Materials engineering | | Zvolte položku. | |
| | 2.6 Medical engineering | | Zvolte položku. | |
| | 2.7 Environmental engineering | | Zvolte položku. | |
| | 2.8 Environmental biotechnology | | Zvolte položku. | |
| | 2.9 Industrial biotechnology | | Zvolte položku. | |
| | 2.10 Nanotechnology | | Zvolte položku. | |
| | 2.11 Other engineering and technologies | | Zvolte položku. | |
| 3. Medical and Health Sciences | 3.1 Basic medicine | | Zvolte položku. | |
| | 3.2 Clinical medicine | | Zvolte položku. | |
| | 3.3 Health sciences | | Zvolte položku. | |
| 4. Agricultural and veterinary sciences | 4.1 Agriculture, Forestry, and Fisheries | | Zvolte položku. | |
| | 4.2 Animal and Dairy science | | Zvolte položku. | |
| | 4.3 Veterinary science | | Zvolte položku. | |
| | 4.4 Other agricultural sciences | | Zvolte položku. | |
| 5. Social Sciences | 5.1 Psychology and cognitive sciences | | Zvolte položku. | |
| | 5.2 Economics and Business | | Zvolte položku. | |

| | | | | |
|---|---|---|---|---|
| | 5.3 Education | | Zvolte položku. | |
| | 5.4 Sociology | | Zvolte položku. | |
| | 5.5 Law | | Zvolte položku. | |
| | 5.6 Political science | | Zvolte položku. | |
| | 5.7 Social and economic geography | | Zvolte položku. | |
| | 5.8 Media and communications | | Zvolte položku. | |
| | 5.9 Other social sciences | | Zvolte položku. | |
| 6. Humanities and the Arts | 6.1 History and Archaeology | | Zvolte položku. | |
| | 6.2 Languages and Literature | | Zvolte položku. | |
| | 6.3 Philosophy, Ethics and Religion | | Zvolte položku. | |
| | 6.4 Arts (arts, history of arts, performing arts, music) | | Zvolte položku. | |
| | 6.5 Other Humanities and the Arts | | Zvolte položku. | |
| | Total | 100 % | - | 100 % |

## RECOGNITION BY THE RESEARCH COMMUNITY

### 3.2 Recognition by the research community

The evaluated unit will briefly comment on its position in the research community. It shall consider individual and other prestigious R&D&I awards, participation of its academic staff in the editorial boards of international scientific journals, elected membership in professional societies, major invited lectures given by the evaluated unit's academic staff abroad or by foreign scientists and other relevant guests at the evaluated unit. Additionally, it will address the involvement of staff in the evaluation of national or European project/programme calls over the period of 2019–2023 based on the data provided in annex tables 3.2.1 to 3.2.5 (max. 10 most relevant items). If necessary, the evaluated unit shall list any additional services to the scientific community that it considers relevant.

*Maximum 1000 words.*

**Self-assessment:**

In the period 2019-2023, faculty members of the institute participated as members of editorial boards of a total of 14 international mathematics journals (3x UK and Ukraine, 2x USA and Slovakia, 1x Germany, the Netherlands, Switzerland and Czech Republic).
Two faculty members belonged to elected members of the Learned Society of the Czech Republic (J. Smítal, M. Engliš).
Over the same period, faculty members gave 60+ talks at more than 40 international conferences (almost all of them abroad), of which there were 6 invited talks. One more invited talk was given at a national research institution abroad.
They also accomplished a total of over 40 research visits abroad, giving 10 colloquium or seminar talks there (not counting lectures for students).
More than 30 researchers visited the institute from abroad during the same period, giving a total of 49 lectures at the institute.
Evaluation activities of the institute's staff members included assessment of project applications for grant agencies/funding providers in Austria, Hungary, Slovakia and Czech Republic.

Table 3.2.1 - Prestigious R&D&I awards granted during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Name of the award | Awarding institution |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

Note: Provide up to 10 examples.

Table 3.2.2 Participation of academic staff of the evaluated unit in editorial boards of international scientific journals during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Name of scientific journal, ISSN |
|---|---|
| Prof. RNDr. Miroslav Engliš, DrSc. | **Czechoslovak Math. J., 0011-4642 (Editor-in-Chief)** |
| Doc. RNDr. Michal Marvan, CSc. | **Europ. J. Math., 2199-675X (Editorial board member, till 2020)** |
| Prof. Roman Popovych, D.Sc. | **J. Math. Anal. Appl., 0022-247X (Associate Editor)** |
| Prof. Roman Popovych, D.Sc. | **SIGMA, 1815-0659 (Associate Editor)** |
| Prof. RNDr. Artur Sergyeyev, DSc. | **Advances Math. Phys., 1687-9139 (EB member)** |
| Prof. RNDr. Artur Sergyeyev, DSc. | **J. Phys. A Math. Theor., 1751-8113 (Peer Review Advisory Panel member)** |
| Prof. RNDr. Artur Sergyeyev, DSc. | **Partial Diff. Eqs. Appl. Math., 2666-8181 (EB member)** |
| Prof. RNDr. Artur Sergyeyev, DSc. | **J. Nonlinear Math. Phys., 1776-0852 (EB member)** |
| Prof. RNDr. Jaroslav Smítal, DrSc. | **Qualitative Theory of Dynamical Systems, 1575-5460 (Associate Editor)** |
| Prof. RNDr. Jaroslav Smítal, DrSc. | **Aequationes Math., 0001-9054 (EB member)** |

Note: Please provide up to 10 examples of academic staff participation in editorial boards of international scientific journals (e.g. editor, editorial board member, etc.).

Table 3.2.3 The most important invited lectures delivered by the academic staff of the evaluated unit at foreign institutions during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Invited lecture title | Name of host institution, or name of conference or event | Year |
|---|---|---|---|
| Prof. RNDr. Artur Sergyeyev, DSc. | **Integrable systems in four independent variables from contact geometry** | **Analytical and Numerical Methods in Differential Equations** | **2021** |
| Prof. RNDr. Artur Sergyeyev, DSc. | **Multidimensional integrable systems related to Jacobi structures** | **XVIth International Conference Differential Geometry and Dynamical Systems DGDS-2022** | **2022** |
| Prof. RNDr. Miroslav Engliš, DrSc. | **M-harmonic Bergman kernels** | **Hayama Symposium on Complex Analysis in Several Variables XXIII** | **2022** |
| Prof. RNDr. Artur Sergyeyev, DSc. | **Integrable systems in four independent variables related to contact structures in dimension three** | **Differential Geometry and Integrable Systems, Osaka** | **2023** |
| Prof. RNDr. Artur Sergyeyev, DSc. | **Recent Advances in Multidimensional Exactly Solvable Models** | **International Webinar on Advances in Mathematical Sciences** | **2023** |

| | | | |
|---|---|---|---|
| Prof. RNDr. Miroslav Engliš, DrSc. | **M-harmonic Bergman kernels** | **Leibniz Universität Hannover** | **2023** |
| Prof. Roman Popovych, D.Sc. | **Point transformations of differential equations** | **Division of Mathematics, National Academy of Sciences of Ukraine** | **2023** |

Note: Provide up to 10 examples.

Table 3.2.4 - The most important lectures by foreign scientists and other guests relevant to R&D&I at the evaluated unit during the evaluation period

| Name, surname and title(s) of the lecturer | Lecturer's employer at the time of the lecture | Invited lecture title | Year |
|---|---|---|---|
| Prof. Roman Popovych, D.Sc. | **Universität Wien** | **Conditional symmetries of linear partial differential equations** | **2019** |
| Prof. dr. S. Trofimchuk | **Universidad de Talca, Chile** | **On the uniqueness of traveling waves in the delayed KPP-Fisher equation** | **2019** |
| Prof. Roman Popovych, D.Sc. | **Universität Wien** | **Equivalence Groups and Their Applications** | **2021** |
| Prof. dr. hab. Maciej Błaszak | **Adam Mickiewicz University, Poznań** | **Hamiltonian integrable nonlinear ODEs** | **2022** |
| Prof. Thomas Zürcher | **University of Silesia in Katowice** | **Some remarks on random homeomorphisms** | **2022** |
| dr. hab. Jacek Chudziak | **University of Rzeszów, Poland** | **Non-periodic solutions of the Golab-Schinzel type functional equations** | **2022** |
| Prof. Igor Leite Freire | **UFABC, Brazil** | **Conserved quantities and the problem of continuation of solutions for the Camassa-Holm equation** | **2022** |
| Prof. Francisco J. Herranz | **Universidad de Burgos, Spain** | **Lie-Hamilton systems and their Poisson-Hopf deformations** | **2022** |
| Prof. Tamara Garrido Letrán | **University of Cádiz, Spain** | **New conserved quantities and modern symmetry analysis applied to a dissipative Westervelt equation** | **2023** |
| Prof. dr. hab. Wojciech Kryński | **IM PAN, Warsaw, Poland** | **On deformations of dispersionless Lax systems** | **2023** |

Note: Provide up to 10 examples.

Table 3.2.5 - Involvement in the evaluation of national/European research project/programme calls relevant to the R&D&I area at the unit during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Name of the research project/programme call | Name of the contracting authority/guarantor of the project/programme call | Year |
|---|---|---|---|
| Doc. Marta Štefánková | **Standard grants call** | **VEGA, Slovakia** | **2019** |

| | | | |
|---|---|---|---|
| Prof. Jaroslav Smítal | **Standard grants call** | **NKFIH, Hungary** | **2020** |
| Prof. Miroslav Engliš | **Standard grants call** | **FWF, Austria** | **2022** |
| Dr. Katarina Petrlová | **INTEREXCELLENCE II** | **MEYS, Czech Reublic** | **2022** |

Note: Provide up to 10 examples.

## RESEARCH PROJECTS

### 3.3 Research projects

The evaluated unit shall list at most 10 (considered most significant by the evaluated unit) research projects/activities (regardless of whether they are supported by public funds or based on contract research[22]) that it has implemented or participated in during the period of 2019–2023[23]. This should be done from the full list in annex tables (Table 3.3.1-3.3.2)[24], regarding particularly the results achieved or the application potential of the projects. The unit should also describe how the research projects contributed to the mission and purpose of the evaluated unit. If the evaluated unit has been a participant in listed project, it shall indicate which other entities were involved and describe its contribution to the project. The interdisciplinary aspects of the projects will also be commented on, along with any collaboration with other units of the evaluated HEI.

*Maximum 300 words per project.*

**Self-assessment:**

In the period 2021-2023, the institute was the main and sole implementer of the 3-year grant project from the area of basic research in mathematics, given in Table 3.3.1 below, carried out by a team consisting of 2 faculty members, 3 postdocs from abroad selected in hiring calls, and 1 local doctoral student. The output of the project were 15 publications in international mathematical journals (quite a number of them in Q1-journals according to Web of Science ranking) plus 3 in conference proceedings published by Springer. The project content directly falls into the main mission and scientific direction of the institute – high-quality basic research in selected areas of pure mathematics.

