

CURRICULUM VITAE

Mladen-Roko Rasin
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EDUCATION/TRAINING

M.D., University of Zagreb School of Medicine, Zagreb, Croatia	1995-2002
Ph.D., University of Zagreb School of Natural Sciences, Neurobiology, Zagreb, Croatia	2003-2006
Predoctoral and postdoctoral training, Yale University, Neurobiology, New Haven, USA	2003-2009

POSITIONS AND RESEARCH EXPERIENCE

Medical student/Research assistant with Dr. Ivica Kostovic Neurobiology, University of Zagreb School of Medicine, Zagreb, Croatia	1996-2003
Visiting scientist with Dr. Tamas Freund Neurobiology, Institute of Experimental Medicine, Budapest, Hungary	2002-2003
Graduate student with Dr. Nenad Sestan Neurobiology, Yale University School of Medicine, New Haven, CT	2003-2006
Postdoctoral fellow with Dr. Nenad Sestan Neurobiology, Yale University, School of Medicine, New Haven, CT	2007-2009
Associate research scientist Neurobiology, Yale University, School of Medicine, New Haven, CT	2009
Assistant professor Neuroscience and Cell Biology, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ	10/2009-present

TEACHING EXPERIENCE

Teaching Assistant for medical students "Human Anatomy" University of Zagreb School of Medicine	1999-2000
Teacher/Organizer of IBRO/FENS summer school for graduate students and postdocs "Development and Plasticity of the Human Cerebral Cortex" University of Zagreb School of Medicine, Croatian Institute for Brain Research	2005
Organizer of symposium and workshop for graduate students and postdocs "Neuroimaging of Developmental Disorders" University of Zagreb School of Medicine, Croatian Institute for Brain Research	2008
Teaching Assistant for medical and graduate students "Structural and Functional Organization of the Human Nervous System" Yale University School of Medicine	2004-2009
Lecturer for graduate students UMDNJ-Robert Wood Johnson Medical School/Rutgers graduate program	2009-present
"Stem Cell Biology & Bioengineering course" Rutgers University/UMDNJ-Robert Wood Johnson Medical school graduate program Lecturer	2010-present
"Neuroscience" course UMDNJ-Robert Wood Johnson Medical School PA and Masters program Lecturer	2011-present
"Neuron, Brain and Behavior" course UMDNJ-Robert Wood Johnson Medical School M.D. and M.d./Ph.D. program Lecturer and teacher for jigsaws and neuroanatomy lab	2011-present

HONORS and AWARDS

1998	Chancellor's Award for Excellence, University of Zagreb, Croatia
2002	Short term fellowship within the Central and Eastern European region
2007	Postdoctoral mentored fellowship from "Autism speaks"
2009	K99 NIH Pathway to independence (PI) award
2011/2012/2014	nominated for Master Educators Guild by Graduate and Medical schools
2013	nominated for GSBS at RWJMS excellence in teaching award

MENTORING

Post Doctoral Fellows:

Althea Stillman, 01/2010-10/2012

- winner of INSPIRE fellowship; next position: Dreyfus lab

Barbara Viljetic, visiting postdoctoral fellow, 2012

- next position: School of Medicine, University of Osijek, Croatia

Pre Doctoral Students:

Kevin Thompson, 01/2010-12/2013

-obtained Ph.D.

- winner: NSF IGERT Stem Cell fellowship, TA fellowship

Erik M Deboer, 04/2010-12/2013

-obtained Ph.D.

- winner: best poster presentation, TA fellowship, Bevier fellowship

Aditi Dubey, 10/2010-7/2012

- qualified for thesis; next position: Copeland lab

Jennifer Kim, M.S. student, 2012

- defended 04/2012; next position: MERCK

Johannes Adomako-Mensah, M.D. student, 2012

- co-PI with Dr. Sestan for research thesis defended at Yale University

Matthew Kraushar, MD/PhD student 07/2012- present

Undergraduate Students:

Frances Cheng, 2005-2007

-winner of Yale undergraduate fellowship

joined M.D./Ph.D. program at Vanderbilt University

Tanya Marton, 2005-2008

-winner of HHMI and AMGEN fellowships for undergraduate

joined Ph.D. program at Johns Hopkins University

Kristina Sakers, 2011-2012

- winner: best poster presentation, Aresty grant, nominated for best poster of the year for Rutgers University; next position: Lombroso lab, Yale University

