Contact: khamadani@csusm.edu

Hamadani, Kambiz
Updated 06/13/2019

Curriculum Vitae

CURRENT POSITION

2019-Present Associate Professor, Dept. of Chemistry and Biochemistry, California State University San Marcos
2013-2019 Assistant Professor, Dept. of Chemistry and Biochemistry, California State University San Marcos

EDUCATION

2002-2008 Ph.D., Biochemistry and Molecular Biology, University of California, Los Angeles. Graduate advisor: Dr. Shimon Weiss. Dissertation Title: *Non-equilibrium single molecule protein folding*

1997-2001 B.A., Molecular and Cellular Biology-Biochemistry, University of California, Berkeley, Primary Undergraduate advisors: Drs. Robert M. Glaeser and Kenneth H. Downing. Thesis title: *2D-electron crystallography of a metastable photocycle intermediate of the G-coupled protein receptor bovine rhodopsin*. Secondary undergraduate advisor: Daniel E. Koshland Jr. Thesis title: *Proteomics and Models for Enzyme Cooperativity*

OTHER PROFESSIONAL EXPERIENCE

2008-2013 Postdoctoral Scholar, Quantitative Biology Institute, University of California, Berkeley. Primary Postdoctoral advisors: Drs. Jamie Cate & Susan Marqusee. Project Title: *Developing novel chemical biology tools to study co-translational protein folding using single molecule FRET.*

Postdoctoral Collaborator: Dr. Carlos J. Bustamante. Project Title: *Developing methods to monitor transient heat evolution during biochemical catalysis.*

2007-2008 Visiting Research Associate, College of Medicine Health Science Center, Texas A&M University. Secondary Graduate advisor: Dr. Arthur E. Johnson. Project Title: *Developing novel unnatural florescent suppressor amino-acyl-tRNAs for smFRET studies of co-translational folding in a wheat-germ extract-based translation system.*

COURSES TAUGHT

	Term	Course	Title	# of Students
2019	Spring	CHEM 351L	General Biochemistry	47
2018	Fall	CHEM 341	General Biochemistry	42
	Fall	CHEM 300	Literature in Chemistry	14
	Fall	CHEM 351L	Biochemistry Lab	12
2018	Spring	CHEM 341	General Biochemistry	44
	Spring	CHEM 351L	Biochemistry Lab	12
	Spring	CHEM 105	General, Organic, and Biochemistry of Life	57
2017	Fall	CHEM 341	General Biochemistry	37
	Fall	CHEM 351L	Biochemistry Lab	14
	Spring	CHEM 341	General Biochemistry	62
	Spring	CHEM 351L	Biochemistry Lab	14
	Spring	CHEM 106	Organic, and Biochemistry	4
2016	Fall	CHEM 341	General Biochemistry	54
	Fall	CHEM 105	General, Organic, and Biochemistry of Life	42
	Spring	CHEM 105	General, Organic, and Biochemistry of Life	80
	Spring	CHEM 105	General, Organic, and Biochemistry of Life	79
	Spring	CHEM 491-4	ST: Biophysical and Biosynthetic Chemistry	12
2015	Fall	CHEM 105	General, Organic, and Biochemistry of Life	41
	Fall	CHEM 351L	Biochemistry Lab	19
	Fall	CHEM 351L	Biochemistry Lab	21
	Spring	CHEM 105	General, Organic, and Biochemistry of Life	80
	Spring	CHEM 105L	General, Organic, and Biochemistry of Life Lab	19
	Spring	CHEM 341	General Biochemistry	45
2014	Fall	CHEM 105	General, Organic, and Biochemistry of Life	54
	Fall	CHEM 341	General Biochemistry	41
	Fall	CHEM 351L	Biochemistry Lab	17

2014	Spring	CHEM 105	General, Organic, and Biochemistry of Life	81
2013	Fall	CHEM 105	General, Organic, and Biochemistry of Life	41
	Fall	CHEM 351L	Biochemistry Lab	13