In the period 2017-2020, the institute also participated in the interdisciplinary project LTI17018 *"Support and development of international collaboration in the area of relativistic astrophysics and preparation of X-ray cosmic missions"* of the Inter-Inform program of the MEYS of the Czech Republic, carried out by the Institute of Physics of the university (until 2019, as part of the Faculty of Philosophy and Science). The project led to support for involvement in the preparation of participation and expansion of participation in scientific programs of international astrophysical space missions, the establishment of partnership agreements with foreign research and academic institutions, the preparation of international projects, the involvement of doctoral and postdoctoral researchers in international cooperation, and the organization of workshops, conferences, consultations and information meetings. More details are available in the Institute of Physics part of this self-evaluation report.

While the institute, due to its predominant focus on basic research in the area of pure mathematics, did not seriously seek implementation of or participation in projects of applied research or in

[22] For the definition of contract research for the purposes of evaluation in the HE segments, see Article 2.2.1 of the Community Framework for State Aid for Research, Development and Innovation 2014/C 198/01.

[23] Regardless of whether the projects are completed or still ongoing, provided that at least part of the project was implemented during the evaluation period.

[24] The evaluated unit shall only fill tables that are relevant to it.

contract research activities, its department of Applied Mathematics effectively carried out a number of applied-sphere collaborations, including those with participation of bachelor/master students; more details about these are given in Section 3.4 below.
A small number of projects, totaling to 570 – 750 thousand CZK (22 – 30 thousand EUR) annually, funded by Student Grant Agency of the university (SGS SU), were carried out throughout the evaluation period by master and doctoral students. Since these are internal projects of SU only, their details are not included in Table 3.3.1 below.

Table 3.3.1 Projects supported by public funds

| In the role of beneficiary | | | | | | |
|---|---|---|---|---|---|---|
| Provider[25] | Project name | Support (in thousands CZK/EUR)[26] | | | | |
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| Czech Science Foundation (GAČR) | Function theory and related operators in complex domains | 0/0 | 0/0 | 1 153/45 483 | 1 711/67 500 | 1 711/67 500 |
| | | | | | | |
| Total | | **0/0** | **0/0** | **1 153/45 483** | **1 711/67 500** | **1 711/67 500** |
| In the role of another participant | | | | | | |
| Provider[27] | Project name | Support (in thousands CZK/EUR) | | | | |
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| | | | | | | |
| | | | | | | |
| Total | | | | | | |

Table 3.3.2 - Contract research activities

| Client[28] | Activity name | Revenue (in thousands CZK/EUR) | | | | |
|---|---|---|---|---|---|---|
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| | | | | | | |
| | | | | | | |
| Total | | | | | | |

Note: List and describe contract research activities with a revenue in a given calendar year, regardless of the amount of financial revenue.

[25] If the provider is from abroad, please indicate the provider's country of origin in brackets. For the determination of the country of origin of the provider, the place of residence of the provider is decisive.
[26] Indicate the total amount expressed in thousands of CZK and the conversion of the total amount into Euro.
[27] Ibid.
[28] If the client is from abroad, indicate in brackets the country of origin of the client.

**3.4 Research results with existing or prospective impact on society**

The evaluated unit shall briefly comment on a maximum of 10 (considered most significant by the evaluated unit) research results already applied or realistically heading towards application during the period of 2019–2023, based on the overview annex table 3.4.1 (it is recommended to indicate results with a link to projects listed in indicator 3.3). The evaluated unit must demonstrate in its description that the research results have led or will soon lead to positive impacts[29], on society (e.g. description of how the results are used by various users, the range of persons/institutions for which the result is relevant, measurable economic impacts, etc.). The evaluated entity shall indicate in its commentary whether the gender dimension is considered in these results and discuss the impacts of the results regarding sustainability.

*Maximum range 300 words/result.*

**Self-assessment:**

Examples of research collaborations of the Mathematical Institute with existing or prospective impact on society over the evaluation period include the following.

Empirical analysis of the energy commodity derivatives market: Empirical analysis and modelling of selected time series of financial derivatives such as power electricity and natural gas futures using regression and correlation analysis and time series modelling in SPS software. The results are used by the purchasing department of the client - MS UTILITIES & SERVICES based in the region to determine the dynamics of purchasing and continuously adapt to the company's demand.

Assessment of the difficulty of evacuating the senior citizens' home in Kravaře: Calculation of the total time of day and night evacuation, comparison of differences, determination of possible risks during evacuation. The results were used by the Senior Citizens' Home in Kravaře when updating the evacuation plan and are still used by the Fire Rescue Service of the Moravian-Silesian Region.

Data analysis using the Python programming language: Analysis of the provided anonymized dataset of health insurance company clients. Cleaning of erroneous data. Analysis of trends and correlations between individual variables. Creation of a model to predict the risk of CMP (cerebral stroke) in a given patient. The results are used by the anonymized health insurance company to establish a preventive program against stroke.

Accident with the release of a hazardous substance from a pipeline and its subsequent spread in a strategic facility: Modelling of the leakage of a hazardous substance (blast furnace gas from a pipeline) in the ALOHA program in two scenarios. Calculations of concentrations in individual rooms of a strategic facility. Recommendations for appropriate procedures for employees of a strategic facility in the event of an accident with a leakage of a hazardous substance. The results were used by the AGEL Třinec Podlesí Hospital when updating the evacuation plan.

Methodology for updating selected characteristics of emergencies set out in the Regional Emergency Plan: Determination of the impacts of selected emergencies on the health of the population, including the forces and resources for providing health care. Proposal of a methodology for updating selected characteristics of emergencies (i.e. the number of dead persons, the number of injured persons with the possibility of transport to a medical facility and a specialized medical

[29] See Terms definition.

facility, the number of endangered persons, the numbers and types of transported means of health service providers, the number of acute care beds), which were described and selected by the Regional Authority of the Moravian-Silesian Region, the Department of Health, which is still using the results.

Methods for determining customer churn: Proposal of methods for evaluating customer churn (as one of the indicators of company performance) based on individual customer behavior patterns. The results are used by UGO Trade company whose requirement was to evaluate their overall churn based on the data received and to propose recommendations regarding customer churn.

Analysis of warnings to the population in the Moravian-Silesian Region: Analysis of the coverage of the territory by warning signals and warning information in the MSR (Moravian-Silesian Region) with a focus on emergency planning zones, areas at risk of floods and releases of hazardous substances. Distribution of warning terminal elements in the MSR, determination of the range of warning signals and warning information and coverage of municipalities in the region by warning terminal elements, are needed for the Fire and Rescue Service of the Czech Republic, Department of Population Protection and Crisis Management in Ostrava.

Table 3.4.1 - Overview of research results in the period under evaluation

| Type of result[30] | Year of application | Name |
|---|---|---|
| Energy market analysis | **2019** | **Empirical analysis of the energy commodity derivatives market** |
| Service to public/government community | **2019** | **Assessment of the difficulty of evacuating the senior citizens' home in Kravaře** |
| Service to public/government community | **2021** | **Data analysis using the Python programming language** |
| Service to public community / expert output for policymaking | **2021** | **Accident with the release of a hazardous substance from a pipeline and its subsequent spread in a strategic facility** |
| Service to government community / expert output for policymaking | **2021** | **Methodology for updating selected characteristics of emergencies set out in the Regional Emergency Plan** |
| Expert consultancy | **2023** | **Methods for determining customer churn** |
| Service to government community | **2023** | **Analysis of warnings to the population in the Moravian-Silesian Region** |

Note 1: Please list and describe the results already applied in practice or heading towards application in practice with existing or prospective impact on the society (e.g. domestic or foreign patents, sold licenses, spin-offs, prototypes, varieties and breeds, methodologies, significant analyses, surveys, expert outputs for policymaking or other forms of non-publication outputs, etc.). Indirect results of research, development and creative activities with documented societal impact, e.g. expert activities, services to the public/government/scientific community, may also be reported.

[30] Specify the specific type of result. Add rows as needed.

## TRANSFER OF RESULTS INTO PRACTICE

### 3.5 Transfer of results into practice

The evaluated unit shall briefly describe its system for transferring results into practice. It shall also indicate up to five of the most typical users of its results, whether in the university environment or in the non-university application/corporate sphere, detailing how it collaborates with them and how it seeks out new users (using a maximum of five specific examples).

It will also indicate whether and how it commercialises R&D&I results (e.g. selling licences, setting up start-up or spin-off companies, etc.)[31], providing brief description of the commercialisation methods used. The effectiveness of the transfer of results and the commercialisation of R&D&I results will be described using a selection of results (max. five) listed in annex table (Table 3.4.1).[32]

Additionally, the evaluated unit shall briefly comment on the funds received during the period of 2019–2023 from non-public, non-grant sources (e.g. licences sold, spin-off revenues, donations, etc.). A full summary shall be provided in annex table (Table 3.5.1).

*Maximum 500 words plus 200 words for each provided example of finding a new user of results and commercialization.*

**Self-assessment:**

Due to its predominant focus on basic, rather than applied/contract, research, the institute does not use any "institutionalized" system for transferring results into practice, but rather proceeds on ad-hoc basis with its partners in the public, government or corporate sphere.
The most typical users of the results in practice are the Fire Rescue Service of the Moravian-Silesian Region (and its partners), the Opava City Magistrate, and private companies requiring optimization of their outputs (e.g. Model Obaly a.s., Mondelēz, Opavia, Kofola a.s., MS UTILITIES & SERVICES a.s.). Cooperation takes place mainly in the form of a problem assignment and then its solution using mathematical methods, most often in the form of a bachelor or master thesis. We seek new users/partners by expanding our personal contacts, at conferences, seminars, or through recommendation from already cooperating entities.
The institute perceives its outputs of this character as a service to government, public or regional community. Additionally, in the case of results created within the bachelor/master theses, the intellectual property rights to the result belong not to the university but to the student under the Czech legislation. For this reason, the institute did not, and does not intend to, make any attempts at commercializing this type of results.

Table 3.5.1 - Summary of non-public revenues received during the period under evaluation

| Type of revenue | Revenue (in thousands CZK/EUR) | | | | |
|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 |
| | | | | | |
| | | | | | |
| | | | | | |

[31] In the case of military HEIs, their specific position is taken into account when evaluating the commercialisation/evaluation of R&D&I results.
[32] If the commercialisation of R&D&I results is carried out in this way.

| | | | | | |
|---|---|---|---|---|---|
| Total | | | | | |

Note: Enter funds raised for R&D&I from non-public sources besides grants or contract research (e.g. licences sold, spin-off company revenues, donations, etc.) in the calendar year.

## POPULARIZATION OF VAVAI

**3.6 The most important activities in the field of popularization of R&D&I and communication with the public**

The evaluated unit shall briefly describe its main activities related to the popularisation of R&D&I and communication with the public (e.g. popularisation lectures, citizen science initiatives, etc.) during the period of 2019–2023 and provide up to 10 examples that it considers the most significant.

