

CURRICULUM VITAE

NAME Tom Huxford

DATE AND PLACE OF BIRTH

July 29, 1971, Salem, Oregon, USA

ADDRESS AND PHONE

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San Diego State University
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San Diego, CA 92182-1030

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PERSONAL DATA

Citizenship: USA
Family: Married to Glenda Auxiliadora Bojorge
Children: Cyrus (son) and Aila (daughter)
Languages: Fluent in English and Spanish

EDUCATION

1989-1995 B.S. Honors Biochemistry with University Honors, Minor in Management
Brigham Young University, Provo, Utah

1995-2001 Ph.D. Chemistry (Biochemistry)
University of California San Diego, La Jolla, California

PROFESSIONAL TRAINING AND POSITIONS

1993-1995 Research Associate, Analytical Chemistry Laboratory of Professor John D. Lamb
Brigham Young University
Honors Thesis: "Quantitative Analysis of Cyanide and Sulfide Ions from Basic Waste Solutions
by Capillary Zone Electrophoresis"

1995-2001 Graduate Student, Structural Biology Laboratory of Professor Gourisankar Ghosh
University of California San Diego
Dissertation: "Inactivation of Transcription Factor NF- κ B through Its Association with the I κ B α
Inhibitor Protein"

- 2001-2005 Postdoctoral Fellow, University of California Universitywide AIDS Research Program, Structural and biophysical characterization of proteins and complexes involved in the NF- κ B signal transduction pathway. Structures of *Aplysia* acetylcholine binding protein:ligand complexes.
- 2005-2010 Assistant Professor, Department of Chemistry & Biochemistry, San Diego State University
- 2005-2010 Assistant Professor, Molecular Biology Institute, San Diego State University
- 2010-2014 Associate Professor, Department of Chemistry & Biochemistry, San Diego State University
- 2010-2014 Associate Professor, Molecular Biology Institute, San Diego State University

PRESENT POSITIONS

- 2014- Professor, Department of Chemistry & Biochemistry, San Diego State University
- 2014- Professor, Molecular Biology Institute, San Diego State University
- 2006- Director, San Diego State University Macromolecular X-ray Crystallography Facility

HONORS AND AWARDS

- 1989 Ezra Taft Benson Scholarship (University Presidential), Brigham Young University
- 1998 Predoctoral Fellowship, University of California Universitywide AIDS Research Program
- 2001 Postdoctoral Fellowship, University of California Universitywide AIDS Research Program
- 2002 Martin D. Kamen Prize, Awarded annually to the outstanding dissertation defended in the field of biochemistry at the University of California San Diego
- 2009 Research Scholar, American Cancer Society
- 2009 Outstanding Faculty Award, Nu Alpha Kappa Latino-Based Fraternity, San Diego State University
- 2009 Outstanding Faculty Award, Department of Chemistry & Biochemistry, San Diego State University
- 2011 Mortar Board Award for Scholarship, Leadership, and Service, nominated by SDSU students Kimberly Ariza and Kyle Grant
- 2014 Favorite Faculty Member recognition by SDSU Residential Students
- 2014 Outstanding Faculty Award, nominated by College of Sciences Outstanding Student Linda Honaker
- 2015 Favorite Faculty Member recognition by SDSU Residential Students
- 2016 Favorite Faculty Member recognition by SDSU Residential Students
- 2018 Favorite Faculty Member recognition by SDSU Residential Students
- 2018 Mortar Board Award for Scholarship, Leadership, and Service, nominated by SDSU student Olivia Musil
- 2019 Favorite Faculty Member recognition by SDSU Residential Students
- 2020 Outstanding Faculty Award, nominated by College of Sciences Outstanding Student Citlayi Villaseñor

PROFESSIONAL SERVICE

- 2005-2013 Reviewer, Argonne National Laboratory Advanced Photon Source
- 2006 Textbook Reviewer, Tymoczko, Berg, and Stryer, *Biochemistry: A Short Course*, W.H. Freeman
- 2006 Reviewer, Utah State University New Faculty Research Grant Program
- 2007-2008 Reviewer, California State University Program in Education and Research in Biotechnology (CSUPERB) Grant Programs
- 2007 Reviewer, *Singularity*, California Educational Alliance science journal for High School Students
- 2008 Textbook Reviewer, Smith, *General, Organic, & Biological Chemistry*, McGraw-Hill
- 2009 Reviewer, *European Journal of Medicinal Chemistry*
- 2009 Reviewer, Academic Research Infrastructure Program: Recovery and Reinvestment (ARI-R²), National Science Foundation, Arlington, Virginia
- 2010 Reviewer, California State University Program in Education and Research in Biotechnology (CSUPERB) Grant Programs
- 2010 Reviewer, American Heart Association, Western States Affiliate, Peer Review Committee 3A, Burlingame, CA, April 22, 2010
- 2010 Reviewer, National Institutes of Health/National Institute of Diabetes and Digestive and Kidney Diseases, Diabetes, Endocrinology, and Metabolic Diseases B Subcommittee, San Diego, CA, June 16-18, 2010
- 2010 Reviewer, *Journal of Signal Transduction*
- 2011 Textbook Reviewer, Lodish, *et al.*, *Molecular Cell Biology*, 7th Ed., W.H. Freeman
- 2011 Textbook Reviewer, Voet, Voet & Pratt, *Fundamentals of Biochemistry*, 4th Ed., Wiley
- 2011 Reviewer, Chemistry of Life Processes Program, National Science Foundation, Arlington, Virginia
- 2011 Textbook Writer/Editor, Lodish, *et al.*, *Molecular Cell Biology*, 7th Ed., W.H. Freeman, End of chapter problems, Chapters 2 and 3
- 2011 Reviewer, *Journal of Signal Transduction*
- 2011 Reviewer, *Biophysical Journal*
- 2011 Reviewer, *Journal of Applied Crystallography*
- 2012 Reviewer, California State University Program in Education and Research in Biotechnology (CSUPERB) Grant Programs, Pomona, CA, April 14, 2012
- 2012 Reviewer, American Heart Association, Proteins and Crystallography 4 Committee, April 18, 2012
- 2012 Reviewer, *PLoS Computational Biology*
- 2012 Reviewer, *Letters in Drug Design & Discovery*
- 2012 Reviewer, American Heart Association, Proteins and Crystallography 2 Committee, October 15, 2012
- 2012 Reviewer (*ad hoc*), Chemistry of Life Processes Program, National Science Foundation
- 2013 Reviewer, Chemistry of Life Processes Program, National Science Foundation, Virtual Panel
- 2013 Reviewer (*ad hoc*), Blue-Sky (Blanc) Programme, French National Research Agency, March 18, 2013
- 2013 Reviewer, American Heart Association, Proteins and Crystallography 3 Committee, October 15, 2013
- 2013 Reviewer, *Journal of Inorganic Biochemistry*
- 2013 Reviewer (*ad hoc*), Multiple Sclerosis Research Australia, August 15, 2013
- 2013 Reviewer, American Heart Association, Proteins and Crystallography 5 Committee, April 30, 2013
- 2014 Reviewer, Stanford Synchrotron Radiation Light Source

