

# Josef Lazar

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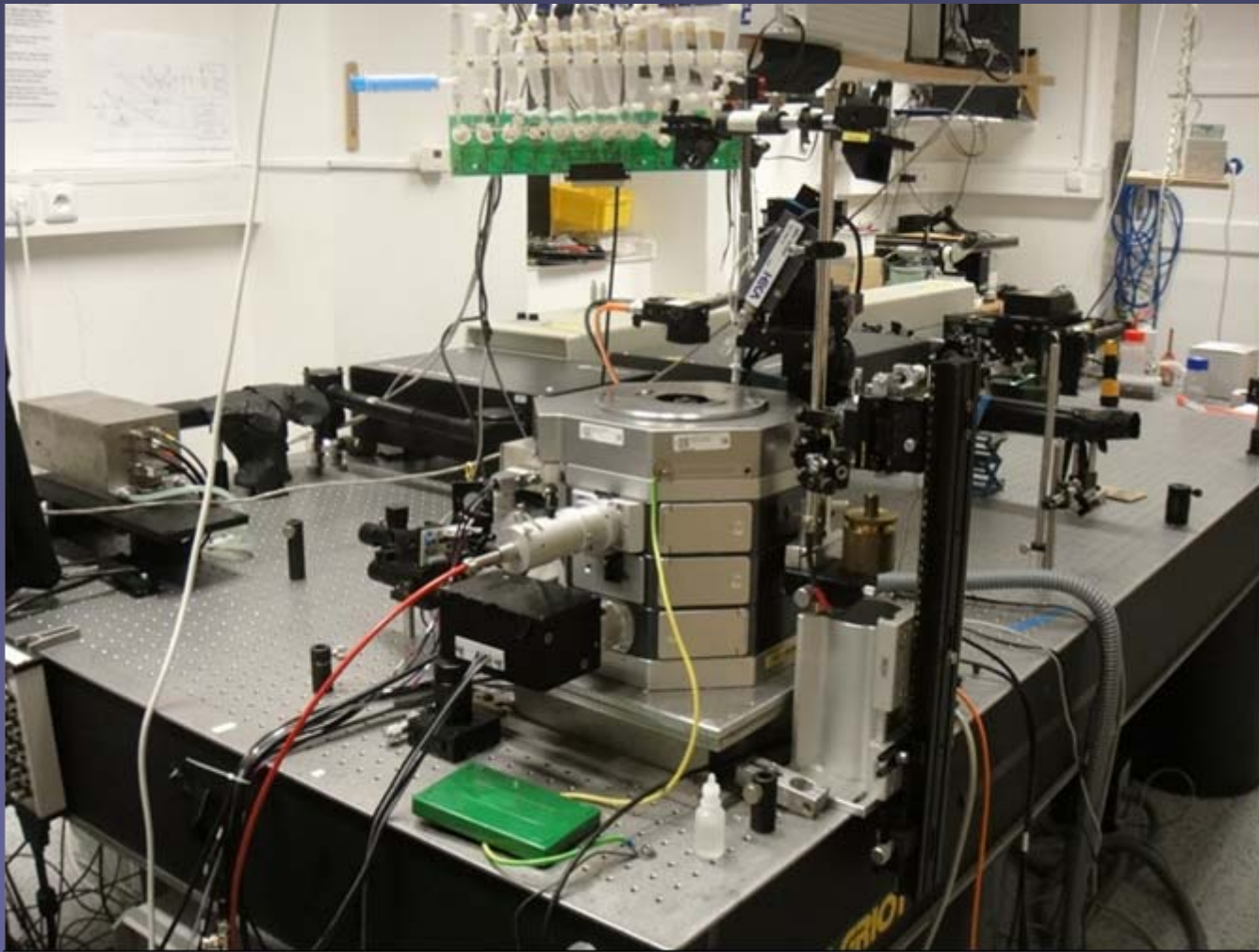
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# Two-photon polarization microscopy

ARTICLES

Nature Methods, 2011

## Two-photon polarization microscopy reveals protein structure and function

Josef Lazar<sup>1-4</sup>, Alexey Bondar<sup>1,2</sup>, Stepan Timr<sup>5</sup> & Stuart J Firestein<sup>4</sup>

- An optical microscopy method allowing sensitive imaging of changes in protein conformation or protein-protein interactions, in living cells and animals, using a SINGLE fluorescent protein
- Allows monitoring G-protein activation, changes in cell membrane voltage, other processes, often using existing constructs
- Can be combined with superresolution techniques, light sheet microscopy
- Explained here: <http://www.nh.cas.cz/people/lazar/2ppm/>