*Maximum 500 words plus 200 words for each example given.*

**Self-assessment:**

The institute is actively engaged in the popularization of science and research through a variety of activities aimed at the general public. Key activities include the Brain Fitness visitor center, which offers interactive experiences and educational programs. The institute also operates “Math Emergency Center”, which provides immediate assistance to elementary and secondary school students who need help understanding mathematical concepts and examples. During the COVID-19 pandemic, it introduced online tutoring, which allowed students to continue learning even in those difficult times.
In addition, the institute’s staff participates in lectures for the general public, for example within the Czech Mars Society and the Thank God It’s Astrophysical Friday events, where they popularize topics related to space and mathematics. The institute also organizes mathematics competitions and creates popular educational videos on YouTube, thereby raising awareness of mathematics and its applications. Participation in events such as the Night of Scientists and the Week of the Academy of Sciences further strengthens communication with the public and supports interest in science and innovation in general.
More detailed information about selected specific activities follows.

Activities of the Brain Fitness Visitor Center: The Brain Fitness Popularization Center of the Mathematics Institute offers the general public in the afternoons the opportunity to try out various puzzles, ciphers or riddles, entertaining examples from mathematics or logic with the assistance of the institute’s employees. The employees also try to reveal to visitors the mathematical background or principles of some puzzles or ciphers, or to introduce in a layman-accessible way various advances or latest "trends" in mathematics.

Activities of the Mathematical and the Physics Emergency Centers; Mathematical Emergency Center in the Ukrainian language: The Mathematical and the Physics Emergency Centers provide assistance not only to elementary and secondary school students if they are struggling with a concept/example. This is not a classic regular tutoring, but rather an urgent help to students or even their parents when needed. Mathematical Emergency Center is available also in Ukrainian language.

Online math tutoring during the coronavirus pandemic: During the COVID-19 pandemic, the institute ran tutoring courses for elementary and secondary school students in the form of online personal consultations focused on mathematics.

Lecture activity for the general public within the Czech Mars Society: As part of the activities of the Czech section of the global Mars Society organization, the institute's employees gave popular science lectures intended for the general public on topics related to space exploration. Both in person and online. Since 2021, 10 lectures per year were given.

Participation in the lectures within Thank God it´s Astrophysical Friday events: The employees of the institute participate in the Thank God it´s Astrophysical Friday event with mathematically focused lectures. The event is intended for high school students who are interested in the fields of physics and mathematics, mostly successful solvers of high-school competitions.

Lecture activity at secondary schools: The institute organizes visits to secondary schools with lectures designed to popularize and introduce higher mathematics. They explain where mathematical problems lie and what their solutions are. About 20 lectures/year are given.

Organization/co-organization of mathematical competitions for elementary and secondary school students: The institute organizes and co-organizes a number of regular mathematical competitions for high-school students (NABOJ, Pythagoriada, final round of SOČ – a nationwide competition of scientific publications of high-school students, etc.).

Creating popularization and educational videos on mathematical topics within the "Dobré vědět" ("Good to know") channel: Within this popular educational YouTube channel, which highlights and explains interesting physics and mathematical problems in particular, the institute's employees participated in several contributions related to mathematics.

Participation in traditional events popularizing science (Scientists' Night, Academy of Sciences Week) with popularization lectures for the general public. About 5 lectures/year were given.

Web presentation dedicated to Surfaces of Constant Astigmatism in the form of 3D models for printing: As a visual output of one of the doctoral theses at the Department of Geometry and Mathematical Physics which focused on surfaces of constant astigmatism, not only an online repository of stl models of some surfaces described in the dissertation was created, but also many of them were printed on the institute's 3D printer and exhibited with the accompanying texts, and are now part of the Brain Fitness popularization center.

## IMPLEMENTATION OF RECOMMENDATIONS

### 3.7 Implementation of the recommendations in Module 3

The evaluated unit will briefly describe how it has implemented the recommendations for Module 3 from the previous evaluation period, if applicable.

*Maximum 1000 words.*

**Self-assessment:**

The following list briefly accounts the recommendations in 2020 for Module 3 from the previous evaluation period, and describes the institute's responses.

- *One aspect of improvement could be achieved by including Master Theses in applied mathematical research, for example, related to areas such as optimization or computer science, where it is easier to attract research contracts.* This proved a bit difficult to implement due to low level of interest from the side of master students, however effort in this direction is still being continued. The defense of the first such master thesis is expected in 2026.
- *While it is unrealistic to expect a major engagement from the industrial sector, it may be possible to approach private foundations, often related to large corporations (such as Volkswagen-Foundation in Germany)*. VW has been approached and an "onboarding" process at VW took place in 2024; further development is expected.
- *For an institute of its size, the Mathematical Institute scores exceptionally well in terms of international prestige and recognition. The only recommendation is to make sure that this high level of global professional engagement will continue in the future with newly hired faculty.* We believe we have successfully continued this engagement, including i.e. a newly hired professor, formerly from Canada and Vienna, who became the institute's director in November 2024.
- *Given the current strength of the popularization efforts by the Mathematical Institute, the only recommendation is to continue with these regular activities, also involving junior or newly hired faculty.* Again, we believe the institute has stood up to this, as witnessed by the data in Section 3.6 above.
- *In cooperation with the Astrophysics research center, especially on the topic of dynamical systems, it should be possible to intensify further the amount of research directed towards applications in physics.* At the moment, this is the only item which we have not yet been able to respond to effectively, due to the institute's staff preoccupation with subjects in other directions. We perceive it as a task to be seriously addressed in very near future.

## A LIST OF SUPPORTING DOCUMENTS/LINKS FOR MODULE 3

| Document name | No. criteria | Location (link in HTML) |
|---|---|---|
| The Brain Fitness Popularization Center | 3.6 | https://bf.math.slu.cz/ |
| Mars Society | 3.6 | https://www.marssociety.cz/ |
| NABOJ | 3.6 | https://math.naboj.org/gb/en/ |
| "Dobré vědět" ("Good to know") channel | 3.6 | https://www.youtube.com/c/Dobr%C3%A9v%C4%9Bd%C4%9Bt |
| online repository | 3.6 | http://3d.math.slu.cz/ |

# SELF-EVALUATION REPORT FOR MODULE 3

## THE NAME OF THE UNIT BEING EVALUATED: Institute of Physics in Opava

## FORD: 1 - Natural sciences

### SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

**3.1 Introductory information about the unit under evaluation**

The evaluated unit will describe its mission and vision and provide a general self-reflection of the societal contribution of R&D&I, along with its long-term goals in the fields it develops. The distribution of research activities by type of research will also be commented on.[1] The evaluated unit will describe its organisational structure and size (staffing, number of students, number of study programmes implemented, etc.) based on the data provided in annex tables 3.1.1 to 3.1.6.

*Maximum 1000 words.*

This is a non-rated indicator that serves as an introduction to the evaluated unit, providing context for data in indicators 3.2-3.7.

**Self-assessment:**

The Institute of Physics in Opava (IP), as an independent constituent unit of the Silesian University in Opava, was established by the Rector of Silesian University in Opava on January 1, 2020. Previously, the IP was part of the unit Faculty of Philosophy and Science in Opava. As a result, some significant achievements from 2019 will be reported by the Faculty of Philosophy and Science in Opava. However, to ensure consistency, selected results will also be included in this IP report.

The IP is an internationally respected scientific institution whose research activities are carried out at the Research Centre for Theoretical Physics and Astrophysics and the Research Centre for Computational Physics and Data Processing, with more than two-thirds of its annual budget coming from funding based on its research output. In the field of theoretical physics, research focuses on gravitational theories, elementary particle physics, quantum field theory, and the quantum theory of multiparticle systems and their applications, particularly in astrophysics and cosmology. An important part of the IP scientific activities includes computer simulations of physical processes, the implementation of numerical methods, and the processing and analysis of large data sets. Research in various areas of relativistic astrophysics, which cover a wide range of processes in the so-called Multimessenger Astrophysics, going from processes in combined strong gravitational and electromagnetic fields around black holes and neutron stars and their observational aspect to inflationary cosmology and modelling of effects of dark energy and dark matter at the level of galaxies and their clusters, are most prominent and receiving the strongest response from the worldwide

[1] Basic, applied, contract, artistic research (see Definition of Terms in Methodology HEI2025+).

scientific community. Members (employees and doctoral students) of the IP achieve significant national and international awards.

Every year, the IP organizes its traditional international week-long RAGtime - workshop on black holes and neutron stars. The workshop proceedings are indexed in SCOPUS and focus on contemporary issues in relativistic astrophysics, particularly the physics of black holes and neutron stars. RAGtime offers valuable opportunities to engage with leading representatives of the global astrophysical community. Scientific activities of the IP and its members are closely linked to the research conducted by numerous institutions worldwide that specialize in relativistic astrophysics or particle physics. The IP is also a member of ICRANet - a global network of research centres focused on astrophysics, spanning all continents. In addition, the members collaborates extensively with research teams from, e.g., the University of Oxford, Center for Astrophysics, Harvard & Smithsonian, Harvard University, the University of Bologna, Nicolaus Copernicus Astronomical Center (Polish Academy of Sciences), International Space Science Institute (Bern), International School for Advanced Studies (Trieste), Ulugh Beg Astronomical Institute (Tashkent), the National University of Uzbekistan (Tashkent), Fudan University (Shanghai), the University of Cologne, the University of Tübingen, the University of Bremen, the University of Gothenburg, or with research institutions such as JINR Dubna, National Institute for Astrophysics (Rome), and Max Planck Institute for Radio Astronomy (Bonn). The number of cooperating institutions is constantly growing, and collaboration becomes more intensive.

Students of all study programmes of the IP have extensive opportunities for study visits abroad through the ERASMUS+ programme and other exchange programmes. They also have the chance to engage in research cooperation with leading experts worldwide. Many methods validated within basic research are also taught at the IP to students of applied physics, with a focus on environmental monitoring, diagnostic methods and data processing. The quality of scientific research is a key factor in the implementation of the 6 study programmes offered by the IP. Academic bachelor's, master's, and doctoral programmes are organized by the Education Centre for Theoretical Physics and Astrophysics, while professional study programmes are managed by the Education Centre for General Physics and Applied Physics.

The IP also places special emphasis on the popularization of science in general and the promotion of its own research results. In this regard, the Multimedia Technology study programme plays a key role, facilitating the creation of educational and popularization documentaries (films), and projections for the system Unisphere (3D immersive planetarium).

The vision of the IP from the perspective of research (which is the institute’s main focus) is, of course, to maintain and expand the current quality and quantity of its fundamental theoretical research and the broad international cooperation, while also enhancing the outputs of the IP research for applied research. A key focus is the development of new methods for working with large datasets, which are highly valuable not only in theoretical physics but also in broader applications. Since most of the theoretical physics research at the IP has traditionally centred on theoretical astrophysics, an increased emphasis on theoretical particle physics has been evident in the period from 2020 to 2023. This area will continue to receive further support in the future, alongside experimental particle physics, particularly through the participation of the IP members in European experimental projects.