Miguel Paredes, high school student, summers of 2011 and 2012

- winner: best scientific work awards on local and international competitions; next position: Yale college

Marina Dutra-Clarke, 2011-2013

winner: best poster presentation, Aresty small grant; next position: Breunig lab, Cedars Sainai/UCLA

Ricardo Azevedo, 2012-present

- RA Aresty, Aresty small grant, Summer school at Rockefeller

Justin Marson, 2012-present

- winner: Aresty small grant, summer school Mt. Sainai, SAS Honors program

Sonia Sandhu, 2011-present

- winner: 2nd place best poster presentation, best poster presentation, RA Aresty

Katarina Yaros, 2011-present

- winner: Aresty small grant, nominated for best poster of the year for Rutgers University

Sagara Wijeratne, 2011-present

- winner: 2nd place best poster presentation, RA Aresty

Kevin Titus, 2013-present

- winner: Aresty summer school, Aresty small grant

Extramural undergraduate students/post-bac/lab tech:

Ripal Patel, lab tech, 2010

- next position: medical student, RWJMS

Victoria DiBona, lab tech and partially with Dr. Zhang, 2010-2011

- next position: Ph.D. student, RWJMS/Rutgers

Suzan Harris, lab tech partially with Dr. Schwander, 2011-2012

- next position: Schwander lab, Rutgers

Yuze Shang, lab tech partially with Drs. Matisse and DiCicco-Bloom, 2012-2013

- next position: David Clapham, HHMI, Harvard

Mark W. Springel, SURP undergraduate student, 2011

- next position: Lehtinen lab, Harvard University

Taylor Vega, RiSE student, Rutgers, 2012

- currently student at Berkeley, CA

Jose Zhagany, RiSE student, Rutgers, 2011

- currently student at SUNY, NY

Participation on Ph.D. committees for other students:

Sungtae Doh, 2010

Gum Hwa Lee, 2010-2012

Gerard Limerick, 2012-present

Maryann Poku, 2012-present

Ying Li, 2013-present

Chen Liang, 2013-present

Participation on other committees for students:

Yash S. Suthar, 2011

Khushboo Baldev, 2012

SERVICE ON GRADUATE SCHOOL COMMITTEES:

2010 - present Rutgers-RWJMS/RU-RWJMS Neuroscience Program Graduate School admissions committee
2010 - present Rutgers-RWJMS/RU-RWJMS/Princeton M.D./Ph.D. Graduate School admissions committee

SERVICE ON NATIONAL GRANT REVIEW PANELS, STUDY SECTIONS, COMMITTEES:

2012 NIH/NINDS NST-2 K99/R00 Study Section
2012 NIH/NINDS NST-2 MD/PhD Study Section

RESEARCH SUPPORT

Ongoing support:

A. Principal Investigator:

1. R01, NS075367, NIH/NINDS, Role of first neocortical RNA-operon in specification of neocortical projection neurons, 08/01/2011-07/31/2016
for 2011: \$330,550
for 2012: \$314,250
for 21013:\$329,307
2. R00, NS064303, NIH/NINDS, Molecular control of corticospinal system formation by intermediate targets, 01/01/2010-12/31/2012
for 2010: \$248,999
for 2011: \$246,001
for 2012: \$246,227

NOTE: the R00 award does not have renewal option, but it is expected to obtain an R01 during the funding period, which was achieved.

B. Co-Investigator:

1. NIMH, MH095722, "Summer undergraduate research program grant", 07/01/2013-06/30/2018
Completed Research Support

Completed support:

2002-2003 Short term research fellowship within the Central and Eastern European region
IBRO-CEER

Mentor: Tamas Freund, Institute of Experimental Medicine, Hungary
Subcellular expression sites of ion channels in cortical projection neurons

2007 Postdoctoral fellowship 01/01/2007-12/31/2008
Autism Speaks National Alliance for Autism Research
Mentor: Nenad Sestan, Yale University
Role of Cell Adhesion Molecule in Cortical Minicolumns

2009 Postdoctoral Mentored Phase of K99/R00 03/01/2009-10/02/2009
NIH/NINDS
Mentor: Nenad Sestan, Yale University
Co-mentor: Pasko Rakic, Yale University
Molecular Control of Corticospinal System Formation by Intermediate Targets