# Collaboration possibilities

## We can provide:

- Cutting edge optical imaging
- Customized optical experiments
- Combined (electro)physiology/imaging
- Two-photon polarization microscopy
- Mammalian cell culture
- Mathematical modeling (Matlab, Mathematica)
- Molecular dynamics simulations (collaboration with P. Jungwirth, I. Vattulainen)
- Expertise with GPCRs, G-proteins, neurotransmitter transporters

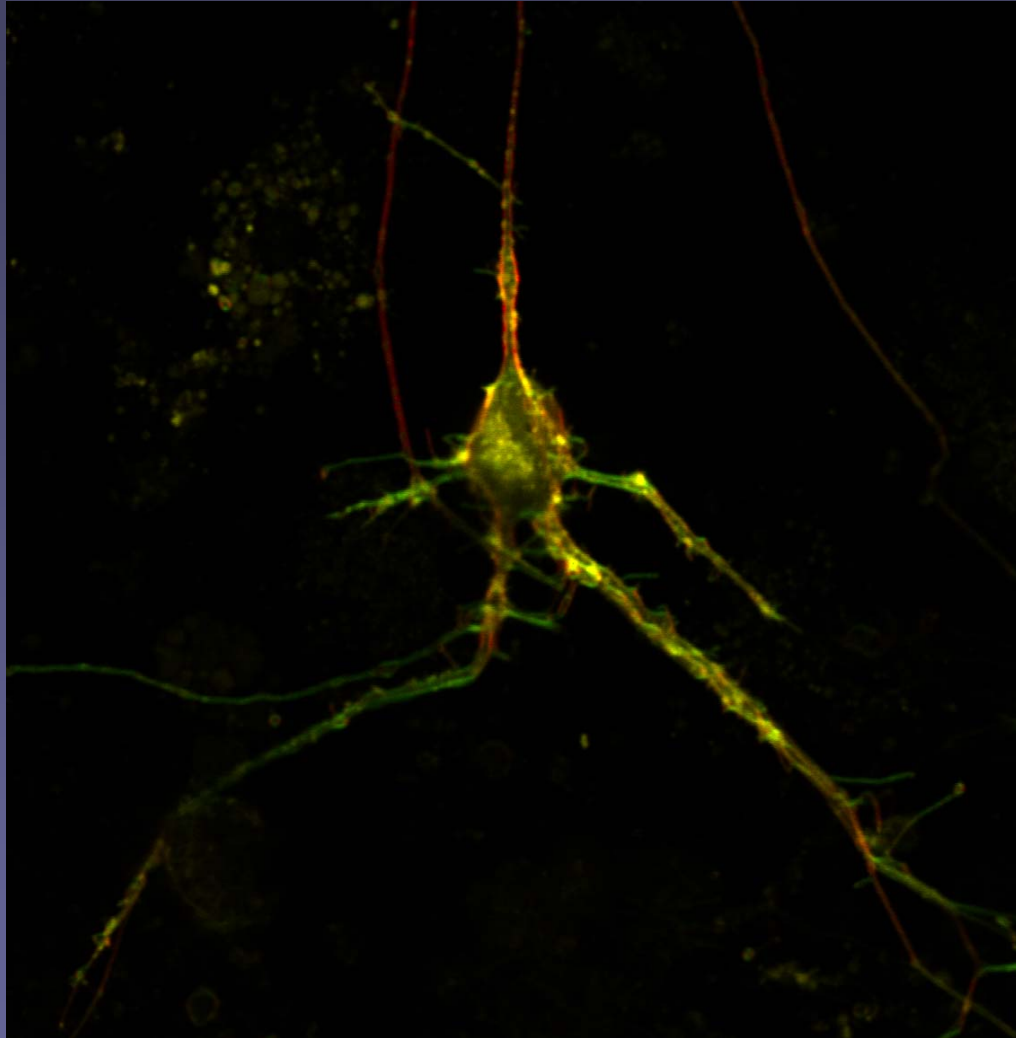
## We are looking for:

- Challenging imaging problems
- Expertise in animal models
- Expertise in non-linear optics

### **Themes 3b, 3c:**

- Neurodegenerative diseases
- Cancer
- Mental health
- Children's health
- Aging

# Thank you for your attention



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<http://www.nh.cas.cz/people/lazar/2ppm/>