Table 3.1.1 - Staffing per FTE[2]

| Academic/ Professional position | Total / Of which women | | | | | |
|---|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 | Total |
| Professor | 0/0 | 3,58/0 | 4/0 | 4/0 | 4/0 | 4 |
| Associate Professor | 0/0 | 6,66/0 | 7,86/0 | 8,1/0 | 8,64/0 | 9 |
| Assistant Professor | 0/0 | 18,86/2,67 | 18,74/2,18 | 17,56/2,2 | 18,12/3,98 | 19 |
| Assistant | 0/0 | 3/0 | 3,65/0 | 3,17/0 | 3,95/0 | 5 |
| R&D Personnel[3] | 0/0 | 0 | 0 | 0; | 0 | 0 |
| Researchers in other categories[4] | 0/0 | 8,24/2,54 | 9,57/2,68 | 8,93/2,28 | 12,06/1,95 | 18 |
| Technical and economic staff[5] | 0/0 | 5,25/5,25 | 5,25/5,25 | 7,40/7,40 | 8,15/8,15 | 10 |
| Scientific, research and development staff involved in teaching activities | 0/0 | 27,2/2,27 | 28,92/2,66 | 26,76/2,20 | 28,35/2,34 | 29 |
| Early career researchers[6] | 0/0 | 6,53/1,53 | 6,58/1,58 | 4,9/1,4 | 8,34/2,34 | 13 |
| Total[7] | 0/0 | 79,32/14,26 | 84,57/14,35 | 80,82/15,48 | 91,61/18,76 | 107 |

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D personnel, researchers in other categories and technical and economic staff are mutually exclusive, i.e. one staff member is reported under one category only. Scientific, research and development staff involved in teaching activities, as well as early career researchers are reported collectively for all the above-mentioned categories.

[2] The average number of hours worked is calculated as the ratio of the total number of hours actually worked during the reference period, from 1 January to 31 December, by all staff (including agreement on work activity, excluding agreement on work performance) to the total annual working time pool per full-time employee. The full- time status of the worker in the evaluated unit is always reported. If an employee holds more than one type of full-time job within the evaluated unit, the total sum of the two shall be reported.

[3] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).

[4] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).

[5] Who participates in the management and support of R&D&I in the institution.

[6] See Definition of Terms in Methodology HEI2025+.

[7] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I personnel, researchers in other categories and technical and economic staff.

3.1.2 Age structure of R&D&I personnel of the evaluated unit and their structure by job title and gender in the year 2019 (numbers of physical employees and personnel)[8]

**NOT APPLICABLE – the IP was established in 2020**

| Academic/ professional position | Under 29 years | | 30-39 years old | | 40-49 years old | | 50-59 years old | | 60-69 years old | | 70 years and older | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women |
| Professor | | | | | | | | | | | | |
| Associate Professor | | | | | | | | | | | | |
| Assistant Professor | | | | | | | | | | | | |
| Assistant | | | | | | | | | | | | |
| R&D Personnel[9] | | | | | | | | | | | | |
| Researchers in other categories[10] | | | | | | | | | | | | |
| Technical and economic staff[11] | | | | | | | | | | | | |
| Scientific, research and development staff involved in teaching activities | | | | | | | | | | | | |
| Early career researcher[12] | | | | | | | | | | | | |
| Total[13] | | | | | | | | | | | | |

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D Personnel, Researchers in other categories and Technical and economic staff are mutually exclusive, i.e. one staff member is reported in only one category. The categories of scientific, research and development staff involved in teaching activities and early career researchers are reported collectively for all the above-mentioned categories.

[8] The total number of employees/workers as of 31st December of the calendar year in question is to be entered, irrespective of the level of time worked, but only in an employment relationship (including agreement on work activity, excluding agreement on work performance). Other types of contractual relationships under the Civil Code that involve purchase of services are not included.

[9] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).

[10] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).

[11] Who participates in the management and support of R&D&I in the institution.

[12] See Definition of Terms in Methodology HEI2025+.

[13] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I Personnel, Researchers in other categories and technical and economic staff.

3.1.3 Age structure of R&D&I personnel of the evaluated unit and their structure by job title and gender in the year 2023 (numbers of physical employees and personnel)[14]

| Academic/ professional position | Under 29 years | | 30-39 years old | | 40-49 years old | | 50-59 years old | | 60-69 years old | | 70 years and older | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women |
| Professor | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Associate Professor | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 4 | 0 | 0 | 0 |
| Assistant Professor | 0 | 0 | 1 | 0 | 10 | 2 | 3 | 0 | 2 | 0 | 1 | 0 |
| Assistant | 0 | 0 | 5 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | |
| R&D Personnel[15] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Researchers in other categories[16] | 2 | 2 | 3 | 3 | 7 | 1 | 2 | 0 | 1 | 0 | 1 | 0 |
| Technical and economic staff[17] | 2 | 2 | 2 | 2 | 6 | 6 | 0 | 0 | 0 | 0 | 1 | 1 |
| Scientific, research and development staff involved in teaching activities | 2 | 0 | 5 | 2 | 9 | 4 | 2 | 0 | 3 | 0 | 2 | 0 |
| Early career researcher[18] | 0 | 0 | 3 | 2 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total[19] | 0 | 0 | 13 | 5 | 23 | 7 | 8 | 0 | 5 | 0 | 5 | 0 |

Note: The categories professor, associate professor, assistant professor, assistant, other scientific, R&D personnel, researchers in other categories and technical and economic staff are mutually exclusive, i.e. one staff member is reported under one category only. Scientific, research and development staff involved in teaching activities, as well as early career researchers are reported collectively for all the above-mentioned categories.

Table 3.1.4 – Students

| Type of study | 2019 | | 2020 | | 2021 | | 2022 | | 2023 | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women | Total | Women |
| Undergraduate | 0 | 0 | 17 | 6 | 77 | 32 | 126 | 53 | 167 | 82 | 302 | 134 |
| Master's[20] | 0 | 0 | 9 | 1 | 20 | 2 | 8 | 27 | 27 | 7 | 46 | 11 |
| Doctoral | 0 | 0 | 0 | 0 | 13 | 5 | 18 | 7 | 21 | 8 | 21 | 8 |

[14] The total number of employees/workers as at 31.12. of the calendar year in question is to be entered, irrespective of the level of time worked, but only in an employment relationship (including agreement on work activity, excluding agreement on work performance). Other types of contractual relationships under the Civil Code that involve purchase of services are not included.

[15] The category "R&D Personnel" includes technical and professional personnel who are not directly involved in R&D&I but are indispensable for the research activity (e.g. operators of research facilities).

[16] The category "Researchers in other categories" includes all other staff who cannot be classified under any of the above categories (e.g. independent researcher/scientist).

[17] Who participates in the management and support of R&D&I in the institution.

[18] See Definition of Terms in Methodology HEI2025+.

[19] Total is the sum of the categories: professor, associate professor, assistant professor, assistant, R&I personnel, researchers in other categories and technical and economic staff.

[20] All master's degree students are listed, regardless of the length of their programme of study.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lifelong Learning Courses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 110 | 39 | 152 | 87 | 215 | 97 | 369 | 153 |

Table 3.1.5 - Study programmes in Czech/English

| Type of study programme | Total[21] / Of which professional study programmes | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2019 | | 2020 | | 2021 | | 2022 | | 2023 | | Total | |
| Undergraduate | 0 | 0 | 1 | 0 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 |
| Master's | 0 | 0 | 2 | 1 | 3 | 1 | 3 | 1 | 3 | 1 | 3 | 1 |
| Doctoral | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| Lifelong Learning courses | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 |
| Total | 0 | 0 | 3 | 1 | 6 | 2 | 8 | 2 | 6 | 2 | 8 | 2 |

Note: For each SP type, enter the number of SPs in Czech language in the first cell and insert the number of SPs in English language after the slash in the same cell (e.g. 15/3), enter the number of professional SPs in Czech language in the second cell and insert the number of professional SPs in English language after the slash. Follow a similar procedure in the last column of the table (Total).

### 3.1.6 – R&D&I capacities

| R&D&I field | FORD | FORD share [%] | Predominant type of research | Total share of industry group [%] |
|---|---|---|---|---|
| 1. Natural Sciences | 1.1 Mathematics | 0 | Zvolte položku. | 100 |
| | 1.2 Computer and information sciences | 1 | Balanced basic and applied research | |
| | 1.3 Physical sciences | 96 | Basic Research | |
| | 1.4 Chemical sciences | 0 | Zvolte položku. | |
| | 1.5 Earth and related environmental sciences | 2 | Basic Research | |
| | 1.6 Biological sciences | 0 | Zvolte položku. | |
| | 1.7 Other natural sciences | 1 | Applied Research | |
| 2. Engineering and Technology | 2.1 Civil engineering | | Zvolte položku. | |
| | 2.2 Electrical engineering, Electronic engineering, Information engineering | | Zvolte položku. | |
| | 2.3 Mechanical engineering | | Zvolte položku. | |
| | 2.4 Chemical engineering | | Zvolte položku. | |
| | 2.5 Materials engineering | | Zvolte položku. | |
| | 2.6 Medical engineering | | Zvolte položku. | |
| | 2.7 Environmental engineering | | Zvolte položku. | |
| | 2.8 Environmental biotechnology | | Zvolte položku. | |
| | 2.9 Industrial biotechnology | | Zvolte položku. | |

[21] The total number of study programmes for which admissions have been announced in a given academic year.

| | | | | |
|---|---|---|---|---|
| | 2.10 Nanotechnology | | Zvolte položku. | |
| | 2.11 Other engineering and technologies | | Zvolte položku. | |
| 3. Medical and Health Sciences | 3.1 Basic medicine | | Zvolte položku. | |
| | 3.2 Clinical medicine | | Zvolte položku. | |
| | 3.3 Health sciences | | Zvolte položku. | |
| 4. Agricultural and veterinary sciences | 4.1 Agriculture, Forestry, and Fisheries | | Zvolte položku. | |
| | 4.2 Animal and Dairy science | | Zvolte položku. | |
| | 4.3 Veterinary science | | Zvolte položku. | |
| | 4.4 Other agricultural sciences | | Zvolte položku. | |
| 5. Social Sciences | 5.1 Psychology and cognitive sciences | | Zvolte položku. | |
| | 5.2 Economics and Business | | Zvolte položku. | |
| | 5.3 Education | | Zvolte položku. | |
| | 5.4 Sociology | | Zvolte položku. | |
| | 5.5 Law | | Zvolte položku. | |
| | 5.6 Political science | | Zvolte položku. | |
| | 5.7 Social and economic geography | | Zvolte položku. | |
| | 5.8 Media and communications | | Zvolte položku. | |
| | 5.9 Other social sciences | | Zvolte položku. | |
| 6. Humanities and the Arts | 6.1 History and Archaeology | | Zvolte položku. | |
| | 6.2 Languages and Literature | | Zvolte položku. | |
| | 6.3 Philosophy, Ethics and Religion | | Zvolte položku. | |
| | 6.4 Arts (arts, history of arts, performing arts, music) | | Zvolte položku. | |
| | 6.5 Other Humanities and the Arts | | Zvolte položku. | |
| | Total | 100 | - | 100 |

## RECOGNITION BY THE RESEARCH COMMUNITY

### 3.2 Recognition by the research community

The evaluated unit will briefly comment on its position in the research community. It shall consider individual and other prestigious R&D&I awards, participation of its academic staff in the editorial boards of international scientific journals, elected membership in professional societies, major invited lectures given by the evaluated unit's academic staff abroad or by foreign scientists and other relevant guests at the evaluated unit. Additionally, it will address the involvement of staff in the evaluation of national or European project/programme calls over the period of 2019–2023 based on the data provided in annex tables 3.2.1 to 3.2.5 (max. 10 most relevant items). If necessary, the evaluated unit shall list any additional services to the scientific community that it considers relevant.