PROFESSIONAL SOCIETIES

Society for Neuroscience
International Brain Research Organization
Croatian Society for Neuroscience
Federation of European Neuroscience Societies

PRESENTATIONS

IBRO Summer school, Hungary	2000
IBRO Summer school, Hungary	2001
European stereology course, Croatia	2001
Club Neurobiology, Yale University	2005
Neurobiology Postdoc Network, Yale University	2005 & 2006
Human genetics journal club, Stanford University	2006
Seminar, EMBO Installation grant, Duke University	2007
RNA Club, Rutgers University	2009
Seminar for M.D./Ph.D. students, UMDNJ-Robert Wood Johnson Medical School	2010
Seminar for summer program students, UMDNJ-Robert Wood Johnson Medical School	2010
Invited talk at Child Health Institute of New Jersey	2014

PUBLICATIONS

1. DeBoer EM, Azevedo R, Vega T, Brodtkin J, Akamatsu W, Okano H, Wagner G, Rasin MR (2014) Prenatal deletion of the RNA binding protein HuD disrupts postnatal cortical circuit maturation and behavior. *J. Neuroscience*, In press
2. Deboer, E.M., Kraushar, M.L., Hart, R.P., Rasin, M.R. (2013). Post-transcriptional regulatory elements and spatiotemporal specification of neocortical stem cells and projection neurons. *Neuroscience*. 248C:499-528.
+ from the work on this paper our picture was selected for the Cover page
3. Kwan KY, Lam MMS, Johnson MB, Dube U, Shim S, Rasin MR, Sousa AMM, Fertuzinhos S, Chen JG, Arellano JI, Chan DW, Pletikos M, Vasung L, Rowitch DH, Huang EJ, Schwartz ML, Willemsen R, Oostra BA, Rakic P, Heffer M, Kostovic I, Judas M, Sestan N (2012). Species-Dependent Posttranscriptional Regulation of NOS1 by FMRP in the Developing Cerebral Cortex. *Cell*. 149:899-911.
4. Petanjek, Z., Judas, M., Simic, G., Rasin, M.R., Uylings, H.B.M., Rakic P., Kostovic I. (2011). Extraordinary neoteny of synaptic spines in the human prefrontal cortex. *PNAS USA*, 108(32):13281-6.
5. Rasin, M.R., Darmopil, S., Petanjek, Z., Tomić-Mahečić, T., Mohammed, A.H., Bogdanovic, N. (2011). Effect of environmental enrichment on morphology of deep layer III and layer V pyramidal cells of occipital cortex in oldest-old rat: A quantitative Golgi Cox study. *Coll. Antr.*, 35 Suppl 1:253-8.
6. Thompson K., DiBona V.L., Dubey A., Crockett D.P., Rasin M.R. (2010). Acute adaptive responses of central sensorimotor neurons after spinal cord injury. *Transl. Neurosci*. 1:268-278.
7. Fertuzinhos S, Krsnik Z, Kawasawa YI, Rasin MR, Kwan KY, Chen JG, Judas M, Hayashi M, Sestan N. (2009). Selective depletion of molecularly defined cortical interneurons in

