Megan Riel-Mehan, PhD

Allen Institute for Cell Science
Seattle, WA

(415) 476-5379
meganr@alleninstitute.org

Education

2013	Ph.D.	University of California, San Francisco	Chemistry & Chemical Biology
2006	B.S.	University of California, Berkeley	Chemical Biology
2006	B.A.	University of California, Berkeley	Fine Art

Professional Appointments

2017 - Visualization Scientist. Allen Institute for Cell Science, Animated Cell Group. Director: Graham Johnson, PhD

2013 - 2017 Postdoctoral Scholar. UC, San Francisco. Bioengineering and Therapeutic Sciences. PI: Graham Johnson, PhD

2007- 2008 Research Technician. The Burnham Institute for Medical Research. Infectious and Inflammatory Disease. PI: Maurizio Pellecchia, PhD

Research Experience

2008- 2013 Department of Chemistry and Chemical Biology, The University of California, San Francisco. Graduate Student. PI: Kevan Shokat, PhD.

-Thesis title: *Development of Chemical Crosslinkers to Trap Kinase-Substrate Pairs.*

2007- 2008 Department of Inflammatory and Infectious Diseases. The Burnham Institute for Medical Research. Research Technician. PI: Maurizio Pellecchia, PhD.

-Design and synthesis of C-Jun N-Terminal Kinase inhibitors.

2007- 2007 The University of California, Berkeley. Research Assistant. PI: Dean Toste, PhD.

-Synthesis of small molecules to test enzyme kinetics.

Publications

Lillian K Fritz-Laylin, Megan Riel-Mehan et all. Actin-based protrusions of migrating neutrophils are intrinsically lamellar and facilitate direction changes. *eLife* 2017, **6**:e26990.

Nersisyan L, Johnson G, **Riel-Mehan M** *et al.* PSFC: a Pathway Signal Flow Calculator App for Cytoscape [v1; ref status: awaiting peer review, http://f1000r.es/5k3] *F1000Research* 2015, **4**:480 (doi: 10.12688/f1000research.6706.1)

Riel-Mehan, M., Shokat, K**.** A Crosslinker Based on a Tethered Electrophile for Mapping Kinase-Substrate Networks. *Chemistry and Biology* 21, no. 5 (2014): 585–590 (cover article).

De, S. K., Chen, V., Stebbins, J. L., Chen, L.-H., Cellitti, J. F., Machleidt, T., Barile, E., **Riel-Mehan, M**., Dahl, R., Yang, L., Emdadi, A., Murphy, R., and Pellecchia, M. Synthesis and Optimization of Thiadiazole Derivatives as a Novel Class of Substrate Competitive C-Jun N-Terminal Kinase Inhibitors. *Bioorganic & medicinal chemistry* 18, no. 2 (2010): 590–596.

Barile E, De SK, Carlson CB, Chen V, Knutzen C, **Riel-Mehan M**, Yang L, Dahl R, Chiang G, Pellecchia M. Design, synthesis, and structure-activity relationships of 3-ethynyl-1H-indazoles as inhibitors of the phosphatidylinositol 3-kinase signaling pathway. *J Med Chem* 53, no 23 (2010): 8368-75.

De, S. K., Chen, L.-H., Stebbins, J. L., Machleidt, T., **Riel-Mehan, M.**, Dahl, R., Chen, V., Yuan, H., Barile, E., Emdadi, A., Murphy, R., and Pellecchia, M. Discovery of 2-(5-Nitrothiazol-2-Ylthio)Benzo[D]Thiazoles as Novel C-Jun N-Terminal Kinase Inhibitors. *Bioorganic & medicinal chemistry* 17, no. 7 (2009): 2712–2717.

De SK, Stebbins JL, Chen LH, **Riel-Mehan M**, Machleidt T, Dahl R, Yuan H, Emdadi A, Barile E, Chen V, Murphy R, Pellecchia M. Design, synthesis, and structure-activity relationship of substrate competitive, selective, and in vivo active triazole and thiadiazole inhibitors of the c-Jun N-terminal kinase. *J Med Chem* 52 no 7 (2009):1943-52.

Vazquez, J., De, S. K., Chen, L.-H., **Riel-Mehan, M**., Emdadi, A., Cellitti, J., Stebbins, J. L., Rega, M. F., and Pellecchia, M. Development of Paramagnetic Probes for Molecular Recognition Studies in Protein Kinases. *Journal of medicinal chemistry* 51, no. 12 (2008): 3460–3465.

Stebbins, J. L., De, S. K., Machleidt, T., Becattini, B., Vazquez, J., Kuntzen, C., Chen, L.-H., Cellitti, J. F., **Riel-Mehan, M**., Emdadi, A., Solinas, G., Karin, M., and Pellecchia, M. Identification of a New JNK Inhibitor Targeting the JNK-JIP Interaction Site. *Proceedings of the National Academy of Sciences of the United States of America* 105, no. 43 (2008): 16809–16813.

Awards

2016	Code Fellows Scholarship
2015	Visualization in Science and Education GRC Visionary Grant
2014	Mary Anne Koda-Kimble Seed Award for Innovation
2010	Best poster, UCSF Biochemistry, Biophysics and Chemical Biology retreat
2006	B.S. with Honors, UC Berkeley

Fellowships

2012-2013	QB3 Research Fellowship
2002-2008	Regents and Chancellors Scholarship

Professional Development

2016	Intermediate Javascript at Code Fellows
2015	Front End Web Development at General Assembly

Teaching Experience

UC SAN FRANCISCO

Co-Director. Molecular Animation and Visualization. (Spring 2014, Spring 2015). Co-Directors: Graham Johnson, PhD, and Shawn Douglas, PhD.