*Maximum 1000 words.*

**Self-assessment:**

The research activities of the IP are carried out at the Research Centre for Theoretical Physics and Astrophysics [1] and the Research Centre for Computational Physics and Data Processing [2]. The activities focus on *basic research in theoretical physics and astrophysics*, particularly in relativistic astrophysics and its observational aspects related to multi-messenger astrophysics (see also Sec. 3.1 and the research centres' webpages for further details).

The IP's research *results are published in the most prestigious international peer-reviewed impact factor journals*, as can be found in the attachments Published Papers 2020 [3], Published Papers 2021 [4], Published Papers 2022 [5], and Published Papers 2023 [6], with the majority of papers classified in the Q1 category, and several even in D1. These publications have a significant impact on the global research community, being frequently cited and serving as inspiration for cutting-edge research. For example, in 2024, 9 papers from the period 2019–2023 (and 1 paper from 2018) were recognized as Highly Cited Papers according to Web of Science, as documented in the attachment Highly Cited Papers [7].

Scientists from the IP *collaborate with colleagues from leading universities and research institutions worldwide*. The IP is also a member of ICRANet, a global network of institutions dedicated to relativistic astrophysics (see Sec. 3.1 for a list of the key institutions).

Each year, the IP organizes the international week-long *RAGtime - workshop on black holes and neutron stars* [8], dedicated to current open problems in relativistic astrophysics. The most distinguished researchers worldwide, including eminent scientists such as Prof. Remo Ruffini (Rome) and Prof. Luciano Rezzolla (Frankfurt am Main), regularly participate. The IP's members present their findings, compare them with results from international colleagues, and establish valuable collaborations. In the period 2020-2023, a total of 176 talks were given at these RAGtime workshops—114 by external speakers and 62 by the IP members. (Naturally, the COVID-19 pandemic posed significant challenges in organizing scientific meetings.) In addition to the RAGtime, the IP occasionally organizes smaller workshops focused on specific topics in relativistic astrophysics.

The IP's members are also *involved in the preparation of major space mission projects*. Their participation is carried out, e.g., under the PRODEX project (preparation of the X-ray satellite eXTP mission), coordinated by the Ministry of Transport. Notably, the IP also contributes to the large ATHENA X-ray observatory, which is aimed at observing the distant universe, particularly the early

phases of galaxy evolution. The IP members also contribute to preparation of X-ray satellite mission IXPE. Furthermore, the IP's researchers are engaged in studies of cosmic rays, focusing on extremely high-energy particles. In 2023, Dr. Arman Tursunov began his Humboldt Fellowship at Max Planck Institute for Radio Astronomy in Bonn. The IP is also a member of the LISA consortium. LISA is the gravitational wave observatory planned by European Space Agency together with NASA and should launch in 2035. IP contributes mainly to the theory of gravitational wave sources and the studies of compact binaries.

The IP is a member of the *FAIR collaboration and FAIR-CZ infrastructure*. FAIR (Facility for Antiproton and Ion Research in Europe) is being built in Darmstadt Germany and focuses on studies of nuclear physics under various conditions. IP focuses mostly on the properties of exotic nuclei and on the studies of dense nuclear matter that can be found in neutron stars. FAIR-CZ is Large Research Infrastructure that is on the national roadmap of infrastructures.

*Research activities of the IP members also lead to prestigious awards*. Among the most significant achievements, Prof. Zdeněk Stuchlík received the František Nušl Prize from the Astronomical Society of the Czech Republic in 2019 (we exceptionally mention this prize here since it is very prestigious and falls within the evaluated period, even though at that time, IP was still part of the Faculty of Philosophy and Science). The František Nušl Prize is the highest award for researchers and distinguished individuals in recognition of their lifelong scientific, professional, pedagogical, popularization, or organizational contributions to astronomy and related sciences. In 2020, Dr. Arman Tursunov was honoured with the Milan Odehnal Prize, and in 2021 with the Václav Votruba Prize. More recently, in 2023, Dr. Roman Konoplya received the GAČR President's Award for outstanding results in a grant project in the field of basic research, awarded by the Czech Science Foundation (GAČR).

The significance of the IP's scientific achievements is also reflected in the *invited lectures presented of the IP members at prestigious scientific conferences and institutions* worldwide. In the period 2020-2023, 19 such lectures were delivered. Additionally, the IP researchers regularly give standard talks (lectures) at foreign universities, institutions or international conferences. On the other hand, more than 50 *important lectures were delivered by leading international scientists at the IP* (excluding the lectures presented at RAGtime). Notable invited speakers (including the RAGtime) include: Prof. Agnieszka Janiuk, Prof. Remo Ruffini, Prof. Luciano Rezzolla, Prof. John Miller, Dr. Maciek Wielgus, Prof. Włodzimierz Kluźniak, Prof. Luigi Stella, Prof. Maurizio Falanga, Prof. Bobomurat Ahmedov, Dr. Ernesto Contreras, Prof. Cosimo Bambi, Prof. Naresh Dadhich, Prof. Jorge Rueda, Prof. Tsvi Piran, Prof. Ilia Musco, and others.

The IP members actively participate in *editorial boards of internationally recognized journals*. Prof. Zdeněk Stuchlík and Dr. Roman Konoplya are members of the editorial board of the Universe journal.

Members of the IP are also *members of committees evaluating scientific projects*. In 2022, Prof. Zdeněk Stuchlík was a member of the ERC Advanced Grant (AdG) PE2 panel. Since 2023, Dr. Martin Kološ has been a member of the evaluation panel of the Czech Science Foundation (GAČR), a role previously held by Doc. Jan Schee before 2023.

Table 3.2.1 - Prestigious R&D&I awards granted during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Name of the award | Awarding institution |
|---|---|---|
| Prof. RNDr. Zdeněk Stuchlík, CSc. | František Nušl Prize for lifelong scientific, professional, pedagogical, popularization, or organizational contributions to astronomy and related sciences | Astronomical Society of the Czech Republic |
| RNDr. Arman Tursunov, Ph.D. | Václav Votruba Prize for the best thesis in theoretical physics | Czech Technical University in Prague |
| RNDr. Arman Tursunov, Ph.D. | Milan Odehnal Prize for the scientific work of young scientist | Union of Czech mathematicians and physicists |
| Dr. Roman Konoplya | GAČR President's awards for outstanding results within grant project in the field of basic research | Czech Science Foundation (GAČR) |

Note: Provide up to 10 examples.

Table 3.2.2 Participation of academic staff of the evaluated unit in editorial boards of international scientific journals during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Name of scientific journal, ISSN |
|---|---|
| Prof. RNDr. Zdeněk Stuchlík, CSc. | Universe, ISSN: 2218-1997 |
| Dr. Roman Konoplya | Universe, ISSN: 2218-1997 |

Note: Please provide up to 10 examples of academic staff participation in editorial boards of international scientific journals (e.g. editor, editorial board member, etc.).

Table 3.2.3 The most important invited lectures delivered by the academic staff of the evaluated unit at foreign institutions during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Invited lecture title | Name of host institution, or name of conference or event | Year |
|---|---|---|---|
| Dr. Jorge Ovalle | Kerr de Sitter Black Hole Revisited, Department of Physics and Astronomy | University of Bologna, Bologna, Italy | 2021 |
| Dr. Camilo Posada | Ultracompact Schwarzschild star: an exotic ECO | Latin American Webinar on Physics | 2021 |
| RNDr. Arman Tursunov, Ph.D. | High-energy processes in black hole magnetosphere | Julius-Maximilians-Universität Würzburg, Würzburg, Germany | 2022 |
| RNDr. Debora Lančová, Ph.D. | Puffy Accretion Disk: Sub-Eddington, Optically Thick, and Stable | The National Institute for Astrophysics, Rome, Italy | 2022 |
| Dr. Daniela Pugliese | Lense-Thirring effect on accretion flow from counter-rotating tori, RTG Models of Gravity colloquium | Carl von Ossietzky University of Oldenburg, Oldenburg, Germany | 2022 |
| Doc. RNDr. Gabriel Torok, Ph.D. | The link between mass of accreting compact objects and their rapid X-ray variability | University of Bremen, Bremen, Germany | 2022 |
| Prof. Marek Abramowicz | Primordial black holes and dark matter, The Golden Age of Cataclysmic Variables and Related Objects | Italian Conference on Theoretical Computer Science, Palermo, Italy | 2023 |
| RNDr. Filip Blaschke, Ph.D. | Mechanization of scalar field theory | Yamagata University, Yamagata, Japan | 2023 |

| | | | |
|---|---|---|---|
| Dr. Roman Konoplya | The sound of the event horizon | 23th Gamow International Astronomical Conference, Odesa, Ukraine | 2023 |
| Dr. Roman Konoplya | Quasinormal ringing of regular black holes in asymptotically safe gravity: the importance of overtones | University of Catania, Catania, Italy | 2023 |

Note: Provide up to 10 examples.

Table 3.2.4 - The most important lectures by foreign scientists and other guests relevant to R&D&I at the evaluated unit during the evaluation period

| Name, surname and title(s) of the lecturer | Lecturer's employer at the time of the lecture | Invited lecture title | Year |
|---|---|---|---|
| Prof. Agnieszka Janiuk | Nicolaus Copernicus Astronomical Center, Warsaw, Poland | Accretion induced black hole spin up revised by numerical GR MHD simulations | 2020 |
| Prof. Remo Ruffini | University of Rome "La Sapienza", Rome, Italy | Derivation of the existence of the Black Holic Quantum from GRBs | 2021 |
| Dr. Ernesto Contreras | Universidad San Francisco de Quito, Quito, Ecuador | Gravitational cracking for relativistic polytropes: a novel scheme | 2021 |
| Prof. John Miller | University of Oxford, Oxford, Great Britain | Binary neutron star coalescence - after the merger | 2021 |
| Prof. Bobomurat Ahmedov | Ulugh Beg Astronomical Institute, Tashkent, Uzbekistan | Black holes and their main properties | 2022 |
| Prof. Maurizio Falanga | International Space Science Institute, Bern, Switzerland | Relativistic Iron Line Emission from the Neutron Star Low-Mass X-Ray Binary | 2022 |
| Prof. Luciano Rezzolla | Goethe University, Frankfurt, Germany | Public talk: M87* and Sgr A*: Imaging supermassive black holes | 2022 |
| Prof. Luigi Stella | National Institute for Astrophysics, Rome, Italy | Quasi Periodic Oscillations in X-ray Binaries | 2022 |
| Dr. Maciek Wielgus | Black Hole Initiative, Harvard University, and Center for Astrophysics, Harvard & Smithsonian, Cambridge, USA | Observing hot spots orbiting Sagittarius A* with ALMA | 2022 |
| Prof. Włodzimierz Kluzniak | Nicolaus Copernicus Astronomical Center, Warsaw, Poland | Current topics in accretion I | 2023 |

Note: Provide up to 10 examples.