- human holoprosencephaly with severe striatal hypoplasia. Cerebral Cortex. 19(9):2196-2207.*
8. Stillman, A., Krsnik, Z., Sun, J., Rasin, M.R., State, M., Sestan, N., Louvi, A. (2009). *Developmentally regulated and evolutionarily conserved expression of SLITRK1 in brain circuits implicated in Tourette syndrome. J Comp Neurol, 513:21-37.*
 9. Rasin, M.R., Gazula, V.R., Breunig, J.B., Kwan, K.Y., Li, H.S., Liu-Chen, S., Jan, Y.N., Rakic, P., Sestan, N. (2007). *Numb and Numbl are required for maintenance of cadherin based adhesion and polarity of neural progenitors. Nature Neurosci, 10:819-827.*
 10. Brandt, N., Franke, K., Rasin, M.R., Baumgart, J., Vogt, J., Khrulev, S., Hassel, B., Pohl, E.E., Sestan, N., Nitsch, R., Schumacher, S. (2007). *The neural EGF family member CALEB/NGC mediates dendritic tree and spine complexity. EMBO J, 26:2371-2386.*
 11. Kuo, C.T., Mirzadeh, Z., Soriano-Navarro, M., Rasin, M.R., Wang, D., Shen, J., Sestan, N., Garcia-Verdugo, J., Alvarez-Buylla, A., Jan, L.Y., Jan, Y.N. (2006). *Postnatal deletion of Numb/Numbl like reveals repair and remodeling capacity in the subventricular neurogenic niche. Cell, 127:1253-1264.*
 12. Smith, K.M., Ohkubo, Y., Maragnoli, M.E., Rasin, M.R., Schwartz, M.L., Sestan, N., Vaccarino, F.M. (2006). *Midline radial glia translocation and corpus callosum formation require Fgf signaling. Nature Neurosci, 9:787-797.*
 13. Chen, J.G. *, Rasin, M.R. *, Kwan, K.Y., Sestan, N. (2005). *Zfp312 is required for subcortical projections and dendritic morphology of deep layer pyramidal neurons of the cerebral cortex. PNAS USA, 102:17792-17797. (* co-first coauthors)*
 14. Abelson, J.F., Kwan, K.Y., O'roak, B.J., Baek, D.Y., Stillman, A.A., Morgan, T.M., Mathews, C.A., Pauls, D.L., Rasin, M.R., Gunel, M., Davis, N.R., Ercan-Sencicek, A.G., Guez, D.H., Spertus, J.A., Leckman, J.F., Dure, L.S. 4th, Kurlan, R., Singer, H.S., Gilbert, D.L., Farhi, A., Louvi, A., Lifton, R.P., Sestan, N., State, M.W. (2005). *Sequence variants in SLITRK1 are associated with Tourette's syndrome. Science, 310:317-320.*
 15. Judas, M., Jovanov-Milosevic, N., Rasin, M.R., Heffer-Lauc, M., Kostovic, I. (2003). *Complex patterns and simple architects: molecular guidance cues for developing axonal pathways in the telencephalon. Prog Mol Subcell Biol, 32:1-32.*
 16. Judas, M., Rasin, M.R., Kruslin, B., Kostovic, K., Jukic, D., Petanjek, Z., Kostovic, I. (2003). *Dendritic overgrowth and alterations in laminar phenotypes of neocortical neurons in the newborn with semilobar holoprosencephaly. Brain Dev, 25:32-39.*
 17. Vuksic, M., Petanjek, Z., Rasin, M.R., Kostovic, I. (2002). *Perinatal growth of layer III pyramids in Down syndrome. Pediatr Neurol, 27:36-38.*
 18. Kostovic, I., Rasin, M.R., Petanjek, Z., Judas, M. (2002). *Morphological characteristics of the cells in the subcallosal zone (Nucleus Septohippocampalis) of the human fetus. Neuroembryology, 1:97-104.*
 19. Petanjek, Z., Rasin, M.R., Darmopil, S., Jovanov, N., Ivkic, G. (1998). *Morphology of layer V pyramidal neurons in area 9 of the human prefrontal cortex in adulthood and during aging. A quantitative rapid Golgi study. Period Biol, 102:411-419.*
 20. Petanjek, Z., Rasin, M.R., Jovanov, N., Krsnik, Z. (1997). *Magnopyramidal neurons in the area 9 of the human prefrontal cortex. A quantitative Golgi study. Period Biol, 100:221-230.*

- A. Books, Monographs and Chapters
1. **Authors names (Last, First; Bold CV author); Chapter # and Title; In: Book Title (Textbook), # Edition; Editor; page numbers; Publisher, city, state; year**
- B. Patents Held
1. *Title, U.S. Patent Number, Date of Issue, Inventors*
- C. Other Articles (Reviews, Editorials, etc.) In Journals; Chapters; Books; other Professional Communications

DeBoer EM, Rasin MR (2012). Nucleoside Analog Labeling of Neural Stem Cells and Their Progeny. Methods in Molecular Biology. 1018:21-37.