- 2014 Reviewer, American Heart Association, Proteins and Crystallography 5 Committee, April 17, 2014
- 2014 Reviewer, *Cell Biochemistry and Function*
- 2014 Reviewer, Chemistry of Life Processes Program, National Science Foundation, Virtual Panel
- 2014 Reviewer (*ad hoc*), Biotechnology and Biological Sciences Research Council, December, 2014
- 2015 Reviewer (*ad hoc*), Biotechnology and Biological Sciences Research Council, March, 2015
- 2015 Reviewer, American Heart Association, Proteins and Crystallography 3 Committee, St. Petersburg, FL, April 16, 2015
- 2015 Reviewer (*ad hoc*), Biotechnology and Biological Sciences Research Council, August, 2015
- 2015 Reviewer, *Scientific Reports*
- 2015 Reviewer (*ad hoc*), Biotechnology and Biological Sciences Research Council, November, 2015
- 2016 Reviewer (*ad hoc*), Chemistry of Life Processes Program, National Science Foundation
- 2016 Reviewer, California State University Program in Education and Research in Biotechnology (CSUPERB), Travel Grant Program
- 2017 Reviewer, *Journal of Molecular Biology* (2)
- 2017 Reviewer (*ad hoc*), The Wellcome Trust/DBT India Alliance Fellowship Program, February, 2017
- 2017 Reviewer, Biotechnology and Biochemical Engineering Program, National Science Foundation, Arlington, Virginia
- 2017 Reviewer, American Heart Association, Proteins and Crystallography 2 Committee, May 9, 2017
- 2017 Reviewer (*ad hoc*), Medical Research Council, Career Development Awards, June, 2017
- 2017 Reviewer, *Science Signaling*
- 2018 Reviewer, American Heart Association, Fellowship Proteins and Crystallography Committee, January 31, 2018
- 2018 Reviewer, *Journal of Molecular Biology*
- 2018 Reviewer, American Heart Association, Innovative Project Award Program, May 10, 2018
- 2018 Reviewer, *Protein Science*
- 2018 Co-Chair, American Heart Association, Fellowship Proteins and Crystallography Committee, September 19, 2018
- 2018 Reviewer, Cellular and Biochemical Engineering Program, National Science Foundation, Alexandria, Virginia
- 2019 Reviewer, *Biochemistry*
- 2019 Reviewer (*ad hoc*), The Wellcome Trust/DBT India Alliance Fellowship Program, February, 2019
- 2019 Reviewer, American Heart Association, Innovative Project Award Program, March 8, 2019
- 2019 Reviewer, California State University Program in Education and Research in Biotechnology (CSUPERB) Grant Programs, April 3, 2019
- 2019 Reviewer, *Endocrine, Metabolic & Immune Disorders – Drug Target*
- 2019 Reviewer, *Protein Science*
- 2019 Chair, American Heart Association, Fellowship Proteins and Crystallography Committee 1, October 17, 2019
- 2020 Reviewer (*ad hoc*), Natural Sciences and Engineering Research Council of Canada, Discovery Grants Program, January, 2020
- 2020 Reviewer, American Heart Association, Innovative Project Award Program, March 25, 2020
- 2020 Reviewer, American Heart Association, COVID-19 Rapid Response Research Grant Program, April, 2020

- 2020 Reviewer, California State University Program in Education and Research in Biotechnology (CSUPERB) Grant Programs, April 18, 2020
- 2020 Reviewer, *Endocrine, Metabolic & Immune Disorders – Drug Target* (4)
- 2020 Reviewer, *Biochemical Pharmacology*
- 2020 Reviewer, American Heart Association, COVID-19 Program, April 16, 2020
- 2020 Reviewer, *Coronaviruses* (5)
- 2020 Reviewer, *International Journal of Molecular Sciences* (2)
- 2020 Reviewer, *Future Oncology*
- 2020 Reviewer, *Biochemistry*
- 2020 Reviewer, National Institutes of Health/National Institute of Allergy and Infectious Diseases, Emergency Awards: Rapid Investigation of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) and Coronavirus Disease 2019 (COVID-19), October 27, 2020
- 2020 Reviewer, *ACS Omega*

UNIVERSITY SERVICE

- 2005 Coordinator, Pfizer Undergraduate Research Fellowship Program
- 2006-2007 Member, Faculty Search Committee, Analytical Chemistry, Department of Chemistry & Biochemistry
- 2006-2009 Member, Radiation Safety Committee, San Diego State University
- 2006-2009 Member, Scholarship Committee, Department of Chemistry & Biochemistry
- 2006- Member, Graduate Committee, Department of Chemistry & Biochemistry
- 2007-2008 Member, Faculty Search Committee, Structural Biology, Department of Biology
- 2008- Director, San Diego State University Structural Biology Program
- 2008-2015 Member, Student Research Committee, San Diego State University
- 2010-2014 Member, Preprofessional Health Student Evaluation Committee, San Diego State University
- 2010-2011 Member, Faculty Search Committee, Organic Chemistry, Department of Chemistry & Biochemistry
- 2010-2014 Chair, Scholarship Committee, Department of Chemistry & Biochemistry
- 2011-2013 Chair, Reappointment, Tenure, and Promotion Committee, Department of Chemistry & Biochemistry
- 2012- Member, Advisory Committee, SDSU/CIRM Stem Cell Internship Program
- 2013-2014 Member, Faculty Search Committee, Analytical Chemistry, Department of Chemistry & Biochemistry
- 2013-2014 Member, Faculty Search Committee, Structural Biology, Department of Biology (Viromics Institute cluster hire)
- 2014-2015 Member, Advisory Board, Barry M. Goldwater Scholarship
- 2014-2015 Member, Reappointment, Tenure, and Promotion Committee, College of Sciences
- 2014-2015 Chair, Faculty Search Committee, Physical Biochemistry, Department of Chemistry & Biochemistry
- 2014-2015 Member, Faculty Search Committee, Immunology, Department of Biology
- 2014-2016 Member, Joint Doctoral Program Executive Committee, Department of Biology
- 2014-2015 Member, Faculty Search Committee, Computational Chemistry, Department of Chemistry & Biochemistry (Viromics Institute cluster hire)
- 2015 Member, Special Review Panel, College of Sciences Policy and Planning Committee
- 2015-2019 Member, Scholarship Committee, Department of Chemistry & Biochemistry
- 2015-2016 Chair, Reappointment, Tenure, and Promotion Committee, College of Sciences

2015-2016	Member, Faculty Search Committee, Immunology, Department of Biology
2017	Member, Staff Search Committee, Instrument Specialist, Department of Chemistry & Biochemistry
2017-2018	Chair, Faculty Search Committee, Chemistry Education, Department of Chemistry & Biochemistry
2018-	Member, Advisory Board, SDSU NIH/NIGMS Minority Access to Research Careers (MARC) Program
2018-	Member, Facilities & Safety Committee, Department of Chemistry & Biochemistry
2019-2020	Chair, Faculty Search Committee, Biophysical Chemistry & Molecular Medicine, Department of Chemistry & Biochemistry
2019	Member, Staff Search Committee, Instrument Specialist, Department of Chemistry & Biochemistry
2019-2020	Co-Chair, Reappointment, Tenure, and Promotion Committee, Department of Chemistry & Biochemistry
2020-2021	Member, Reappointment, Tenure, and Promotion Committee, San Diego State University
2020-	Member, Executive Committee, Department of Chemistry & Biochemistry
2020-	Director of Research, California Metabolic Research Foundation
2020-	Director, Rees-Stealy Research Foundation Fellowship Program

COURSES TAUGHT

Fall 2005	Chem 560A – General Biochemistry
Spring 2006	Chem 560A – General Biochemistry
Fall 2006	Chem 365 – Biochemistry, Cell & Molecular Biology I
Spring 2007	Chem 100 – Introduction to General Chemistry
Fall 2007	Chem 100 – Introduction to General Chemistry
Spring 2008	Chem 365 – Biochemistry, Cell & Molecular Biology I MBio 610 – Advanced Topics in Molecular Biology (Guest lecturer, Structural Biology)
Summer 2008	Chem 365 – Biochemistry, Cell & Molecular Biology I
Fall 2008	Chem 365 – Biochemistry, Cell & Molecular Biology I MBio 610 – Advanced Topics in Molecular Biology (Guest lecturer, Structural Biology)
Spring 2009	Chem 100 – Introduction to General Chemistry
Fall 2009	Chem 100 – Introduction to General Chemistry
Spring 2010	Chem 560 – General Biochemistry Chem 763 – Cellular Regulation (Team taught with Dr. William Stumph) Chem 790 – Biochemistry Graduate Seminar MBio 610 – Advanced Topics in Molecular Biology (Guest lecturer, Structural Biology)
Summer 2010	Chem 365 – Biochemistry, Cell & Molecular Biology I
Fall 2010	Chem 365 – Biochemistry, Cell & Molecular Biology I
Spring 2011	Chem 560 – General Biochemistry Chem 790 – Biochemistry Graduate Seminar Chem 791 – Biochemistry Research Seminar MBio 610 – Advanced Topics in Molecular Biology (Guest lecturer, Structural Biology)
Fall 2011	Chem 365 – Biochemistry, Cell & Molecular Biology I
Spring 2012	Chem 562 – Intermediary Metabolism Chem 790 – Biochemistry Graduate Seminar Chem 791 – Biochemistry Research Seminar

