# PETER BRAZDA

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## EDUCATION

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| University of Debrecen, Ph.D., Cell Biology and Biophysics | 9/2005 – 3/2015 |
| University of Debrecen, M.Sc., Biotechnology | 9/1999 – 7/2005 |

## RESEARCH EXPERIENCE

**Princess Máxima Center for Pediatric Oncology (PMC), Utrecht, The Netherlands**
*Postdoctoral research* with Professor Henk Stunnenberg     6/2019 – present
- Project 1: Transcriptome profiling in Pheochromocytoma at single cell level
- Project 2: Transcriptome profiling in pediatric AML at single cell level

**Radboud University, Institute for Molecular Life Sciences (RIMLS), Nijmegen, The Netherlands**
*Postdoctoral research* with Professor Henk Stunnenberg     6/2017 – 6/2019
- Project 1: Transcriptome profiling in Pheochromocytoma at single cell level
- Project 2: Transcriptomic analysis of early innate immune events after pertussis booster vaccination

**Delft University of Technology, Department of Bionanoscience, Delft, The Netherlands**
*Postdoctoral research* with Professor Nynke Dekker     4/2015 – 5/2017
- Project 1: Accessory helicase (UvrD) action in *E. coli* replication-transcription conflicts with single molecule microscopy
- Project 2: The dynamics of *E. coli* replication termination (Tus) with super-resolution microscopy and large population genomics

**German Cancer Research Center (DKFZ), Biophysics of Macromolecules Division, Heidelberg, Germany**
*Guest researcher* with Professor Jorg Langowski     4/2013 – 12/2014
- Several visits to test and carry out FCS, FCCS (fluorescence (cross-)correlation spectroscopy) and also single-plane illumination microscopy (SPIM-FCS) measurements on the setup designed and built by the group.

**University of Debrecen, Department of Biochemistry and Molecular Biology, Debrecen, Hungary**
*Graduate research* with Professor Laszlo Nagy and Dr Gyorgy Vamosi     9/2005 – 3/2015
- Thesis: Determination of dynamic properties of nuclear receptors
- Project 1: The mobility of retinoic acid receptor (RAR) during activation by fluorescence correlation spectroscopy (FCS)
- Project 2: The dynamic properties of retinoic-x receptor (RXR) during activation, chromatin association and coregulator binding as seen by single-plane illumination FCS (SPIM-FCS) and large population genomics (ChIP-seq)

- Project 3: The ligand-dependent dimerization (homo- and heterodimer) of RXR investigated by flow cytometry and single cell imaging

*Undergraduate research* with Professor Laszlo Nagy                                12/2002 – 9/2005
- Thesis: Investigation of a novel retinoid-x receptor antagonist ligand (Best presentation in Natural Sciences at the National Conference of Scientific Students' Association (OTDK))
- Project 1: The study of a novel ligand on the dimerization- and transactivation ability of RXR with transient transfection assay

**PUBLICATIONS:**   http://tiny.cc/dldh5y

## LEADERSHIP EXPERIENCE

- International Genetically Engineered Machines (iGEM), tutor for the Debrecen team 2010-Boston, 2011-Amsterdam
- Researchers' Night, organizer at the University of Debrecen, 2008, 2009, 2011, 2012
- South-East European (SEE) Science Festival, organizer of local events, 2013
- Association of Biologist Students of the University of Debrecen, president, 2007

## TEACHING ACTIVITIES

- <u>Practical</u> in Biochemistry and Molecular Biology for medical students (Uni. of Debr.)
- <u>Seminar</u> in Molecular Biology for medical students. (Uni. of Debr.)
- Co-tutory support of 2 undergraduate students and support for 7 more students (Uni. of Debr.)
- Co-tutory support of 2 undergraduate students (TU Delft, RIMLS)

## RESEARCH-RELATED SKILLS

**RNA**: isolation, RNA sequencing (bulk, single cell: CELseq2, 10x), scATACseq, RT-qPCR
**DNA**: isolation, molecular cloning, mutagenesis, chromatin IP
**NGS**: performing sequencing runs on Illumina (MiniSeq, Novaseq) platforms
**cell culturing**: cell-line related tasks, transfection, mammalian two-hybrid assay, bacterial strain engineering (recombination, transduction), processing of primary tissue samples
**analysis**: flow cytometry, confocal microscopy (imaging, FCS (fluorescence (cross)correlation spectroscopy, FRAP, FRET), fluorescence microscopy (wide field, super-resolution), single cell RNAseq data analysis, R-language