- D. Abstracts
1. *Authors names (Last, First); Title of abstract; Presented at (Name of Meeting), year; Abstract # or Page #*
2.
- E. Reports

CONFERENCE PRESENTATIONS:

Kraushar, M.L., Wijeratne, H.R.S., Yaros, K., Arikala, H., Sandhu, S., Titus, K., Krsnik, Z., Kostovic, I., Rasin, M.R. Transient intrauterine ischemia during mid-neurogenesis disrupts neocortical development and behavior associated with neurodevelopmental disorders. Wiring the Brain Conference, Cold Spring Harbor Laboratory, (2013).

DeBoer, E.M., Rasin, M.R. NT3 mediates the Isoform-Specific Role of Elavl4 (HuD) in Murine Neocortical Neural Stem Cell Differentiation and Proliferation. Gordon Conference " Neurotrophic factors, (2013)

Sandhu, S., Kraushar, M., Wijeratne, S., Rasin, M.R. Mid-Neurogenic Transient Intrauterine Ischemia Results In Postnatal Abnormalities in Neocortical Circuit Elements. 7th Annual Undergraduate Symposium at William Paterson University (2013)

Titus, K., Kraushar, M.L., Yaros, K., Arikala, H., Rasin, M.R. "Transient intrauterine ischemia during mid-neurogenesis disrupts neocortical development", Aresty Summer Science Program poster session, Rutgers University (2013).

Arikala, H., Dutra-Clarke, M., Wijeratne, H.R.S., Kraushar, M.L., Rasin, M.R. (2013) MIWI in neocortical development and in transient intrauterine ischemia, Aresty Research Symposium; New Brunswick, NJ.

Arikala, H., Dutra-Clarke, M., Wijeratne, H.R.S., Kraushar, M.L., Rasin, M.R. Role of PIWI-like protein Miwi in regulation of neocortical development and radial glia self-renewal, William Paterson University Research Symposium (2013).

Sandhu, S., Kraushar, M.L., Wijeratne, H.R.S., Rasin, M.R. Transient intrauterine ischemia disrupts neuronal morphology, William Paterson University Research Symposium (2013).

Yaros, K., Kraushar, M.L., Wijeratne, H.R.S., Rasin, M.R. *Abnormal differentiation of projection neurons after transient intrauterine ischemia, William Paterson University Research Symposium (2013).*

Agrawal, D., Thompson, K., Rasin, M.R. *Neocortical Neural Stem Cell Cycle is Regulated by RNA Binding Protein, HuR at Rutgers (2013).*

Agrawal, D., Thompson, K., Rasin, M.R. *Cell cycle in the Developing Neocortex. William Patterson University (2013).*

Stillman, A.; Deboer, E.; Rasin, M-R. *Timed splicing of HuD is a determining factor in progressive neocortical neurogenesis. SFN (2012).*

Crockett, D. P.; Baldev, K. P.; Patel, K. K.; Bhavsar, R. R.; Dibona, V. L.; Rasin, M. R.; Zhang, H. *Structural and molecular adaptations induced by traumatic brain injury (TBI) in mice. SFN (2012)*

Yaros, K., Kraushar, M.L., Wijeratne, H.R.S., Viljetic, B., Rasin, M.R. *eEF2 phosphorylation and FMRP translation as a molecular signature of intrauterine ischemia in a novel mouse model of neurodevelopmental disorders and human fetuses. Aresty Research Symposium, Rutgers University (2013).*

Yaros, K., Kraushar, M.L., Wijeratne, H.R.S., Viljetic, B., Rasin, M.R. *Abnormal differentiation of projection neurons after transient intrauterine ischemia. 7th Annual Undergraduate Symposium at William Paterson University, (2013)*

Yaros, K., Dubey, A., Thompson, K., DiBona, V.L., Crockett, D.P., Rasin, M.R. *EIF4E phosphorylation and protein expression promoted by curcumin after spinal cord injury. Aresty Research Symposium, Rutgers University (2012).*

Kraushar, M.L., Wijeratne, H.R.S., McGowan, H., Sandhu, S., Dutra-Clarke, M., Viljetic, B., Rasin, M.R. *Mid-gestation transient intrauterine ischemia disrupts postnatal neocortical development associated with multiple neurodevelopmental disorders, Brain Health Institute Symposium; Piscataway, (2012)..*

Wijeratne, H.R.S., Sandhu, S., Kraushar, M.L., Rasin, M.R. *Mid-gestation transient intrauterine ischemia dysregulates postnatal neocortical development of projection neurons and expression of FMRP and nNOS, Aresty Research Symposium; New Brunswick, (2012).*

