Roman Sloutsky

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EDUCATION

2017   PhD, Computational and Systems Biology, Washington University in St. Louis
Advisor: Kristen Naegle
Thesis: Robust algorithms for detecting hidden structure in biological data

2009   MS, Biophysics, Ohio State University
Advisor: Michael Paulaitis
Thesis: Mechanical unfolding of solvated α-synuclein studied by Molecular Dynamics simulations

2001   BA, Mathematics, Northwestern University

PROFESSIONAL EXPERIENCE

2017-   Postdoctoral Research Fellow, Lab of Margaret Stratton
Department of Biochemistry and Molecular Biology, University of Massachusetts Amherst

2012-   Graduate Student, Lab of Kristen Naegle
2017   Biomedical Engineering Department, Washington University in St. Louis

2009-   Graduate Student, Lab of Michael Brent
2012   Center for Genome Sciences, Washington University School of Medicine

2006-   Graduate Student, Lab of Michael Paulaitis
2008   Department of Chemical and Biomolecular Engineering, Ohio State University

2005-   Bioinformatics Intern
2006   Comprehensive Cancer Center, Ohio State University

2002-   Research Assistant
2004   Biological Sciences Division, University of Chicago

1999-   Research Assistant
2001   Integrated Genomics, Inc., Chicago, IL

PUBLICATIONS

2020   Ozden, C., **Sloutsky, R.**, Santos, N., Agnello, E. Gaubitz, C., Lapinskas, E., Esposito, E., Kelch, B., Garman, S., Hayashi, Y., and Stratton, M.M. (2020), "CaMKII binds both substrates and effectors at the active site", *bioRxiv*, [doi.org/10.1101/2020.10.25.354241](doi.org/10.1101/2020.10.25.354241)

2020   ***Sloutsky, R.**, *Dziedzic, N., Dunn, M.J., Bates, R.M., Torres-Ocampo, A.P., Boopathy, S. Page, B., Weeks, J.G., Chao, L.H., and Stratton, M.M., "Heterogeneity in human hippocampal CaMKII transcripts reveals allosteric hub-dependent regulation", *Science Signaling*, vol. 13, no. 641, eaaz0240, doi.org/10.1126/scisignal.aaz0240

2020   **Sloutsky, R.** and Stratton, M.M., "Functional implications of CaMKII alternative splicing", *European Journal of Neuroscience*, online 28 Apr 2020, (invited review), doi.org/10.1111/ejn.14761

2019   **Sloutsky, R.** and Naegle, K.M., "ASPEN, a methodology for reconstructing protein evolution with improved accuracy using ensemble models", *Elife*, vol. 8, e47676, doi.org/10.7554/eLife.47676

2018   Ronan, T., Anastasio, S., Qi, Z., **Sloutsky, R.**, Naegle, K.M., and Tavares, P.H.S.V. "Openensembles: a python resource for ensemble clustering", *The Journal of Machine Learning Research*, vol. 19, no. 1, 956–961

2018   **Sloutsky, R.** and Naegle, K.M., "Proteome-Level analysis indicates global mechanisms for post-translational regulation of RRM domains", *Journal of Molecular Biology*, vol. 430, no. 1, pp. 41–44, doi.org/10.1016/j.jmb.2017.11.001

2016   **Sloutsky, R.** and Naegle, K.M., "High-resolution identification of specificity determining positions in the LacI protein family using ensembles of sub-sampled alignments", *PLoS ONE*, vol. 11, no. 9, e0162579, doi.org/10.1371/journal.pone.0162579

2013   Cho, Y., **Sloutsky, R.**, Naegle, K.M., and Cavalli V., "Injury-induced HDAC5 nuclear export is essential for axon regeneration", *Cell*, vol. 155, no. 4, pp. 894–908, doi.org/10.1016/j.cell.2013.10.004

2012   **Sloutsky R.**, Jimenez, N., Swamidass, S.J., and Naegle, K.M., "Accounting for noise when clustering biological data", *Briefings in Bioinformatics*, vol. 14, no. 4, pp. 423–36, online 14 Oct 2012, doi.org/10.1093/bib/bbs057

2006   Gerdes S.Y., Kurnasov O.V., Shatalin K., Polanuyer B., **Sloutsky R.**, Vonstein V., Overbeek R., and Osterman A.L., "Comparative genomics of NAD biosynthesis in cyanobacteria", *Journal of Bacteriology*, vol. 188, no. 8, pp. 3012–23

2002   Kurnasov O.V., Polanuyer B., Ananta S., **Sloutsky R.**, Tam A., Gerdes S.Y., Osterman A.L., "Ribosylnicotinamide kinase domain of NadR protein: identification and implications in NAD biosynthesis", *Journal of Bacteriology*, vol. 184, no. 24, pp. 6906–17

Patents

2020   Naegle, K.M. and **Sloutsky, R.**, "Toolkit for the production of post-translationally modified proteins", United States Patent no. 10865394; US10865394B2

Software

ASPEN   Exhaustive enumeration of phylogenetic topologies under ensemble-derived constraints

Awards and Fellowships

2018   Protein Science Travel Award, Protein Society Symposium

2016   Midwest Quantitative Biology Symposium Travel Award

2013   Lockheed Martin Center for Biological Systems Engineering Scholar

Presentations

Talks

2019 "Conditional Role of Variable Linker in CaMKII Activation"
Joint UMass Amherst / UMass Medical School Chemistry-Biology Interface Retreat
Worcester, MA, USA. June 7

2017 "Reconstructing Paralog Divergence Using Ortholog Subsampling"
University of Massachusetts Amherst, Amherst, MA, USA. August 2

2017 "Robust Reconstruction of Paralog Divergence Histories"
Center for Biological Systems Engineering seminar series, St. Louis, MO, USA. April 17

2016 "Reconstruction of Paralog Divergence Histories by Constrained Topology Enumeration"
Midwest Quantitative Biology Symposium lightning talk, West Lafayette, IN, USA. October 22

2015 "Identification of SH2 Domain Recognition Determinants"
Siteman Cancer Center Cell-to-Cell Communications in Cancer seminar series
St. Louis, MO, USA. December 9

Posters

2018 "Role of CaMKII Alternative Splicing in Memory Formation"
Protein Society Symposium, July 11

2017 "Robust reconstruction of paralog divergence"
Proteins Gordon Research Conference, June 20

2016 "Analysis of Complex Specificity Determinant Patterns in Large Protein Families"
Biophysical Society Annual Meeting, March 1

Teaching Experience

2019 Biochem 642, Advanced Molecular Biology, Guest Instructor
University of Massachusetts Amherst

2009 Bio 5495, Computational Molecular Biology, Teaching Assistant
Washington University in St. Louis

2006 Bio 101, An Introduction to Biology, Teaching Assistant and Laboratory Instructor
2007 Ohio State University

Outreach

2019 Presenter, "Python for scientific applications"
Bioinformatics Users Group instructional seminar series
University of Massachusetts Amherst

2014 Software Carpentry workshop facilitator
Washington University School of Medicine