RESEARCH & SCHOLARSHIP

Peer-Reviewed Publications

2018 "Modulating long-range energetics via helix stabilization: a case study using T4 lysozyme". Sabriya Rosemond, **Kambiz M. Hamadani**, Jamie HD Cate, and Susan Marqusee. *Protein Science* **27**(12):2084-2093 [Impact Factor: 2.41, h-index: 157, Article Influence Score: 1.2]

2017 "An in-vitro tag-and-modify protein sample generation method for single-molecule fluorescence resonance energy transfer". **Kambiz M. Hamadani**, ***Jesse Howe***, Madeleine Jensen, Peng Wu, Jamie HD Cate, and Susan Marqusee. *Journal of Biological Chemistry* **292**(38):15636-15648 [Impact Factor: 4.125, h-index: 107, Article Influence Score: 1.6]

2014 "The heat released during catalytic turnover enhances the diffusion of an enzyme". Clement Riedel, Ronen Gabizon, Christian A.M. Wilson, **Kambiz M. Hamadani**, K. Tsekouras, Susan Marqusee, Steve Presse, and Carlos Bustamante *Nature* **517**(7533):227-30 [Impact Factor: 40.137, h-index: 1011, Article Influence Score: 22.2]

2008 "Non-equilibrium single molecule protein folding in a co-axial mixer". **Kambiz M. Hamadani** and Shimon Weiss. *Biophysical Journal* **95**(1):352-365 [Impact Factor: 3.632, h-index: 229, Article Influence Score: 1.5]

2008 "Single molecule protein folding kinetics in a co-axial microfluidic mixer". **Kambiz M. Hamadani** and Shimon Weiss. *Proceedings of the SPIE* (eds. J. Enderlein, Z. Gryczynski, R. Erdmann) Vol. **6862**:68620A [Impact Factor: .49, h-index: 129]

2007 "Photobleaching pathways in single-molecule FRET experiments". Xiangxu Kong, Eyal Nir, **Kambiz M. Hamadani**, Shimon Weiss. *Journal of the American Chemical Society* **129**: 4643-4654 [Impact Factor: 13.858, h-index: 486, Article Influence Score: 3.5]

2006 "Shot-noise limited single molecule FRET histograms: comparison between theory and experiments"; Eyal Nir, Xavier Michalet, **Kambiz M. Hamadani**, Ted A. Laurence, Daniel Neuhauser, Yevgeniy Kovchegov, Shimon Weiss. *Journal of Physical Chemistry B* **110**: 22103-22124 [Impact Factor: 3.177, h-index: 334, Article Influence Score: .9]

2002 "Proteomics and models for enzyme cooperativity". Daniel E. Koshland Jr., **Kambiz M. Hamadani**. *Journal of Biological Chemistry* **277**(49): 46841 [Impact Factor: 4.125, h-index: 107, Article Influence Score: 1.6]

Complete List of Published Work in NCBI MyBibliography:
https://www.ncbi.nlm.nih.gov/sites/myncbi/1BqDqQBWMIQ5A/bibliography/40073451/public/?sort=date&direction=ascending

Invited Talks and Presentations:

2019 **Invited Talk:** "Molecular Judo, Single molecule co-translational protein folding, and Hands-on Virtual Reality… Oh My!" University of California San Diego. Dept of Chemistry and Biochemistry May 14, 2019, San Diego, CA

2018 **Invited Talk:** "CRT Redesign of CHEM 105/105L: General, Organic, and Biochemistry of Life". 2018 CRT Summer Institute STAR Faculty presentation. June 25, 2018, Long Beach, CA

2018 **Oral presentation:** "Novel in-vitro tag-and-modify protein sample generation methods for multiplexed single-molecule FRET screening". 2018 Annual Meeting of the American Society of Biochemistry and Molecular Biology. April 21-25, 2018. San Diego, CA

2018 Poster presentation: "High-throughput single molecule FRET for protein structure-dynamics-function screening and molecular evolution". 2018 Biophysical Society Meeting. February 17-21, 2018. San Francisco, CA.