Wijeratne, H.R.S., Sandhu, S., Kraushar, M.L., Rasin, M.R. *Postnatal FMRP expression and development of neocortical projection neurons are interrupted at mid-gestation by transient intrauterine ischemia, William Paterson University Research Symposium; Wayne, (2012).*

Kraushar, M.L., Wijeratne, H.R.S., McGowan, H., Sandhu, S., Dutra-Clarke, M., Viljetic, B., Rasin, M.R. *Transient intrauterine ischemia dysregulates functional gene expression in neocortical development and neurological disorders, Robert Wood Johnson Medical School, MD/PhD symposium (2012).*

Wijeratne, H.R.S., Sandhu, S., Kraushar, M.L., Rasin, M.R. *Transient intrauterine ischemia at mid-gestation disrupts FMRP and differentiation of neocortical projection neurons postnatally, Molecular Biology & Biochemistry Undergraduate Research Symposium; Piscataway, (2012).*

Dutra-Clarke, M., Stillman, A., DeBoer, E., McGowan, H., Rasin, M.R. *Piwilike1 Required for Proper Migration of Specific Subpopulation of Neocortical Neurons. William Patterson Undergraduate Research Symposium (2012).*

DeBoer, E., Stillman, A., Akamatsu, H., Okano, H., Rasin, M.R. *HuD isoform-specific control of neocortical neural stem cell differentiation. SFN (2011).*

Dubey, A., Thompson, K., DiBona, V.L., Rasin, M.R., Crockett, D.P. *Adaptive cortical responses to spinal cord injury in the mouse in vivo. SFN (2011).*

Crockett, D.P., Suthar, Y. S., Doshi, I.D., Rasin, M.R. *Adaptive neocortical responses to traumatic brain injury (TBI) in the mouse. SFN (2011).*

Vega, T., DeBoer, E., Rasin, M.R., Wagner, G. *The Behavioral and Histological Consequences of the Intrauterine Silencing of HuD in an Adult Mouse Model. RISE summer program poster presentation (2012)*

Dutra-Clarke, M., Stillman, A., Rasin, M.R. *Piwil-1 protein is required for proper migration of early born neocortical neurons. 66th Annual Eastern Colleges Science Conference (2011)*

Sakers, K., Springel, M.W., Thompson, K., Rasin, M.R. *EIF2AK4 is required for differentiation of deep neocortical layers. 66th Annual Eastern Colleges Science Conference (2011).*

Sagara, W., Sandhu, S., Kraushar, M., Rasin, M.R. *Postnatal FMRP expression and development of neocortical projection neurons are interrupted at mid-gestation by transient intrauterine ischemia. 66th Annual Eastern Colleges Science Conference (2011).*

Zhagnay, J., Dubey, A., Rasin, M.R. *Distinct roles of CUGBP1 Isoforms in Neocortogenesis. RISE summer program poster presentation (2011).*

Kraushar, M., DeBoer, E., Rasin, M.R. *Transient interuterine ischemia disrupts phosphorylation of EEF2 in developing sensorimotor neocortices. RWJMS/Princeton/Rutgers MD/PhD symposium (2011).*

DeBoer, E., Akamatsu, W., Okono, H., Rasin, M.R. *Differentiation of Neocortical Neural Stem Cells is Directed by Spatiotemporal Expression of HuD Transcript Variants. 1st annual stem cell and regenerative medicine conference, Rochester NY (2011).*

Thompson, K., DeBoer, E., Rasin, M.R. *HuR expression in NSCs regulates neocortical development and cortical size. 1st annual stem cell and regenerative medicine conference, Rochester NY (2011).*

Thompson, K., DeBoer, E., Rasin, M.R. *The Role of HuR in Neural Stem Cells of the Developing Neocortex. IGERT Poster Session, Piscataway NJ (2011).*

AdHoc Reviewer for:

Journal of Neuroscience, Frontiers of Neurogenesis, Cerebral Cortex, Collegium Antropologicum, Neuroscience Letters, Developmental Neurobiology, BBA - General Subjects, JoVE, Journal of Transplantation & Stem Cell Biology, Neurochemistry International