



ADMISSION TO DOCTORAL STUDIES

Session September 2022

Field of doctoral studies:

Doctoral supervisor: Tudor C. Badea, MD, MA, PhD, CS II

TOPICS FOR THE ADMISSION TO DOCTORAL STUDIES

TOPIC 1: Anatomy, Physiology and Development of Neuronal Circuits

Content / Main aspects to be considered

- 1) Morphologic and molecular comparative anatomy of the visual system in human and genetic animal models.**
- 2) Embryonic and postnatal development of retinal neurons and the visual system.**
- 3) Molecular mechanisms for development and function of visual systems.**
- 4) Pathological Mechanisms and therapeutic opportunities in retinal diseases.**

Recommended bibliography:

- 1) Neuroscience 6th edition - Editors: Purves, Augustine, Fitzpatrick, Hall, LaMantia, Mooney, Platt, and White, 2017, Sinauer Associates/Oxford University Press, ISBN-13: 978-1605353807
- 2) Manipulating the Mouse Embryo: A Laboratory Manual, Fourth Edition - Edited by R. Behringer, M. Gertsenstein, KV Nagy, A Nagy - 2014 - CSHL Press - ISBN 978-1-936113-01-9
- 3) The Retina: An Approachable Part of the Brain, Revised 2nd Edition - John Dowling - 2012 - Belknap / Harvard University Press ISBN: 0674061543
- 4) The first steps in seeing - Robert W. Rodieck - 1998 - Sinauer Associates, Inc. ISBN: 0878937579
- 5) Webvision: The Organization of the Retina and Visual System
<https://webvision.med.utah.edu/>
- 6) Molecular Cloning A Laboratory Manual (MR. Green and Joseph Sambrook) : 2012 Cold Spring Harbor Laboratory Press ISBN: 978-1-936113-42-2 7)
- 7) Ophthalmology 5th edition Myron Yanoff, Jay Duker 2018, Elsevier, ISBN: eBook 9780323528214; Hardcover: 9780323528191

Prerequisites / Remarks:

License Diploma in Medicine, Biology, Physics or Chemistry

TOPIC 2: Classification physiology and pathology of retinal cell types

Content / Main aspects to be considered

- 1) Molecular Markers with biological and physiological relevance to the retina
- 2) Experimental Animal Models in the study of retina physiology and pathology
- 3) Involvement of neuronal metabolism in visual function
- 4) Pathological Mechanisms and therapeutic opportunities in retinal diseases.

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- 1) Neuroscience 6th edition - Editors: Purves, Augustine, Fitzpatrick, Hall, LaMantia, Mooney, Platt, and White, 2017, Sinauer Associates/Oxford University Press, ISBN-13: 978-1605353807
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Doctoral supervisor,

Prof. dr. Tudor C. Badea, MD, MA, PhD, CS II

Signature



Coordinator of the field of doctoral studies,

Prof. dr. IFTENI Petru

Signature