2018 **Oral presentation:** "High-throughput single molecule FRET for protein structure-dynamics-function screening and molecular evolution". 2018 National Meeting of the American Chemical Society. March 18-22, 2018. New Orleans, LA.

2018 **Oral presentation:** "Reimagining Chemistry Education with Blended Next-Generation Virtual Laboratories". 2018 National Meeting of the American Chemical Society. March 18-22, 2018. New Orleans, LA.

2017 **Invited seminar:** "Labeling ribosome-bound nascent polypeptides for co-translational single molecule protein folding & engineering" 2017 San Diego State University Dept. of Chemistry and Biochemistry Seminar Series. November 03, 2017. San Diego, CA

2017 **Oral presentation:** "Pushing click chemistry to its limits: An in-vitro sample generation pipeline for high-throughput single-molecule FRET studies of proteins and ribosome-bound nascent chain libraries". 2017 National Meeting of the American Chemical Society. April 3, 2017.San Francisco, CA.

2017 **Oral presentation:** "An in-vitro sample generation pipeline for high-throughput single-molecule FRET-based screening of proteins". 2017 Biophysical Society Meeting. February 15, 2017. New Orleans, LA.

2017 Poster presentation: "Monitoring Nascent Protein Folding on the Ribosome Using Single Molecule FRET". Salk Institute and IPSEN Foundation Symposium on Biological Complexity: RNA Biology. January 25-27, 2017. La Jolla, CA

2016 **Invited talk**. "Post-translational click-based labeling of unnatural amino acid-tagged ribosome-bound nascent polypeptide chains for high-throughput structural biophysics and single-molecule spectroscopy applications". Global Congress on Biochemistry, Glycomics & Amino Acids. December 8-9, 2016. San Antonia, TX, USA

2015 **Oral presentation.** "An in-vitro sample generation strategy for single-molecule spectroscopy". ACS Regional Meeting. California State University, San Marcos. November 7th, 2015. San Marcos, CA, USA

2015 **Invited seminar.** "Single Molecules in CSU San Marcos". University of San Diego Dept. of Chemistry and Biochemistry. December 8th, 2015. San Diego, CA, USA

2014 **Invited seminar.** "Single Molecule Biophysics for the Masses". University of California, Irvine Dept. of Chemistry Sept. 19, 2014. Irvine, CA, USA

2014 **Invited seminar**. "From Protein folding on the Ribosome to Synthetic Biochemistry". California State University San Marcos. Frontiers in Science Seminar Series. March 20, 2014. San Marcos, CA, USA

2012 **Invited talk.** "Elucidating mechanisms in co-translational protein folding using single molecule FRET". CECAM Workshop on "Ribosome associated protein folding". May 29-31, 2012. Lausanne, Switzerland

2008 **Invited talk.** "Single molecule protein folding kinetics in a co-axial microfluidic mixer". SPIE BIOS/Photonics West. January 19-24, 2008. San Jose, CA, USA

2007 **Invited seminar**. "Single molecule protein folding studies under physiologically-relevant *in-vitro* and *ex-vivo* conditions". UCLA California NanoSystems Institute Meeting. March 8, 2007

PROFESSIONAL SERVICE AND SOCIETY MEMBERSHIPS

2018-2021 Education Committee Member, Biophysical Society
2018-2021 Publications Committee Member, Biophysical Society
2018 Reviewer: Biochemical Journal
2017-2019 Chair, College of Science and Mathematics Faculty Development Committee. CSU San Marcos
2017-2018 Member, CSUSM Academic Senate Diversity Course Requirement Sub-Committee/Work Group
2017-Present Member, International Union of Pure and Applied Chemistry
2017 Reviewer: Oncotarget
2016 Reviewer: Journal of Molecular Evolution
2016-Present Reviewer: CSUPERB Grants
2015-Present Member, American Chemical Society
2015-Present Member, College of Science and Mathematics Faculty Development Committee. CSU San Marcos
2014-2018 Developing Faculty Member, M.S. program in Chemistry and Biochemistry at CSU San Marcos
2012 Reviewer: PLOS ONE
2008-Present Member, Biophysical Society