Table 3.2.5 - Involvement in the evaluation of national/European research project/programme calls relevant to the R&D&I area at the unit during the evaluation period

| Name, surname and title(s) of the evaluated unit's staff member | Name of the project/programme call research | Name of the contracting authority/guarantor of the project/programme call | Year |
|---|---|---|---|
| Prof. RNDr. Zdeněk Stuchlík, CSc. | The ERC Advanced Grant (AdG) PE2 Panel | | 2022 |
| RNDr. Martin Kološ, Ph.D. | Czech Science Foundation (GAČR) P203 Panel | | 2023 |

Note: Provide up to 10 examples.

## RESEARCH PROJECTS

### 3.3 Research projects

The evaluated unit shall list at most 10 (considered most significant by the evaluated unit) research projects/activities (regardless of whether they are supported by public funds or based on contract research[22]) that it has implemented or participated in during the period of 2019–2023[23]. This should be done from the full list in annex tables (Table 3.3.1-3.3.2)[24], regarding particularly the results achieved or the application potential of the projects. The unit should also describe how the research projects contributed to the mission and purpose of the evaluated unit. If the evaluated unit has been a participant in listed project, it shall indicate which other entities were involved and describe its contribution to the project. The interdisciplinary aspects of the projects will also be commented on, along with any collaboration with other units of the evaluated HEI.

*Maximum 300 words per project.*

**Self-assessment:**

As the scientific activities of the IP focus on basic research, its project activities in the period 2020–2023 were primarily concentrated on projects supported by public funding, particularly those funded by the Czech Science Foundation (GAČR). During this period, the IP members implemented three GA ČR projects, with the institute participating as a partner in one of them.

The project GA19-03950S *Testing Strong Gravity by Black Holes*, a standard project with Dr. Roman Konoplya as the Principal Investigator (PI), was dedicated to studying the oscillatory states of black holes and other compact objects modelled within Einstein's theory of gravity and alternative gravity theories, as well as other aspects of physical processes in strong gravitational fields. The research primarily focused on quasi-normal modes of black hole oscillations, which play a crucial role in decoding gravitational waves observed by the LIGO and VIRGO (planned LISA) detectors. Additionally, related optical phenomena were studied to identify relevant signals for multi-messenger astronomy. This project yielded many significant results, which were published in prestigious journals, whereas four of them have been classified as Highly Cited Papers according to Web of Science. For its outstanding results (published during the project period in 66 papers in international peer-reviewed impact factor journals, according to Web of Science), the project was awarded by the President of the

[22] For the definition of contract research for the purposes of evaluation in the HE segments, see Article 2.2.1 of the Community Framework for State Aid for Research, Development and Innovation 2014/C 198/01.
[23] Regardless of whether the projects are completed or still ongoing, provided that at least part of the project was implemented during the evaluation period.
[24] The evaluated unit shall only fill tables that are relevant to it.

Czech Science Foundation (GAČR) as the best project completed in 2022 in the field of Natural Sciences.

The project GA23-07043S *Magnetosphere of Black Holes*, a standard project with Dr. Martin Kološ as the PI, began in 2023 and is dedicated to the systematic study of astrophysical processes in strong gravo-magnetic fields surrounding compact objects such as black holes, neutron stars, wormholes, and other black hole mimickers. The project integrates analytical and numerical modelling and compares the results with observational data from space observatories detecting X-ray emissions from systems containing compact objects. A particularly intriguing discovery, currently under detailed investigation, concerns the radiative back-reaction of electrically charged particles on their motion, leading to an unexpected effect known as "orbital widening."

The main objective of the project LTI17018 *Promotion and Development of International Scientific Cooperation in Relativistic Astrophysics and Preparation of X-ray Space Missions*, implemented within the Inter-Inform sub-programme with Doc. Gabriel Török as PI, was to support the participation of the Silesian University in Opava and the Astronomical Institute of the Academy of Sciences of the Czech Republic in international research and development programmes and in bilateral and multilateral research activities focused on relativistic astrophysics, preparation of X-ray space missions and other related issues. The project specialised in creating information, knowledge and infrastructure conditions for the participation of relevant Czech institutions in international activities in this field. In order to obtain and share information on opportunities for international scientific cooperation, it supported information meetings and networking events, active search for information on the promotion of international scientific cooperation. In order to create the necessary infrastructure and strengthen the institutional capacity for international scientific cooperation, it implemented education and training activities for scientists. Overall, the project intensified Czech participation in international activities in the field of relativistic astrophysics and X-ray space missions.

Main goal of the project LTC18058 *Neutron stars and pulsars* was the establishment of scientific group that worked in the field of neutron stars at the international level and participated in the COST Action CA16214 The multi-messenger physics and astrophysics of neutron stars. The project focused on development of new technique that would allow us to determine the properties of neutron stars in low-mass X-ray binaries that. The other main scientific goal was introduction of new model of pulsar spin-down that will be able to explain measured values of braking indexes. Particular attention in both goals was given to possible constraints on equations of state of dense nuclear matter. A possible impact of magnetic field and its configuration or evolution on the investigated problems was also discussed.

During the evaluation period 2019–2023, *specific research projects* were carried out at the Silesian University in Opava under the supervision of current members of the IP. These projects focused on addressing contemporary challenges in theoretical physics, astrophysics, and observational astrophysics. They were conceptually designed to actively involve students enrolled in doctoral study programmes — in 2019–2021, students were formally affiliated with the Faculty of Philosophy and Science in Opava under the programme Physics – Theoretical Physics and Astrophysics, and in 2022–2023, with the IP under the programme Theoretical Physics and Astrophysics. Students constituted the majority of the research teams, which were led by principal investigators — Prof. Zdeněk Stuchlík and Doc. Gabriel Török — and supported by senior researchers serving as academic supervisors. Over

the course of these projects, more than 50 papers were published in peer-reviewed impact factor journals in collaboration with doctoral students.

The project GX21-06825X *Accreting Black Holes in the New Era of Polarization X-ray Missions*, an excellent project led by Dr. Michal Dovčiak from the Astronomical Institute of the Czech Academy of Sciences as the PI, has been under implementation since 2022, with the IP participating as a partner. Prof. Marek Abramowicz serves as the leading person on behalf of the IP. The project focuses on astrophysical processes in accretion disks orbiting compact objects, associated optical phenomena, and their role in interpreting observational data from space satellites. It is closely linked to the preparation of the ATHENA and INXS projects. Additionally, it is expected that an ERC project will be developed in connection with this research.

We would also like to mention the projects LM2018112 & LM2023060 *Facility for Antiproton and Ion Research – Participation of the Czech Republic*. These projects ensure the Czech Republic's contribution to the FAIR infrastructure, mainly through detector development and experimental support. A key achievement was the design and optimization of GADAST detector modules by SUO, leading to the successful delivery and validation of 32 CsI(Tl) modules for SuperFRS experiments. Detector testing continued with site acceptance tests at HIL Warsaw University, confirming compliance with FAIR requirements. Additionally, simulations of GADAST were integrated into the ExpertRoot framework, supporting data analysis and further research. The projects also facilitated collaborative efforts, including detector R&D, beamtime preparation, and workshops on advanced detection techniques. The projects are led by Dr. Andrej Kugler from the Nuclear Physics Institute of the Czech Academy of Sciences as the PI, with the IP participating as a partner. Dr. Vratislav Chudoba serves as the leading person on behalf of the IP.

Moreover, we include the project LTT17003 – *Investigation of Baryonic Systems at FAIR International Research Facility*. This project focuses on nuclear structure studies at FAIR, particularly the limits of exotic isotopes. One major effort was the preparation of a revised proposal for experiment S487, aimed at investigating proton-rich isotopes such as 5Be, 6B, 7C, and 9N via multi-proton in-flight decays. The proposal, under the working title “Towards limits of nuclear structure by using a 9C beam,” was submitted and later accepted. The study aims to measure energy spectra, decay widths, and isospin symmetry properties of these exotic nuclei. Additionally, the project supported ongoing developments in silicon tracking detector technology for upcoming FAIR experiments.
One of the key activities of the project was also focused on relativistic astrophysics, particularly on accreting neutron stars in binary systems. The research explores the role of phase transitions in neutron stars and their potential observational consequences. Initial studies of quasi-periodic oscillations in X-ray spectra suggested that phase transitions alone could not fully account for the observed phenomena, which led to a shift in focus toward young radio pulsars. A new model was developed linking variations in pulsar spin-down rates to time-dependent changes in the moment of inertia, potentially driven by cooling-induced phase transitions. This research provides valuable insights into neutron star evolution and contributes to the broader understanding of dense matter physics. The project is led by Dr. Andrej Kugler from the Nuclear Physics Institute of the Czech Academy of Sciences as the PI, with the IP participating as a partner. Dr. Vratislav Chudoba serves as the leading person on behalf of the IP.

The project *CLAIRO* (Clear Air and Climate Adaptation in Ostrava and Other Cities) was of a special character, as it focused on applied physics and environmental studies. The project involved several

institutions, including the IP, with Doc. Miloš Zapletal as the leading person on behalf of IP. The project contributed new knowledge to improve the environment and optimize quality of life, primarily for the citizens of Ostrava and the wider region. It introduced innovative insights from a living lab and advanced technologies, helping to enhance air quality and climate adaptation strategies across the Silesian industrial agglomeration. The outcomes of this project are now being applied in environmental studies beyond just the Moravian-Silesian region, broadening its impact on air quality research and urban climate adaptation.

Finally, we include our participation in the project 4000132152 ESA PRODEX entitled *Hardware contribution to Chinese eXTP mission*, which is focused on technology transfer. The PRODEX Programme (Programme de Développement d'EXpériences scientifiques) is an optional ESA initiative primarily aimed at funding the development and construction of scientific instruments or experiments proposed by research institutions from ESA member states. On the Czech side, the participation is led by Prof. Vladimír Karas from the Astronomical Institute of the Czech Academy of Sciences as the Principal Investigator (PI), with the IP participating as a partner. Doc. Gabriel Török serves as the leading person on behalf of the IP. The goal of the working group is to develop the instrument hardware and data processing tools for instruments onboard eXTP (enhanced X-ray Timing and Polarimetry – a satellite X-ray observatory) and to refine instrument requirements in response to the evolving technological specifications of the eXTP mission.