Designed and ran a three week class of twelve graduate students with co-directors; wrote and demonstrated tutorials; and assisted students during class and in office hours.

Teaching Assistant. Introduction to Object-Oriented Programming. (Winter 2014). Instructor: Tom Ferrin, PhD.

Graded weekly homework assignments; and held office hours.

Teaching Assistant. Reaction Mechanisms. (Spring Quarter 2010, and Spring Quarter 2011). Instructor: Kevan Shokat, PhD and Danica Fujimori, PhD.

Assisted students during problem solving section of class; ran a class once a week independently; graded exams; and held office hours.

UC BERKELEY

Undergraduate Student Instructor. Organic Chemistry Lecture and Lab (Summer 2004, Spring 2005, Summer 2005, Summer 2006). Instructor: Dean Toste, PhD and Steven Petersen, PhD.

Served as teaching assistant for the 300 student lecture class; ran a weekly 5 hour lab course with 30 students including an introductory lecture; graded exams, and lab notebooks; and held office hours.

Mentoring Experience

2014 Miin Choi. UC Berkeley Undergraduate Research Apprenticeship Program. With Graham Johnson, mentored in the development of a new blood serum cellPack recipe.

Caroline Mai Chan. UC Berkeley Undergraduate Research Apprenticeship Program. Mentored in the development of a new cellPack algorithm.

2013 Ritisha Laungani. Google Summer of Coding Student. With Graham Johnson, Alexander Pico and Scooter Morris, guided the development of a Cytoscape plug-in. Ritisha won the Allan Kuchinsky Student Award for this project.

Conference Participation

Talks

2016 Traditional Illustration Techniques and Computational Approaches to Visualize and Analyze State of the Art Microscopy Data, Association of Medication Illustrators Annual Conference, Atlanta.

2016 Using UCSF Chimera To Visualize and Analyze Volumetric Time Series Data. Visualizing & Modeling Cell Biology, Salt Lake City.

2016 Pharmacogenomics Research Network Website. Scientific Horizons and Opportunities in Pharmacogenomics Research Pre Conference Session, San Diego.

2015 cellPACK: A Virtual Mesoscope To Model and Visualize Structural Systems Biology. Session: Emerging Trends in Visualizing Physical Models and Rapid Prototyping for Biological Systems. AAAS Annual Meeting, San Jose.

Demonstrations

2014 sigViz in Autodesk's Project Cyborg. Megan Riel-Mehan, Merry Wang, Graham Johnson. Association of Medical Illustrators Annual Meeting, Mayo Clinic.

Posters

2015 Traditional Illustration Techniques and Computational Approaches to Visualize and Analyze State of the Art Microscopy Data. Megan Riel-Mehan, Lillian Fritz-Laylin, Tom Goddard, Tom Ferrin, Graham Johnson, and Dyche Mullins. GRC Visualization in Science and Education, Bates College.

2013 Comparing Animation and Simulations as Teaching Tools for Biological Processes. Megan Riel-Mehan, Sam Hertig, and Graham Johnson. GRC Visualization in Science and Education, Bryant University.

2012 Using dynamic simulations to better visualize signaling networks. Megan Riel-Mehan. Visualizing Biological Data VizBi, EMBL. http://vizbi.org/Posters/2012/D04

2012 Trapping Kinase-Substrate Pairs. Megan Riel-Mehan, Alexander Statsuk, Keven Shokat. FASEB SRC: Protein Kinases and Protein Phosphorylation, Snowmass.

Campus Talks

2014 Visualization of Molecular Biology. Research In Progress Seminars.

2010 A Three Component Reaction for Trapping Kinase-Substrate Pairs. Research In Progress Seminars.

Service To Profession

2014 Member of Alumni Career Day Panel, UC Berkeley School of Chemistry

2013 ChemBio Career Day Speaker, UC Berkeley

University Service

2009-2013 Interviewer of Incoming Prospective Graduate Students. In addition to being interviewed by seven faculty members, each prospective graduate student at UCSF is interviewed by a current graduate student, who has access to the prospective student application packet, and whose decision (yes/no/maybe) gets weighed equally with the other interviewers' feedback.

2009-2012 PyMol and Chimera "Boot Camp" instructor. Because incoming students to UCSF have very different levels of biological education and understanding the current graduate students run a 'boot camp' of essential knowledge for incoming students.

2011-2012 Co-Organizer, Research in Progress Seminars. UCSF's Research in Progress Seminar is open to both Postdocs and Graduate students as a forum to present their current and ongoing research.

Community Involvement/Outreach

2017 Lead Developer, Town Hall Project

2015 Kilobot demonstration at Cal Academy of Sciences Robotics themed NightLife event

2014 Interviewed for LabTV's profiles of young scientists

Professional Memberships/Affiliations

2014 Association of Medical Illustrators

2011 Association for Computer Machinery

References

Graham Johnson

Department of Bioengineering and Therapeutic Sciences

University of California, San Francisco

Room N476A Genentech Hall

600 16th Street

San Francisco, CA 94158

Phone: (415) 476-5379
Email: graham@grahamj.com

Kevan Shokat

Department of Cellular and Molecular Pharmacology
University of California, San Francisco

Room N512D Genentech Hall

600 16th Street

San Francisco, CA 94158

Phone: (415) 514-0472

Email: Kevan.Shokat@ucsf.edu

Dyche Mullins

Department of Cellular and Molecular Pharmacology
University of California, San Francisco
Genentech Hall, Room N312
600 16th Street
San Francisco, CA 94158-2517
Phone: 415-514-0133
Email: dyche@mullinslab.ucsf.edu