Fall 2012	Chem 100 – Introduction to General Chemistry
Spring 2013	Chem 562 – Intermediary Metabolism Chem 790 – Biochemistry Graduate Seminar Chem 791 – Biochemistry Research Seminar
Summer 2013	Chem 365 – Biochemistry, Cell & Molecular Biology I
Fall 2013	Chem 100 – Introduction to General Chemistry
Spring 2014	Chem 763 – Cellular Regulation: Biophysical Chemistry Chem 790 – Biochemistry Graduate Seminar Chem 791 – Biochemistry Research Seminar
Fall 2014	Chem 100 – Introduction to General Chemistry Chem 560 – General Biochemistry
Spring 2015	Chem 562 – Intermediary Metabolism Chem 790 – Biochemistry Graduate Seminar
Fall 2015	Chem 100 – Introduction to General Chemistry Chem 560 – General Biochemistry
Spring 2016	Chem 562 – Intermediary Metabolism Chem 790 – Biochemistry Graduate Seminar
Summer 2016	Chem 365 – Biochemistry, Cell & Molecular Biology I
Spring 2017	Chem 562 – Intermediary Metabolism Chem 790 – Biochemistry Graduate Seminar
Fall 2017	Chem 100 – Introduction to General Chemistry Chem 790 – Biochemistry Graduate Seminar Chem 791 – Biochemistry Research Seminar
Spring 2018	Chem 562 – Intermediary Metabolism
Summer 2018	Chem 365 – Biochemistry, Cell & Molecular Biology I
Fall 2018	Chem 365 – Biochemistry, Cell & Molecular Biology I Chem 790 – Biochemistry Graduate Seminar Chem 791 – Biochemistry Research Seminar
Spring 2019	Chem 560 – General Biochemistry Chem 562 – Intermediary Metabolism
Summer 2019	Chem 365 – Biochemistry, Cell & Molecular Biology I
Fall 2019	Chem 100 – Introduction to General Chemistry
Spring 2020	Chem 100 – Introduction to General Chemistry
Summer 2020	Chem 365 – Biochemistry, Cell & Molecular Biology I
Fall 2020	Chem 100 – Introduction to General Chemistry
Spring 2021	Chem 562 – Intermediary Metabolism Chem 795 – Chemistry Seminar

SEMINAR SPEAKERS HOSTED

- 1) Dr. Bradley J. Nolen, Department of Molecular Cellular & Developmental Biology, Yale University. “Biophysical studies of Arp2/3 complexes and dynamics of actin filaments.” SDSU Molecular Biology Institute Seminar. December 7, 2006
- 2) Dr. Case McNamara, Structural Biology/Drug Discovery, The Genomics Institute of the Novartis Research Foundation. “The twisted molecular design of the streptococcal M1 protein.” SDSU Structural Biology Program Seminar. December 3, 2008

- 3) Dr. Jeff Lee, Department of Immunology, The Scripps Research Institute. “Techniques, tools and tactics used in the structure determination of the Ebola virus glycoprotein.” SDSU Structural Biology Program Seminar. December 10, 2008
- 4) Dr. Melanie Cocco, Department of Molecular Biology and Biochemistry, University of California Irvine. “Proteins on the edge (of the lipid bilayer).” SDSU Department of Chemistry & Biochemistry Seminar. October 16, 2009
- 5) Dr. Ulrich Müller, Department of Chemistry & Biochemistry, University of California San Diego. “Catalytic RNAs for mRNA repair.” SDSU Department of Chemistry & Biochemistry Seminar. April 9, 2010
- 6) Dr. Hector Viadiu, Department of Chemistry & Biochemistry, University of California San Diego. “Structural studies of p53 regulation.” SDSU Department of Chemistry & Biochemistry Seminar. April 30, 2010
- 7) Dr. Teru Nakagawa, Department of Chemistry & Biochemistry, University of California San Diego. “Molecular assembly of AMPA receptors.” SDSU Molecular Biology Institute Seminar. May 6, 2010.
- 8) Dr. Nathan Gianneschi, Department of Chemistry & Biochemistry, University of California San Diego. “DNA, peptides and enzymes as building blocks for polymeric nanoscale materials.” SDSU Department of Chemistry & Biochemistry Seminar. November 12, 2010
- 9) Dr. Feng Guo, Department of Biological Chemistry, University of California Los Angeles School of Medicine. “Potential functions of heme and iron in microRNA biogenesis.” SDSU Department of Chemistry & Biochemistry Seminar. April 22, 2011
- 10) Dr. Maitrayee Das Gupta, Department of Biochemistry, Calcutta University. “Structure/Function similarities between a plant receptor-like kinase and the human Interleukin-1 Receptor Associated Kinase-4.” SDSU Department of Chemistry & Biochemistry Seminar. June 28, 2011
- 11) Dr. Bradley J. Nolen, Department of Chemistry and Institute of Molecular Biology, University of Oregon. “How small molecule inhibitors and regulatory proteins control actin filament nucleation mediated by Arp2/3 complex.” SDSU Department of Chemistry & Biochemistry Seminar. November 4, 2011
- 12) Dr. Scott B. Hansen, Laboratory of Molecular Neurobiology & Biophysics, Rockefeller University. “A crystal clear picture for PIP₂ activation of the inward rectifying potassium channel Kir.” SDSU Department of Chemistry & Biochemistry Seminar. December 2, 2011
- 13) Dr. Randall T. Peterson, Charles and Ann Sanders Massachusetts General Hospital Research Scholar, Harvard Medical School. “Fish, heatmaps, and the discovery of neuroactive drugs.” SDSU Biological Sciences Seminar. February 6, 2012
- 14) Dr. Joel Griffitts, Department of Microbiology & Molecular Biology, Brigham Young University. “Understanding instability in the rhizobium-legume symbiosis.” SDSU Molecular Biology Institute Seminar. April 26, 2012
- 15) Dr. Malini Sen, Cancer Biology & Inflammatory Disorder Division, Indian Institute of Chemical Biology. “Role of Wnt signaling in monocyte/macrophage survival and phagocytosis.” SDSU Molecular Biology Institute Seminar. September 20, 2012
- 16) Dr. Edith (Phoebe) Glazer, Department of Chemistry, University of Kentucky. “Exploiting coordination chemistry for the development of novel anticancer agents.” SDSU Department of Chemistry & Biochemistry Seminar. October 12, 2012
- 17) Dr. Katherine Kantardjieff, College of Physical Science and Mathematics, California State University—San Marcos. “The (mis)conduct of science in the information age.” SDSU Department of Chemistry & Biochemistry Seminar. October 19, 2012
- 18) Dr. Simpson Joseph, Department of Chemistry & Biochemistry, University of California San Diego. “Mechanism of translational control by the Fragile X mental retardation protein.” SDSU Department of Chemistry & Biochemistry Seminar. October 26, 2012