Table 3.3.1 Projects supported by public funds

| In the role of beneficiary | | | | | | |
|---|---|---|---|---|---|---|
| Provider[25] | Project name | Support (in thousands CZK/EUR)[26] | | | | |
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| Czech Science Foundation (GAČR) | GA19-03950S *Testing strong gravity via black holes* | 0/0 | 2 918 CZK/ 115 108 EUR | 2 918 CZK/ 115 108 EUR | 0/0 | 0/0 |
| Czech Science Foundation (GAČR) | GA23-07043S *Black hole magnetosphere* | 0/0 | 0/0 | 0/0 | 0/0 | 2 272 CZK/ 89 625 EUR |
| Ministry of Education, Youth and Sports | *LTI17018 Promotion and Development of International Scientific Cooperation in Relativistic Astrophysics and Preparation of X-ray Space Missions* | 0/0 | 2 305 CZK/ 90 927 EUR | 0/0 | 0/0 | 0/0 |
| Ministry of Education, Youth and Sports | LTC18058 *Neutron stars and pulsars* | 0/0 | 1 075 CZK/ 42 406 EUR | 968 CZK/ 38 185 EUR | 0/0 | 0/0 |
| Ministry of Education, Youth and Sports | Specific research projects (research | 0/0 | 0/0 | 0/0 | 2 394 CZK/ 94 438 EUR | 1 976 CZK/ 77 949 EUR |

| | | | | | | |
|---|---|---|---|---|---|---|
| | carried out by students) | | | | | |
| Total | | 0/0 | **6 298 CZK/ 248 441 EUR** | **3 866 CZK/ 153 293 EUR** | **2 394 CZK/ 94 438 EUR** | **4 248 CZK/ 167 574 EUR** |
| In the role of another participant | | | | | | |
| Provider[27] | Project name | Support (in thousands CZK/EUR) | | | | |
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| Czech Science Foundation (GA ČR) | GX21-06825X *Accreting Black Holes in the new era of X-ray polarimetry missions* | 0/0 | 0/0 | 1 968 CZK/ 77 633 EUR | 1 968 CZK/ 77 633 EUR | 1 968 CZK/ 77 633 EUR |
| Ministry of Education, Youth and Sports | LM2018112 *Facility for Antiproton and Ion Research - participation of the Czech Republic* | 0/0 | 1 045 CZK/ 41 223 EUR | 866 CZK/ 34 162 EUR | 787 CZK/ 31 045 EUR | 0/0 |
| Ministry of Education, Youth and Sports | LM2023060 Facility for Antiproton and Ion Research - participation of the Czech Republic | 0/0 | 0/0 | 0/0 | 0/0 | 425 CZK/ 16 765 EUR |
| Ministry of Education, Youth and Sports | LTT17003 *Investigation of baryonic systems at FAIR international research facility* | 0/0 | 750 CZK/ 29 586 EUR | 750 CZK/ 29 586 EUR | 0/0 | 0/0 |
| Ministry of Education, Youth and Sports | *CLAIRO* | 0/0 | 0/0 | 2 045 CZK/ 80 671 EUR | 0/0 | 1 208 CZK/ 47 653 EUR |
| Ministry of Transport, and Ministry of Education, Youth and Sports | 4000132152 ESA PRODEX *Hardware contribution to Chinese eXTP mission* | | 34 CZK/ 1 342 EUR | 103 CZK/ 4 063 EUR | 88 CZK/ 3 471 EUR | 91 CZK/ 3 590 EUR |
| Total | | **0/0** | **1 829 CZK/ 72 151 EUR** | **5 732 CZK/ 226 114 EUR** | **2 843 CZK/ 112 150 EUR** | **3 692 CZK/ 145 641 EUR** |

Table 3.3.2 - Contract research activities

| Client[25] | Activity name | Revenue (in thousands CZK/EUR) | | | | |
|---|---|---|---|---|---|---|
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| None | None | 0 | 0 | 0 | 0 | 0 |
| Total | | | | | | |

Note: List and describe contract research activities with a revenue in a given calendar year, regardless of the amount of financial revenue.

## 3.4 Research results with existing or prospective impact on society

The evaluated unit shall briefly comment on a maximum of 10 (considered most significant by the evaluated unit) research results already applied or realistically heading towards application during the period of 2019–2023, based on the overview annex table 3.4.1 (it is recommended to indicate results with a link to projects listed in indicator 3.3). The evaluated unit must demonstrate in its description that the research results have led or will soon lead to positive impacts[26], on society (e.g. description of how the results are used by various users, the range of persons/institutions for which the result is relevant, measurable economic impacts, etc.). The evaluated entity shall indicate in its commentary whether the gender dimension is considered in these results and discuss the impacts of the results regarding sustainability.

*Maximum range 300 words/result.*

**Self-assessment:**

The research activities of the IP focus mainly (96%) on basic research in theoretical physics, which has an impact on society only in the long term. The strongest impact of this kind can be demonstrated by the Highly Cited Papers of the IP members that represent significant effects on the evolution of related disciplines of the basic research.

Along with these papers, we would also like to highlight a result with broader societal impact — the *academic book* [Ovalle, J., Casadio, R.; Beyond Einstein Gravity: The Minimal Geometric Deformation Approach in the Brane-World, Springer, 2020], based on research of the IP member Dr. Jorge Ovalle. Beyond its scientific contribution, the book plays an important role in education and science communication. It introduces the concept that additional spatial dimensions — as proposed in the brane-world model — may influence the predictions of general relativity, and presents the Minimal Geometric Deformation (MGD) method, a tool for solving modified Einstein equations with broader applications in gravitational theory. As an accessible and well-structured text, it can be adopted at universities worldwide and serves as a valuable resource for graduate-level teaching in theoretical physics. Through its clarity and pedagogical focus, the book helps to bring complex concepts of modern gravity closer to students and the wider academic community.

The IP members also initiated efforts to transfer their expertise in mathematical modeling of physical processes and large-scale data handling into applied sciences with an impact on society as well. The most significant collaboration in this regard is with the Faculty of Medicine at the University of Ostrava, where the IP contributes to the *application of astrophysical optical data processing methods to the analysis of medical observation data*. Some significant results in this field have already been

[25] If the client is from abroad, indicate in brackets the country of origin of the client.

[26] See Terms definition.

published in a paper by Dr. Jan Novotný and Doc. Petr Čermák [Martinů, J.; Novotný, J., Adámek, K., Čermák, P., et al.; A survey of feature detection methods for localization of plain sections of axial brain magnetic resonance imaging, Biomedical Signal Processing and Control, 82, 104611, 2023] and could have a major impact on patient diagnostics and medical imaging. In more detail, the paper focuses on a series of automated methods for localization, robustness, and comparison of MRI images, which can significantly accelerate the diagnostic process, thereby reducing the workload of medical personnel and shortening the time required for the identification of pathological changes. The research of these robust and precise methods for the registration (calibration) of MRI images across patients and their comparison with a brain atlas thus paves the way for "personalized" medicine, where it could be possible to monitor individual brain changes over time.

As for the transfer with impact on society, we can also mention the paper by Dr. Jan Novotný [Adámek, K., Novotný, J., Thiyagalingam, J., Armour, W.; Efficiency Near the Edge: Increasing the Energy Efficiency of FFTs on GPUs for Real-time Edge Computing, IEEE Access, 9, 18167, 2021] that demonstrates how to effectively utilize accelerated libraries, specifically the Fast Fourier Transform (FFT), in the current context, considering specific parameters and their reduction in operational frequency to decrease power consumption without compromising performance. *Optimizing FFT computation*, which is widely used in both scientific and industrial centres, for graphical processors in real-time edge computing can lead to a significant reduction in energy consumption. This, in turn, contributes to lowering operational costs and the carbon footprint of computing centres. Dr. Karel Adámek was the IP member during preparation of this paper; he now holds a leading position at the eResearch Centre of the University of Oxford.

Notable results include research on *methods for assessing atmospheric pollutants and their impact on various environmental components* (air, water, and soil), ecosystems, human health, and materials of cultural and historical monuments. The research also explores ecosystem services and sustainable environmental development, also studied within the CLAIRO project (Clear Air and Climate Adaptation in Ostrava and Other Cities) from 2018 to 2022, under the Urban Innovative Actions programme, which supports the most innovative projects in Europe. The research findings provide European cities with a methodology for decision-making on which plant species to cultivate in specific locations based on their ability to capture air pollutants. The project results were published in the paper by Doc. Miloš Zapletal [Kašpar, V., Zapletal, et al.; Unmanned aerial systems for modelling air pollution removal by urban greenery. Urban Forestry & Urban Greening, 78, 127757, 2022].

Finally, we can also mention a *study of the behaviour of the Earth's crust*, particularly the investigation of exogenous factors (tidal forces, cyclical changes in the temperature of the Earth's crust caused by the Sun, repeated changes in the atmospheric pressure of air, the transfer of wave energy of ocean water) in phenomena occurring within the Earth's crust. The main contribution was the demonstration that the behaviour of the Earth's crust can be described using the methods, techniques and experience of applied mechanics. The most important findings were published in the paper by Dr. Ivo Wandrol [Wandrol, I., Frydrýsek, K., Čepica, D.; Analysis of the Influence of Thermal Loading on the Behaviour of the Earth's Crust, Applied Sciences-Basel, 13, 4367, 2023. The results of this research could be applicable in seismology as additional earthquake precursors.

Table 3.4.1 - Overview of research results in the period under evaluation

| Type of result[27] | Year of application | Name |
|---|---|---|
| Academic book | 2020 | Ovalle, J., Casadio, R.; Beyond Einstein Gravity: The Minimal Geometric Deformation Approach in the Brane-World, Springer, 2020 |
| Research paper (impact journal) | 2023 | Martinů, J., Novotný, J., Adámek, K., Čermák, P., et al.; A survey of feature detection methods for localisation of plain sections of axial brain magnetic resonance imaging, Biomedical Signal Processing and Control, 82, 104611, 2023 |
| Research paper (impact journal) | 2021 | Adámek, K., Novotný, J., Thiyagalingam, J., Armour, W.; Efficiency Near the Edge: Increasing the Energy Efficiency of FFTs on GPUs for Real-time Edge Computing, IEEE Access, 9, 18167, 2021 |
| Research paper (impact journal) | 2022 | Kašpar, V., Zapletal, et at.; Unmanned aerial systems for modelling air pollution removal by urban greenery. Urban Forestry & Urban Greening, 78, 127757, 2022 |
| Research paper (impact journal) | 2023 | Wandrol, I., Frydrýsek, K., Čepica, D.; Analysis of the Influence of Thermal Loading on the Behaviour of the Earth's Crust, Applied Sciences-Basel, 13, 4367, 2023 |

Note 1: Please list and describe the results already applied in practice or heading towards application in practice with existing or prospective impact on the society (e.g. domestic or foreign patents, sold licenses, spin-offs, prototypes, varieties and breeds, methodologies, significant analyses, surveys, expert outputs for policymaking or other forms of non-publication outputs, etc.). Indirect results of research, development and creative activities with documented societal impact, e.g. expert activities, services to the public/government/scientific community, may also be reported.

## TRANSFER OF RESULTS INTO PRACTICE

### 3.5 Transfer of results into practice

The evaluated unit shall briefly describe its system for transferring results into practice. It shall also indicate up to five of the most typical users of its results, whether in the university environment or in the non-university application/corporate sphere, detailing how it collaborates with them and how it seeks out new users (using a maximum of five specific examples).

It will also indicate whether and how it commercialises R&D&I results (e.g. selling licences, setting up start-up or spin-off companies, etc.)[28], providing brief description of the commercialisation methods used. The effectiveness of the transfer of results and the commercialisation of R&D&I results will be described using a selection of results (max. five) listed in annex table (Table 3.4.1).[29]

Additionally, the evaluated unit shall briefly comment on the funds received during the period of 2019–2023 from non-public, non-grant sources (e.g. licences sold, spin-off revenues, donations, etc.). A full summary shall be provided in annex table (Table 3.5.1).