HONORS AND AWARDS

2018 BIOCOM Life Science Catalyst Award Nominee
2018 CSU Faculty Innovation and Leadership Award
2017 CSUSM College of Science and Math Outstanding Faculty-Student Research Collaboration Award
2015 CSUSM Celebration of Faculty Scholarship and Creative Activities Award Recipient

2005 Biotechnology Research and Education Program (BREP) - Graduate Research and Education in Adaptive bio-Technology (GREAT) Fellowship Finalist
2004 NSF Graduate Student Fellowship Program, Honorable Mention
2003 Departmental Fellowship, UCLA Dept. of Chemistry and Biochemistry
2001 Graduated with Honors, UC Berkeley
2001 Departmental Honors, UC Berkeley Dept. of Molecular and Cell Biology
2000 Biology Fellows Scholar, UC Berkeley/HHMI

MENTORING ACTIVITIES

2016-Present Graduate students. Served on thesis committees and as a research advisor to master's students.
2013-Present Undergraduate students. Former students have won prestigious awards, presented at national scientific meetings, entered PhD/MS/MBA/MD programs, and obtained industry research, development, and/or manufacturing positions.

GRANTS AWARDED

2019 "Developing Hands-on virtual reality Science Experiences" NSF $750,000. Currently Active. Dates 7/1/2019-7/1/2022
2018 "Developing novel virtual reality hardware for Chemistry and Biology labs" CSU Chancellor's Office Laboratory Innovations with Technology Grant. $ 13,907. Currently Active. Dates: 07/1/2018-7/1/2019.
2018 "Travel Grant Award for single molecule spectroscopy collaborative project". CSUPERB Travel Grant. $1,500. Complete. Dates: 07/1/2017-7/1/2018.
2017 **"**Redesigning CHEM 105/105L, General, Organic, and Biochemistry of Life using Virtual Lab Modules". CSU Chancellor's Office Course Redesign with Technology Virtual Lab Grant. $9,188. Complete. Dates: 8/21/2017-5/21/2018.
2016 **"**Redesigning CHEM 341, General Biochemistry using Virtual Lab Modules". CSU Chancellor's Office Course Redesign with Technology Virtual Lab Grant. $10,648. Complete. Dates: 8/21/2016-5/21/2017.
2016 "Developing a Fluorescence Correlation Spectroscopy Assay to track the binding of EF-Tu to Hsp33". CSUSM Grant Proposal Seed Money Award (GPSM). $3,000. Complete. Dates: 11/2016-6/2017.
2016 "Completion and publication of work in progress on High Throughput Single Molecule Biophysics". CSUSM University Professional Development and Research, Scholarship and Creative Activities (UPD-RCSA) Grant. $3,542. Complete. Dates: 07/01/2016-5/31/2017.
2014 "Expanding the Scope of Single Molecule Fluorescence Spectroscopy". CSUPERB New Investigator Grant. $15,000. Complete. Dates: 06/2014-12/2015.
2014 "Investigations of Hsp33 for in vitro translation applications", CSUPERB President's Commission Scholarship. $8000. Complete. Dates: 6/2014-9/2014.

PATENTS

2018 "Hands-on Laboratory and Demonstration Equipment with a Hybrid virtual environment, along with their methods of use". USPTO Application # 62657771. Assignee: Trustees of the California State University. (Patent Pending).
2018 "Single Molecule Phenotype Analysis" (National Phase application under review). USPTO Application #15512091. Assignee: The Trustees of the California State University. (Patent Pending)