- 19) Dr. Phil Dawson, Department of Chemistry, The Scripps Research Institute. “Chemoselective approaches for the synthesis of proteins and assembly of nanoparticles.” SDSU Department of Chemistry & Biochemistry Seminar. February 8, 2013
- 20) Dr. Ulrich Müller, Department of Chemistry & Biochemistry, University of California San Diego. “A new ribozyme for the RNA world.” SDSU Department of Chemistry & Biochemistry Seminar. May 3, 2013.
- 21) Dr. Lei Wang, The Jack H. Skirball Center for Chemical Biology & Proteomics, The Salk Institute for Biological Sciences. “Genetically encoding unnatural amino acids to study signaling proteins.” SDSU Department of Chemistry & Biochemistry Seminar. May 10, 2013
- 22) Dr. Steven Johnson, Department of Microbiology and Molecular Biology, Brigham Young University. “Chromatin patterns, meta-shapes and transgene expression.” SDSU Biology Department Seminar. June 24, 2013
- 23) Dr. Tapan Biswas, Department of Chemistry & Biochemistry, University of California San Diego. “Bacteriophage Lambda DNA integrase structure and mechanism.” SDSU Department of Chemistry & Biochemistry Seminar. October 11, 2013
- 24) Dr. Erica Ollman Saphire, Department of Immunology & Microbial Science, The Scripps Research Institute. “Ebola virus matrix: Structural plasticity begets multiple functions in the virus life cycle.” SDSU Molecular Biology Institute Seminar. October 24, 2013
- 25) Dr. Pieter Dorrestein, Institute for Metabolomics Medicine, Skaggs School of Pharmacy & Pharmaceutical Sciences, Departments of Pharmacology, Chemistry and Biochemistry, University of California San Diego. “A ‘GoogleMAP’-type molecular view of microbes—from culture to people.” SDSU Department of Chemistry & Biochemistry Seminar. October 25, 2013
- 26) Dr. Boguslaw Stec, Sanford-Burnham Medical Research Institute. “Trapping and visualization of catalytic intermediates.” SDSU Department of Chemistry & Biochemistry Seminar. March 14, 2014
- 27) Dr. Eileen J. Kennedy, Department of Pharmaceutical & Biomedical Sciences, College of Pharmacy, University of Georgia. “Design of chemically modified peptides to study regulation of protein kinases.” SDSU Department of Chemistry & Biochemistry Seminar. December 12, 2014
- 28) Dr. Neal Devaraj, Department of Chemistry & Biochemistry, University of California San Diego. “Advancing bioorthogonal chemical reactions for applications in imaging and bottom-up synthetic biology.” SDSU Department of Chemistry & Biochemistry Seminar. March 13, 2015
- 29) Dr. Jacky Chi Ki Ngo, School of Life Sciences, The Chinese University of Hong Kong. “Splicing kinase SRPK2 possesses distinct mechanisms for the phosphorylation of SR proteins.” SDSU Molecular Biology Institute Seminar. June 23, 2015
- 30) Dr. Roy Wollman, Department of Chemistry & Biochemistry, University of California San Diego. “Reliable signal transduction.” SDSU Department of Chemistry & Biochemistry Seminar. September 4, 2015
- 31) Dr. Nathan E. Lewis, Department of Pediatrics, University of California San Diego School of Medicine. “Elucidating post-translational modification function in the whole cell context: How the PTM tail wags the dog.” SDSU Department of Chemistry & Biochemistry Seminar. October 9, 2015
- 32) Dr. Jacob Durrant, Department of Chemistry & Biochemistry, University of California San Diego. “Computer-aided drug design: From basic science to clinical applications.” SDSU Department of Chemistry & Biochemistry Seminar. January 22, 2016
- 33) Dr. James McKerrow, Skaggs School of Pharmacy, University of California San Diego. “Developing drugs for neglected tropical diseases.” SDSU Department of Chemistry & Biochemistry Seminar. February 5, 2016
- 34) Dr. Corey Dambacher, Department of Integrative Structural and Computational Biology, The Scripps Research Institute. “Electron microscopy analysis of the proteasome deubiquitinases from low to atomic resolution.” SDSU Department of Chemistry & Biochemistry Seminar. February 19, 2016

- 35) Dr. Patrick G. Hogan, Division of Signaling and Gene Expression, La Jolla Institute for Allergy and Immunology. "Calcium signalling at ER-plasma membrane junctions." SDSU Department of Chemistry & Biochemistry Seminar. April 21, 2017
- 36) Dr. Jamie Schiffer, Department of Chemistry & Biochemistry, University of California San Diego. "Integrating computational and experimental approaches for understanding protein-protein interactions." SDSU Department of Chemistry & Biochemistry Seminar. September 15, 2017
- 37) Dr. Roland Wolkowicz, Department of Biology, San Diego State University. "Why chemists need flow cytometry." SDSU Department of Chemistry & Biochemistry Seminar. September 22, 2017.
- 38) Dr. Tracy M. Handel, Department of Pharmacology, UC San Diego Skaggs School of Pharmacy and Pharmaceutical Sciences. "Chemokine receptor structure, activation and inhibition." SDSU Department of Chemistry & Biochemistry Seminar. September 29, 2017
- 39) Dr. Jessica K. Bell, Department of Chemistry & Biochemistry, University of San Diego. "Getting SIKEd - the many misadventures of defining structure and function." SDSU Department of Chemistry & Biochemistry Seminar. October 20, 2017
- 40) Dr. Gourisankar Ghosh, Department of Chemistry & Biochemistry, University of California San Diego. "Discovery of a ubiquitous splice signal in humans." SDSU Department of Chemistry & Biochemistry Seminar. April 13, 2018
- 41) Drs. James Shigley and Mike Breeding, GIA Gem Laboratory, Gemological Institute of America. "Identifying gemstones—Are they real?" SDSU Department of Chemistry & Biochemistry Seminar. May 4, 2018
- 42) Dr. Rebekah Gundry, Department of Biochemistry, Medical College of Wisconsin. "Mapping the cardiomyocyte surfaceome: New tools and technologies for studying differentiation and disease." SDSU Department of Chemistry & Biochemistry Seminar. June 5, 2018
- 43) Dr. Partho Ghosh, Department of Chemistry & Biochemistry, University of California San Diego. "Adaptation through massive protein sequence variation." SDSU Department of Chemistry & Biochemistry Seminar. September 14, 2018
- 44) Dr. Anjana Rao, Division of Signaling and Gene Expression, La Jolla Institute for Allergy and Immunology. "Transcriptional and epigenetic regulation in cancer and cancer immunotherapy." SDSU Molecular Biology Institute Seminar. October 25, 2018
- 45) Dr. Arthur Hauenstein, Smoc Therapeutics and Dr. Danielle DiTirro, Department of Biology Brandeis University. "Two stories of Boston area biology: 1) Primary cilia, ciliopathies, and a Tubby tale; 2) An aggresome-like mechanism mediates NLRP3 and Pyrin inflammasome activation." SDSU Department of Chemistry & Biochemistry Seminar. September 19, 2019
- 46) Dr. Leo Pallanck, Department of Genome Sciences, University of Washington. "The origin and fate of somatic mitochondrial DNA mutations." SDSU Special Joint Biochemistry/Biology Seminar in Genomics. November 1, 2019

EXTERNALLY FUNDED RESEARCH

- | | |
|-----------|---|
| 2005-2007 | Principal investigator, "Murr1 inhibition of NF- κ B-dependent HIV transcription" Universitywide AIDS Research Program Idea Grant ID05-SDSUF-014, \$125,000 |
| 2007 | Principal investigator, "Biochemical characterization of human and fly I κ B kinases" CSU Program in Education and Research in Biotechnology (CSUPERB) Faculty-Student Collaborative Research Seed Grant, \$13,500 |