*Maximum 500 words plus 200 words for each provided example of finding a new user of results and commercialization.*

**Self-assessment:**

[27] Specify the specific type of result. Add rows as needed.
[28] In the case of military HEIs, their specific position is taken into account when evaluating the commercialisation/evaluation of R&D&I results.
[29] If the commercialisation of R&D&I results is carried out in this way.

Research activities of the IP focus mainly (96%) on basic research in theoretical physics with its application mainly in astrophysics and particle physics, which transfer to practice is usual in long term period, but cannot be directly specified once the results are obtained.

On the other hand, such studies surely provide new outputs in computer and information sciences, since new methods for handling with extremely large data systems, building of neural networks, and application of AI, are often required even for the theoretical research in theoretical physics. These can be transformed to the area of various applications that could have direct impact in practise. As an illustrative example, we can mention the paper by Dr. Jan Novotný [Martinů, J., Novotný, J., Adámek, K., Čermák, P., et al.; A survey of feature detection methods for localisation of plain sections of axial brain magnetic resonance imaging, Biomedical Signal Processing and Control, 82, 104611, 2023], where *the astrophysical optical data processing methods are applied to the analysis of medical observation data*. As mentioned in Sec. 3.4 (for which the paper is relevant as well) the paper is focused on a series of automated methods for localization, robustness, and comparison of MRI images, which can significantly accelerate the diagnostic process, thereby reducing the workload of medical personnel and shortening the time required for the identification of pathological changes. The research of these robust and precise methods for the registration (calibration) of MRI images across patients and their comparison with a brain atlas thus paves the way for "personalized" medicine, where it could be possible to monitor individual brain changes over time.

Moreover, we can also mention again the paper by Dr. Jan Novotný and Doc. Petr Čermák [Adámek, K., Novotný, J., Thiyagalingam, J., Armour, W.; Efficiency Near the Edge: Increasing the Energy Efficiency of FFTs on GPUs for Real-time Edge Computing, IEEE Access, 9, 18167, 2021] that demonstrates how to effectively utilize accelerated libraries, specifically the Fast Fourier Transform (FFT), in the current context, considering specific parameters and their reduction in operational frequency to decrease power consumption without compromising performance. *Optimizing FFT computation*, which is widely used in both scientific and industrial centres, for graphical processors in real-time edge computing can lead to a significant reduction in energy consumption. This, in turn, contributes to lowering operational costs and the carbon footprint of computing centres.

Table 3.5.1 - Summary of non-public revenues received during the period under evaluation

| Type of revenue | Revenue (in thousands CZK/EUR) | | | | |
|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 |
| None | 0 | 0 | 0 | 0 | 0 |
| Total | | | | | |

Note: Enter funds raised for R&D&I from non-public sources besides grants or contract research (e.g. licences sold, spin-off company revenues, donations, etc.) in the calendar year.

POPULARIZATION OF VAVAI

**3.6 The most important activities in the field of popularization of R&D&I and communication with the public**

The evaluated unit shall briefly describe its main activities related to the popularisation of R&D&I and communication with the public (e.g. popularisation lectures, citizen science initiatives, etc.) during the period of 2019–2023 and provide up to 10 examples that it considers the most significant.

*Maximum 500 words plus 200 words for each example given.*

**Self-assessment:**

The IP has a long-standing focus on the popularization of physics and its significance for other scientific disciplines and humanity as a whole.

Among the key activities of the IP in the popularization of R&D&I and communication with the public is the regular (weekly) *presentation of popularization and educational projections, primarily focused on Astronomy and Science in general, in the Unisphere (3D immersive planetarium)* [9].
The key aspect is that the IP focuses also on *preparation of such projections.* These projections are designed for both the general public and students and can be used not only at the Unisphere but also in most planetariums worldwide. As an example, we mention here our educational spherical projection Journey to the binary stars with AIDA made by Dr. Jan Novotný and Dr. Tomáš Gráf. This immersive projection explains fundamental concepts of binary systems in space for a broad audience. By using modern technology and the benefits of spherical projection, it enhances science popularization, allowing viewers to experience complex astronomical phenomena emotionally and visually, thus increasing public interest in science and fundamental research. This projection was distributed to more than 10 foreign institutions. One of the locally popular projections is The Sky Over Opava Through the Ages by Dr. Tomáš Gráf.

One of the most outstanding achievements in the popularization of R&D&I comes from *astrophotography*. Mgr. Petr Horálek has gained worldwide recognition for his astronomical images, which have been repeatedly featured as NASA's Astronomy Picture of the Day, a prestigious acknowledgment of excellence in the field.

The IP is also one of the *organizers of the Czech Astronomy Olympiad*, whose final rounds in the highest categories are held at the IP. The winners regularly participate in the international round of the Astronomy Olympiad, where they consistently achieve top rankings. The responsible person from the IP is Dr. Tomáš Gráf, who serves as a Member of the Central Committee of the Astronomical Olympiad. His involvement is supported by numerous publications on this topic, such as the paper in the national well-known journal [Gráf, T., Křížová, R., Vošmera, J.; 15. ročník Mezinárodní olympiády v astronomii a astrofyzice, Československý časopis pro fyziku, 72, 451, 2022], and a paper in an international peer-reviewed impact factor journal [Pavlík, V., Vošmera, J., Gráf, T., Křížová, R.; Fostering Innovation, Inclusion, and Diversity in Astronomy Education: The Czech Astronomy Olympiad Experience, Revista Mexicana de Astronomía y Astrofísica Serie de Conferencias (RMxAC), 57, 20, 2024], which, however, was not, unfortunately, published by the end of 2023.

Dr. Tomáš Gráf is also very active in the *popularization of astronomy on Czech TV and Radio*. We can highlight the regular series Astronomical Window for Czech Radio (Ostrava division), which features 52 episodes per year, each with a runtime of 5–7 minutes. Furthermore, Prof. Stuchlík was also several

times a member of the Round Table discussion show broadcast on the television channel TV Noe, dedicated to discussions about current research in astronomy together with the renowned Czech popularizer of astronomy, Dr. Jiří Grygar.

The IP is also involved in the nationwide annual events *Noc vědců (Night of Scientists)* and *Týden vědy a techniky AV ČR (The Week of Science of the Czech Academy of Sciences)*.

Twice a year, the IP organizes the *TGIAF (Thank God It's Astrophysics Friday)* event – a traditional half-day of lectures focused on astrophysics for high school students. Every week, the IP organizes the so-called *Brain Fitness* – an event intended for students who need help with physics or mathematics, wish to enhance their cognitive skills, or are interested in discussions about natural sciences.

Additionally, the IP contributes to the presentations of Silesian University in Opava at the annual *Colours of Ostrava festival* by delivering lectures popularizing physics and highlight the achievements of the IP.

During the evaluation period, the IP participated in the international project CREDO (Cosmic-Ray Extremely Distributed Observatory), which brings together 52 institutions from 20 countries, with the Institute of Nuclear Physics in Cracow serving as the coordinating institution. The project's main goal is to detect cosmic rays through a globally distributed network of detectors. CREDO focuses on detecting super-preshowers — large-scale cosmic-ray phenomena that may offer insights into dark matter, fundamental physical processes, and their potential impact on the environment. A unique aspect of the project is public engagement: through the CREDO Detector app, anyone can turn a smartphone into a basic cosmic-ray detector. The collected data are analysed at the Cyfronet AGH computing centre in Cracow. The IP has been actively involved in the project, receiving financial support specifically for the *promotion of CREDO and the popularization of related scientific activities*. These outreach efforts were carried out internationally, with a focus on engaging academic staff, students, and the general public. The responsible person for these activities at the IP was Dr. Arman Tursunov. In addition to outreach, the participation also aimed to expand the IP's research activities into the field of extremely energetic cosmic rays.

Another related activity is the *production of documentaries dedicated to the promotion of physics and science* through a study programme Multimedia Techniques. A notable example is the documentary Journey to the Solar Eclipse in Chile, created by students of the IP. The film was broadcast on Czech TV and won first place at the International Festival of Outdoor Films in Ostrava in 2022. It documents observation of the solar eclipse in 2020 in Chile, including a visit to the Atacama Observatory. Another example is the documentary Jurek Olek by Ing. Petr Jančárek, a film about one of the most important Polish artists, whose work is strongly influenced by descriptive geometry. We can also mention the documentaries by Mgr. Jan Mudra: Catheter-based Aortic Valve Replacement and Descending Aorta Replacement with a Hybrid Stent Graft, presented, e.g. at the 10th Congress of the Czech Society for Cardiovascular Surgery in Brno in 2022. Of particular importance is the documentary This Is Havel Speaking, Can You Hear Me? by Ing. Petr Jančárek, focusing on the final period of the life of Václav Havel, the former president of the Czech Republic. The film was first presented at Prague Castle and later screened worldwide.

## IMPLEMENTATION OF RECOMMENDATIONS

| **3.7 Implementation of the recommendations in Module 3** |
|---|
| The evaluated unit will briefly describe how it has implemented the recommendations for Module 3 from the previous evaluation period, if applicable.<br><br>*Maximum 1000 words.* |
| **Self-assessment:**<br><br>The only recommendation made by the Evaluation Committee during the previous evaluation period was to participate in the preparations for the space X-ray observatory ATHENA, which has since been successfully implemented. |

## A LIST OF SUPPORTING DOCUMENTS/LINKS FOR MODULE 3

| Document name | No. criteria | Location (link in HTML) |
|---|---|---|
| Research Centre for Theoretical Physics and Astrophysics (web) | 3.2 | https://ctp.physics.cz/ |
| Research Centre for Computational Physics and Data Processing (web) | 3.2 | https://astrocomp.physics.cz/science/ |
| Published Papers 2020 | 3.2 | https://www.slu.cz/phys/en/file/cul/75974b3d-5b1b-470f-a414-ca387615e7da |
| Published Papers 2021 | 3.2 | https://www.slu.cz/phys/en/file/cul/8c484ad4-bf20-47fb-ab3c-342d5a32366e |
| Published Papers 2022 | 3.2 | https://www.slu.cz/phys/en/file/cul/51d9deab-4a05-4b2d-8ccf-b68dcbc1c0e7 |
| Published Papers 2023 | 3.2 | https://www.slu.cz/phys/en/file/cul/f0354726-3a67-422f-939d-1a5d961ce07d |
| Highly Cited Papers | 3.2 | https://www.slu.cz/phys/en/file/cul/a5a1b10a-04bc-4611-a7bd-a830e2c06644 |
| RAGtime - workshop on black holes and neutron stars (2020 – 2023) (web) | 3.2 | https://indico.slu.cz/event/4/<br>https://indico.slu.cz/event/8/<br>https://indico.slu.cz/event/18/<br>https://indico.slu.cz/event/24/ |
| Unisphere (web) | 3.6 | https://unisfera.slu.cz/index_eng.php |