- 2008 Principal investigator, “Confirming target gene silencing by cytotoxic antisense oligonucleotides”
Sky Genetics, Inc., \$42,577
- 2008-2011 Collaborator, “Structure of myosin chaperone UNC-45 and its role in skeletal muscle disease”—
Dr. Sanford I. Bernstein, PI
NIH/National Institute of Arthritis and Musculoskeletal and Skin Diseases
R01AR055958, \$540,000
- 2009-2012 Principal investigator, “Structural biology of the IκB Kinase beta subunit”
American Cancer Society Research Scholar Grant
RSG-08-287-01-GMC, \$600,000
- 2009-2013 Collaborator, “Genetics and molecular biology of myosin”—Dr. Sanford I. Bernstein, PI
NIH/National Institute of General Medical Sciences
R01GM32443, \$1,125,000
- 2009 Collaborator, “Structure based design of humanized monoclonal antibodies that recognize bioactive lipids”—Dr. Jon Wojciak, PI
NIH/National Institute of General Medical Sciences
R43GM088956-01, \$113,129
- 2009-2010 Collaborator, “ARRA: Pathways of lambda site-specific recombination”—Dr. Anca Segal, PI
NIH/National Institute of General Medical Sciences
R01GM052847-11S1, \$195,378
- 2011-2014 Principal investigator, “Chemistry and evolutionary conservation of a naturally occurring metalloantibody”
NSF/Chemistry: Chemistry of Life Processes
CHE-1112547, \$400,000
- 2013-2018 Collaborator, “Mechanism of myosin chaperone UNC-45: Structural, functional & genetic approaches”—Dr. Sanford I. Bernstein, PI
NIH/National Institute of Arthritis and Musculoskeletal and Skin Diseases
R01AR055958, \$1,588,440
- 2013-2017 Collaborator, “Genetics and molecular biology of striated muscle myosin”—Dr. Sanford I. Bernstein, PI
NIH/National Institute of General Medical Sciences
R01GM032443, \$1,850,659
- 2014-2015 Principal investigator, “Measuring equilibrium binding affinity of biological macromolecules in solution by thermophoresis”
DoD/Research and Education Program for Historically Black Colleges and Universities and Minority-Serving Institutions (HBCU/MI) Equipment/Instrumentation
W911NF-14-1-0082, \$143,238

- 2016-2021 Collaborator, “Development of quinoxaline based IKKbeta inhibitors for KRas driven cancers”—Dr. Amarnath Natarajan, PI
NIH/National Cancer Institute
R01CA197999, \$355,646
- 2017 Principal investigator, “X-ray crystallography of InhibRx antibody complexes”
InhibRx, LLC, \$22,500
- 2017-2022 Collaborator, “Genetics and molecular biology of striated muscle myosin”—Dr. Sanford I. Bernstein, PI
NIH/National Institute of General Medical Sciences
R01GM032443, \$1,850,659
- 2017-2018 Principal investigator, “X-ray crystallography of bispecific camelid antibodies in complex with a bacterial protein antigen”
CSU Program in Education and Research in Biotechnology (CSUPERB)
Entrepreneurial Joint Venture Matching Grant, \$25,000
- 2018-2023 Co-Lead, “SDSU HealthLINK center for transdisciplinary health disparities research: Obesity and cancer” —Drs. Guadalupe X. Ayala and Kristen Wells, Co-PIs
NIH/National Institute on Minority Health and Health Disparities
U54MD012397, \$4,364,734
- 2019-2021 Collaborator, “Defining defects in myosin structure and function that cause dominant spondylocarpotarsal synostosis” —Dr. Sanford I. Bernstein, PI
NIH/National Institute of Arthritis and Musculoskeletal and Skin Diseases
R21AR074407, \$110,000

INTERNALLY FUNDED RESEARCH

- 2005 Principal investigator, “Three dimensional structure of two curariform neurotoxins bound to the *Aplysia* acetylcholine binding protein”
SDSU University Grants Program FGIA and FDP programs, \$9,000
- 2010 Principal investigator, “Identification of a novel functional domain of human STS-1”
SDSU University Grants Program, \$10,000
- 2018 Principal investigator, “An *in vitro* fluorescence-based assay for IκBζ:NF-κB complex formation”
SDSU University Grants Program, \$10,000

GRADUATE STUDENTS SUPERVISED

- 1) Dan V. Trinh, M.S. Chemistry & Biochemistry, Fall 2005-Fall 2007 “Biochemical characterization of IκBζ interactions with NF-κB/DNA complexes”
- 2) Jacob D. Shaul, M.S. Cellular & Molecular Biology, Spring 2006-Spring 2008 “IKKβ phosphorylates IκBα with CK2-like specificity upon removal of C-terminal elements”

- 3) Ghazal Farhang, M.S. Chemistry & Biochemistry, Spring 2007-Summer 2008 “Assaying transcriptional activation by NF- κ B p50 Homodimer/I κ B ζ complexes on κ B DNA promoters”
- 4) Michaela Norrbom, M.S. Chemistry & Biochemistry, Spring 2007-Fall 2008 “Expression, purification, and *in vitro* characterization of the *Drosophila melanogaster* I κ B Kinase β subunit”
- 5) Jon Fleming, M.S. Cellular & Molecular Biology, Fall 2009-Summer 2010 “Crystallization and x-ray structure determination of the antigen binding portion of a humanized monoclonal anti-lysophosphatidic acid antibody”
- 6) Jesal Patel, M.S. Chemistry & Biochemistry, Fall 2009-Fall 2010 “Biochemical characterization of a phosphate-binding domain in STS-1”
- 7) Mark Villaluz, M.S. Chemistry & Biochemistry, Fall 2007-Fall 2010 “Purification and kinetic characterization of soluble Sphingomyelinases C and D”
- 8) Danielle DiTirro, M.S. Cellular & Molecular Biology, Fall 2009-Spring 2011 “Large-scale expression and characterization of a human multi-subunit IKK complex”
- 9) Frank Erasmus, M.S. Cellular & Molecular Biology, Fall 2011-Fall 2012 “Characterization of metal binding by the anti-sphingosine-1-phosphate metalloantibody LT1002”
- 10) Deepthi Anipindi, M.S. Chemistry & Biochemistry, Fall 2010-Fall 2012 “X-ray crystal structures of two thermostable metal binding variants of *Streptococcal* Protein G β 1 domain”
- 11) Ashlee King, M.S. Chemistry & Biochemistry, Fall 2011-Spring 2013 “Crystallization of nucleic acid complexes: NF- κ B p50 homodimer bound to G-IRE sequences and Holliday junctions bound to inhibitors of recombination”
- 12) Norman Zhu, Ph.D. Chemistry & Biochemistry, Fall 2005-Spring 2013 “Structure and biochemistry of I κ B ζ : A nuclear I κ B protein”
- 13) Arthur Hauenstein, Ph.D. Chemistry & Biochemistry, Spring 2006-Spring 2013 “The role of oligomerization in human IKK2 activation as revealed by structural and biophysical studies”
- 14) James Caldwell, Ph.D. Chemistry & Biochemistry, Fall 2005-Fall 2013 “First x-ray crystal structure of an insect cell myosin”
- 15) Scott Lashbrook, M.S. Chemistry & Biochemistry, Fall 2011-Fall 2014 “*In vitro* analysis of tyrosine auto-phosphorylation by the IKK2 enzyme”
- 16) Christy Milani, M.S. Cellular & Molecular Biology, Fall 2013-Spring 2015 “Ideal DNA binding site spacing by NF- κ B p50 homodimer”
- 17) Ellie Nguyen, M.S. Chemistry & Biochemistry, Fall 2013-Spring 2016 “Biochemical study of prolonged NF- κ B responses regulated by I κ B β ”
- 18) Peggy Chatfield, M.S. Chemistry & Biochemistry, Spring 2016-Summer 2016 “Feline Infectious Peritonitis: Biochemistry of the fatal hyperimmune response to Feline Enteric Coronavirus”
- 19) Yunjin (Sheri) Wu, M.S. Chemistry & Biochemistry, Fall 2016-Spring 2018 “An expression system for antibody and engineered kinases using insect cell suspension culture”
- 20) Elinaz Farokhi, Ph.D. Chemistry & Biochemistry, Fall 2014-Spring 2020 “Engineering novel selectivity into metalloantibodies and targeting PcrV”
- 21) Danielle Slemmons, M.S. Cellular & Molecular Biology, Spring 2020-Summer 2020 “Coupling of two cell-based counter screens to reveal potential antivirals against dengue virus”
- 22) Myung Soo Ko, Ph.D. Chemistry & Biochemistry, Fall 2017-Fall 2020 “Understanding the role of NEMO in IKK activation”
- 23) Tom McDowell, M.S., Fall 2015
- 24) W. Eric Rogers, Ph.D., Fall 2011
- 25) Samantha Cohen, Ph.D., Fall 2014
- 26) Ryne Holmberg, Ph.D., Fall 2016
- 27) Matthew Mealka, M.S., Fall 2018

28) Sally Luong, M.S., Fall 2019

UNDERGRADUATE STUDENT SPECIAL STUDY RESEARCH SUPERVISED

- 1) Heath Metzler (Spring 2006) "Murr1"
- 2) Yekaterina Y. Sharikova (Spring 2006) "Bioinformatic approach for studying I κ B Kinases"
- 3) Erin Takahashi (Spring 2006) "Differences in protein-protein interactions between I κ B α and I κ B ζ "
- 4) Sean Cahanding (Summer 2006) "Crystallization of a complex between NF- κ B p65 homodimer and I κ B α "
- 5) Jason Abbott (Fall 2006) "I κ BNS"
- 6) Natalie Jamgochian (Fall 2006) "I κ B ζ shows stronger binding affinity for p50 NF- κ B factor than p65"
- 7) Danielle Lucas (Fall 2006) "Patenting research inventions in a university setting"
- 8) Candice Alcantara (Spring 2007). "A C-terminal fragment of the *Drosophila* NF- κ B protein Relish"
- 9) Nicholas Brunn (Spring 2007) "Analysis of nuclear I κ B binding to NF- κ B dimers, with emphasis on Bcl-3 and I κ B ζ "
- 10) Nicole Glenn (Spring 2007) "The cloning of N-terminal COMMD1 (1-108) and the expression and purification of Cull1-Rbx1 in BL21(DE3) *E. coli*"
- 11) Roberto Martinez (Spring 2007) "Cloning of I κ BNS"
- 12) NikiSadat Mehdizadegan (Summer 2007) "The expression and purification of GST-I κ B ϵ "
- 13) Brian Kim (Fall 2007) "The cloning and purification of NF- κ B p50 and p65 protein constructs for application in future investigation"
- 14) Javier Bravo (Fall 2007) "COMMD1 (Murr1) binds to the Cull1 component of SCF-Type ubiquitin-protein ligases"
- 15) Daniel Unzicker (Spring 2008) "Cloning, expression, and purification of SMase C and D in BL21 (DE3) *E. coli*"
- 16) May Oo (Spring 2008) "Expression and purification of GST-I κ BNS for future investigations"
- 17) Ngan Le (Spring 2008) "Obstacles encountered during the purification of I κ B ϵ and proposed solutions"
- 18) Marvin Minas (Spring 2008) "Transformation and expression of COMMD6 and p50 in BL21 (DE3) *E. coli*"
- 19) Jonathan Fleming (Fall 2008) "Identification of a minimal complex for I κ B ζ -assisted transcriptional activation" and "Purification of apo LT1009 Fab fragment"
- 20) Vincent Siu (Fall 2008) "Interaction between HIV Vpr and human importin- α 3"
- 21) Skylar Clark (Fall 2008) "Expression and purification of corticotropin releasing hormone binding protein (CRH-BP) from SF9 cells"
- 22) Patricia Crivello (Spring 2009) "The VP1 capsid protein from JC polyomavirus"
- 23) Tony Dao (Fall 2008) "Protein purification of *Loxosceles arizonica* SMAse D"
- 24) Jawan Iskander (Spring 2009) "Cloning the BK viral capsid in XL1-Blue *E. coli* cells"
- 25) Kevin Carman (Spring 2009) "Expression and purification of Taq DNA polymerase in BL21 (DE3) pLysS *E. coli*"
- 26) Silvestre Rosas (Fall 2009) "Investigation into the binding of I κ B ζ to NF- κ B"
- 27) Zachary Gorden (Fall 2009) "Creating a BK-VP1 expression plasmid"
- 28) Matthuse Ramsis (Spring 2009) "Purification of Sphingomyelinase D dimer"
- 29) Valerie Engelke (Spring 2009) "Purification of the TPR domain of DmUNC-45 for x-ray crystallography"
- 30) Michael Niemeyer (Spring 2009) "Cloning of *Drosophila* Hsp83 cDNA from S2 cells"
- 31) Jacqueline Fritz (Fall 2010) "Recombinant expression and purification of Cactus fragment 1-124 and Full length: An I κ B homolog in *Drosophila melanogaster*"
- 32) Allen Washington, Jr. (Fall 2010) "Purification of active suppressor of T-cell receptor signaling (STS-1) phosphotyrosine binding motif"
- 33) Ali Hejazi (Spring 2011) "Investigating the interaction of *Drosophila* UNC-45 and Hsp83"

- 34) Maria Gutierrez (Spring 2011) "Phosphate dependency in interfacial metal bridging of an antibody and its antigen"
- 35) Cayla Martin (Spring 2011) "Cloning of Green Fluorescent Protein-Tagged *Drosophila melanogaster* UNC-45"
- 36) Cathrine Aivati (Fall 2011) "Structure-based design and cloning of a stable IKK2 construct"
- 37) Ahmed Farah (Fall 2011) "Crystallization and x-ray diffraction of a mutant oligomeric protein G variant"
- 38) Thaer Othman (Fall 2011) "Purification and crystallization of FbpA"
- 39) Dina Yacoub (Fall 2011) "Measuring metal binding affinity of the LT1002 antibody by flame atomic absorption spectroscopy"
- 40) Karen Nguyen (Spring 2012) "Expression and purification of NEMO"
- 41) Sarah Albayati (Spring 2012) "Expression and purification of human lysine-specific demethylase 1 (LSD1) in *E. coli*"
- 42) Rodaw Othman (Spring 2012) "Purification and crystallization of an hLSD1:CoREST1: Compound complex"
- 43) Mahosoth Thosy (Spring 2012) "An expression and purification protocol for recombinant human STS-1 Shc-binding domain"
- 44) Merta Cushing (Fall 2012) "The expression and purification of transcription factor Ets-1"
- 45) Christy Milani (Fall 2012) "Crystallization of a p50 homodimer:G-rich IRE DNA complex"
- 46) Megan Almazan (Fall 2013) "Hsp90 binding and interaction with UNC-45"
- 47) Aaron Ward (Fall 2013) "Distinct metalloantibodies use a similar binding motif for bridging metal cations"
- 48) Abdigani Ali (Fall 2013) "Crystallization and x-ray diffraction of proteins"
- 49) Daniela Gouran (Fall 2013) "Preparation of a GST-tagged UNC-45 expression plasmid"
- 50) Hannah Lollar (Fall 2013) "Hsp90 interaction with UNC-45"
- 51) Jeremy Borbon (Spring 2014) "Expression and purification of NF- κ B p50 homodimers"
- 52) Kayla Schenk (Spring 2014) "An assay for detecting phosphoesterase activity in an evolutionarily conserved metalloantibody"
- 53) Joshua Beverly (Spring 2014) "Mutagenesis of I κ B ζ and binding to p50"
- 54) Linda Honaker (Spring 2014) "Measuring NF- κ B binding to κ B DNA by MicroScale Thermophoresis"
- 55) Arianne Salunga (Fall 2014) "Recombinant expression and purification of *Drosophila* LaminC protein"
- 56) Lisa Acuna (Fall 2014) "Binding of κ B sequence DNA by the NF- κ B p50 homodimer"
- 57) Thomas McDowell (Fall 2014) "Structural and functional elucidation of the *Drosophila melanogaster* I κ B Kinase"
- 58) Jeffrey Noblet (Fall 2014) "MicroScale Thermophoresis: Measuring the affinity of κ B DNA binding by NF- κ B/Rel dimers"
- 59) Amanda Brambila (Spring 2015) "Culturing Raw 264.7 macrophage cells"
- 60) Diane Aceveda (Spring 2015) "Expression and purification of a histidine-tagged linear diubiquitin protein"
- 61) Stefany Rubio (Spring 2015) "Probing I κ B Kinase activity and specificity"
- 62) Leland Henderson (Fall 2015) "Cloning IKK substrate proteins for expression in *E. coli*"
- 63) Perla Peña Palomino (Fall 2015) "Binding and structural studies of the interaction between UNC-45 and Hsp83 from *Drosophila melanogaster*"
- 64) Matthew Johnson (Spring 2016) "Expression and purification of the anti-CD4 antibody Q425 Fab fragment from *E. coli*"
- 65) Taylor-Grace Priest (Spring 2016) "Molecular weight determination of *Drosophila* Hsp83:Unc-45 complex by SEC-MALS"
- 66) Maryan Osman (Fall 2016) "Mutagenesis of I κ B ζ expression plasmid for incorporation of unnatural amino acids"

- 67) Chris Makdesi (Fall 2016) “Determination of the effect of MPXA and citrate on the growth of SC27 soil bacteria”
- 68) Luigi Cangialosi (Fall 2016) “Preparation of samples for binding measurements of *Drosophila* IKK β and IKK γ ”
- 69) Courtney Todd (Spring 2017) “Soxhlet extraction of metal ions from MPXA”
- 70) Emilie Tate (Fall 2017) “Fura-2 calcium imaging by fluorescence microscopy in HeLa cells”
- 71) Joshua Mireles (Fall 2017) “Purification of NF- κ B dimerization domain for I κ B ζ binding studies”
- 72) Stephanie Feliciano (Spring 2018) “Expression of c-Src kinase domain in *E. coli*”
- 73) Matthew Mealka (Spring 2018) “Orf2_OA crystallization optimization and refinement”
- 74) Lovet Umeh (Spring 2018) “Purification of non-receptor tyrosine kinases expressed in *E. coli*”
- 75) Sara Torres-Robles (Spring 2018) “Probing UNC-45:Hsp83 protein interactions *in vitro*”
- 76) Samantha Barrera (Spring 2018) “The agricultural additive MPXA is a fulvic acid-rich chelator that selectively releases beneficial micronutrients”
- 77) Julia Hansen (Fall 2018) “*In vitro* kinase assay of mutant I κ B α proteins”
- 78) Harun Ahmed (Spring 2019) “Preparation of the pFGSTBac plasmid”
- 79) Olivia Musil (Spring 2019) “Exploring catalytic activity in a recombinant metalloantibody precursor protein”
- 80) Luis Baun (Spring 2019) “Purification of the RHR from an *Amphimedon queenslandica* NF- κ B protein”
- 81) Citlayi Villaseñor (Fall 2019) “Characterization of 2C10: an anti-double stranded DNA antibody”
- 82) Tyler Biasatti (Fall 2019) “Preparation of a GST-tetraubiquitin expression plasmid for *in vitro* binding assays”

GRADUATE STUDENT COMMITTEES

- 1) Li Heng, M.S. Physics, (August, 2006), Prof. Matt Anderson, chair. “Spatially modulated ultrafast pulses with a liquid crystal spatial light modulator”
- 2) Katerina Otrubova, M.S. Chemistry & Biochemistry, (October, 2007), Prof. Shelli McAlpine, chair. “The synthesis of Sansalvamide A derivatives and their cytotoxicity against drug-resistant colon cancer cell lines”
- 3) Jerome Santos, M.S. Engineering, (December, 2007), Prof. Mirat Gurol, chair. “Perchlorate adsorption onto granular activated carbon and subsequent desorption via sodium borohydride”
- 4) Chitra Rajakuberan, M.S. Biology, (June, 2008), Prof. Roland Wolkowicz, chair. “Expression of HIV-1 protease in mammalian cells”
- 5) Shinichiro Oku, M.S. Chemistry & Biochemistry, (July, 2008), Prof. Peter van der Geer, chair. “The role of SHC in receptor protein-tyrosine kinase signal transduction”
- 6) M. Reza Savari, M.S. Chemistry & Biochemistry, (November, 2008), Prof. Thomas Cole, chair. “Novel mixed organoboranes for reductive alkylation of quinones”
- 7) Nesreen H. Barakat, M.S. Chemistry & Biochemistry, (March, 2009), Prof. John Love, chair. “The correlation between protein stability, flexibility, and function”
- 8) Michael Gurney, M.S. Biology, (May, 2009), Prof. Kelly Doran, chair. “Role of surface expressed pili and fibrils in the pathogenesis of group B Streptococcal Disease”
- 9) Mun Kyuong Kim, M.S. Chemistry & Biochemistry, (May, 2009), Prof. William Stumph, chair. “Localization of domains within *Dm*SNAP50 that contact specific nucleotide positions in the U1 and U6 promoters”
- 10) Bradley Monk, M.S. Psychology, (September, 2010), Prof. Jennifer Thomas, chair. “The effects of perinatal choline supplementation on cholinergic system development in rats exposed to alcohol during the brain growth spurt”

- 11) Aditi Kibe, M.S. Chemistry & Biochemistry, (May, 2011), Prof. John Love, chair. “*In vivo* assays to assess protein aggregation propensity”
- 12) Lauren Aguado, M.S. Microbiology, (October, 2011), Prof. Roland Wolkowicz, chair. “Elucidation of the effects of wild type hepatitis C virus on host signaling cascades”
- 13) David Guimond, Ph.D. Cell & Molecular Biology, (August, 2012), Prof. Constantine Tsoukas, chair. “Treatment of experimental asthma using a novel peptide inhibitor of the inducible T cell kinase”
- 14) Scott Robinson, Ph.D. Cell & Molecular Biology, (September, 2012), Prof. Ralph Feuer, chair. “Mechanisms of coxsackievirus B3 dissemination and persistence in the host: Consequences for neurodegenerative disease”
- 15) Perry Shieh, M.S. Cell & Molecular Biology (November, 2012), Prof. Robert Metzger, chair. “Computational studies on tetrahydrobiopterin and tetrahydroneopterin”
- 16) Mario Navarro, Ph.D. Chemistry, (December, 2012), Prof. John Love, chair. “Biophysical and biochemical effects of mono-ubiquitination on engineered proteins”
- 17) Ryan Barker, M.S. Chemistry (April, 2013), Prof. Carl Carrano, chair. “Interaction of boron with the proteins FbpA and Fur isolated from *Marinobacter algicola* DG893.”
- 18) Yi-An Lai, M.S. Cell & Molecular Biology (May, 2013), Prof. Anca Segall, chair. “1. Kinetics study of phage lambda site-specific recombination 2. Inhibitors of fowlpox resolvase”
- 19) Cameron Smurthwaite, M.S. Cell & Molecular Biology (June, 2013), Prof. Roland Wolkowicz, chair. “Fluorescent genetic bar-coding for biological applications—Adaption of an assay for monitoring HIV-1 PR variants in mammalian cells”
- 20) Yvette Del Rosario, M.S. Biology (December, 2013), Prof. Kelly Doran, chair. “Characterization of intracellular trafficking of *Streptococcus agalactiae*”
- 21) Carrie Miranda, M.S. Biology (March, 2013), Prof. William Stumph, chair. “Baculoviral expression and purification of DmSNAPc for structural studies.”
- 22) Michael A. Gurney, Ph.D. Biology (October, 2014), Prof. Roberta Gottlieb, chair. “An analysis of autophagy in the aging murine heart.”
- 23) Danae Madrid, M.S. Chemistry (June, 2015), Prof. Jeffrey Gustafson, chair. “Atropisomeric benzamides and pedagogy in undergraduate organic chemistry.”
- 24) Roxana Flores, M.S. Biology (December, 2015), Profs. Victor Nizet and Kelly Doran, chairs. “A new format of monoclonal anti-PcrV antibodies for the therapeutic host clearance of *Pseudomonas aeruginosa*.”
- 25) Jin Joo Kang, Ph.D. Chemistry (December, 2015), Prof. William Stumph, chair. “Mapping the interactions of the multi-subunit general transcription factor IIIB (TFIIIB) with U6 promoter DNA by site-specific protein-DNA photo-cross-linking.”
- 26) Markus H. Ruetsche, Ph.D. Chemistry (August, 2016), Prof. John Love, chair. “Capturing *C. reinhardtii* with an engineered *Escherichia coli* net.”
- 27) Melissa Lokensgard, Ph.D. Chemistry (November, 2016), Prof. John Love, chair. “Beta-hairpin fusion to alpha-helical domains for exploring recombinant protein stability in *E. coli*.”
- 28) Inès Galtier d’Auriac, M.S. Biology (December, 2016), Prof. Forest Rohwer, chair. “Implications of platelet activating factor in coral physiology.”
- 29) Veronica Bichara, M.S. Biology (December, 2016), Prof. Roland Wolkowicz, chair. “Analysis of proteolysis of the Chikungunya virus proteome as target for antivirals.”
- 30) Darin Abbadessa, M.S. Biology (January, 2017), Prof. Roland Wolkowicz, chair. “Targeted discovery: Adaptation of a cell-based platform for the discovery of novel HIV envelope antivirals.”
- 31) Bryan Hancock, Ph.D. Biology (February, 2017), Prof. Kelly Doran, chair. “New models of *Streptococcal* disease for investigating bacterial and host factors involved in bacterial penetration of the blood-brain barrier.”

- 32) Wesley Williams, Ph.D. Biology (May, 2017), Prof. Roland Wolkowicz, chair. “Elucidating Hepatitis C Virus Core interactions with the host environment, specifically phosphorylated I κ B α .”
- 33) Artem Movsesyan, M.S. Biology (May, 2017), Prof. Ricardo Zayas, chair. “Role of Cullin-3 and Brick-a-brac, Tramtrack, Broadcomplex (BTB) genes in planarian tissue regeneration.”
- 34) Filippo Venturini, M.S. Chemistry (April, 2018), Prof. William Tong, chair. “Nonlinear laser wave-mixing detection methods for Chem/Bio agents and multiple sclerosis biomarkers using microarrays and microfluidics.”
- 35) Kyoko Yarimizu, Ph.D. Chemistry (April, 2018), Prof. Carl Carrano, chair. “The role of iron in potential algal-bacterial mutualisms as related to harmful algae blooms.”
- 36) Mohammed Malaikah, M.S. Biology (May, 2018), Prof. Roland Wolkowicz, chair. “Monitoring proteolytic activity of West Nile Virus in a cell-based assay for novel drug discovery.”
- 37) Anup Sarakki, M.S. Chemistry (December, 2018), Prof. Christopher Glembotski, chair. “Harnessing the therapeutic potential of the ATF6 branch of the endoplasmic reticulum stress response.”
- 38) Francesca Ventola, M.S. Biology (June, 2019), Prof. Roland Wolkowicz, chair. “Adapting a two-tag system that monitors transport and cleavage within the classical secretory pathway to discover novel antivirals against HIV Env protein.”
- 39) Kelly Robinson, M.S. Biology (December, 2019), Prof. Rulon Clark, chair. “Biochemical warfare: Coevolution of venom and venom resistance among rattlesnakes and mammal prey.”
- 40) Adriana Trujillo, Ph.D. Biology (April, 2020), Prof. Sanford Bernstein, chair. “*Drosophila* as a model for myosin-induced dilated cardiomyopathy.”
- 41) Diego Avellaneda-Matteo, Ph.D. Chemistry, (May, 2019), Prof. Christal Sohl, chair. “Understanding of the structure-function relationship of tumor-relevant IDH1 mutants: A kinetic investigation.”
- 42) Alex Escobar, M.S. Cell & Molecular Biology, (October, 2020), Prof. Roland Wolkowicz (Anca Segall), chair. “A cell-based assay to monitor the proteolytic activity of the Chikungunya Virus capsid protein to facilitate antiviral activity.”
- 43) Katrina Vuong, M.S. Chemistry (December, 2020), Prof. Diane Smith, chair. “Use of redox-responsive 4 H-bond ureidopyrimidone (UPY) array to control polymerization in a UPY-based supramolecular polymer.”
- 44) Brent White, M.S. Chemistry & Biochemistry (December, 2020), Prof. Peter Van der Geer, chair. “*In vitro* analysis of rationally designed multimerization sequences.”
- 45) Lucas Luna, Ph.D., Prof. Christal Sohl, chair.
- 46) Naduni Paranagama, Ph.D., Prof. Manal Swairjo, chair.
- 47) Brandon Molina, M.S., Prof. Stephanie Grainger, chair.
- 48) Jackie Lara, M.S., Prof. Carrie House, chair.
- 49) Andres Jimenez Salinas, Ph.D., Prof. Youngkwang Lee, chair.

REFEREED JOURNAL ARTICLES

- 1) Lamb J.D., Huxford T. & Czirr K.B. (1996). Capillary electrophoresis of anions in an untreated polypropylene hollow fiber. *J. Chromatogr. A* **739** 373-378.
- 2) Huang D.-B., Huxford T., Chen Y.-Q. & Ghosh G. (1997). The role of DNA in the mechanism of NF- κ B dimer formation: crystal structures of the dimerization domains of the p50 and p65 subunits. *Structure* **5** 1427-1436.
- 3) Malek S., Huxford T. & Ghosh G. (1998). I κ B α functions through direct contacts with the nuclear localization signals and the DNA binding sequences of NF- κ B. *J. Biol. Chem.* **273** 25427-25435.

- 4) Huxford T., Huang D.-B., Malek S. & Ghosh G. (1998). The crystal structure of the I κ B α :NF- κ B complex reveals mechanisms of NF- κ B inactivation. *Cell* **95** 759-770.
- 5) Phelps C., Sengchanthalangsy L.L., Huxford T. & Ghosh G. (2000). Mechanism of I κ B α binding to NF- κ B dimers. *J. Biol. Chem.* **275** 29840-29846.
- 6) Huxford T., Malek S., & Ghosh G. (2000). Preparation and crystallization of dynamic NF- κ B:I κ B complexes. *J. Biol. Chem.* **275** 32800-32806.
- 7) Malek S., Chen Y., Huxford T. & Ghosh G. (2001). I κ B β , but not I κ B α , functions as a classical cytoplasmic inhibitor of NF- κ B dimers by masking both NF- κ B nuclear localization sequences in resting cells. *J. Biol. Chem.* **276** 45225-45235.
- 8) Huxford T., Mishler D., Phelps C.B., Chen Y., Sengchanthalangsy L.L., Reeves R., Hughes C.A., Komives E.A. & Ghosh G. (2002). Solvent exposed non-contacting amino acids play a critical role in NF- κ B:I κ B α complex formation. *J. Mol. Biol.* **324** 587-597.
- 9) Malek S., Huang D.-B., Chen Y., Huxford T., Ghosh S. & Ghosh G. (2003). X-ray crystal structure of an I κ B β :NF- κ B p65 homodimer complex. *J. Biol. Chem.* **278** 23094-23100.
- 10) Hughes C.A., Bergqvist S., Huxford T., Ghosh G. & Komives E.A. (2004). Biophysical characterization of the free I κ B α ankyrin repeat domain in solution. *Protein Sci.* **13** 1767-1777.
- 11) Hansen S.B., Sulzenbacher G., Huxford T., Marchot P., Taylor, P.W. & Bourne, Y. (2005). Structures of Aplysia AChBP complexes with agonists and antagonists reveal distinctive binding interfaces and conformations. *EMBO J.* **24** 3635-3646.
- 12) Bergqvist S., Croy C.H., Kjaergaard M., Huxford T., Ghosh G. & Komives E.A. (2006). Thermodynamics reveal that helix four in the NLS of NF- κ B p65 anchors I κ B α , forming a very stable complex. *J. Mol. Biol.* **360** 421-434.
- 13) Trinh D.V., Zhu N., Farhang G., Kim B.J. & Huxford T. (2008). The nuclear I κ B protein I κ B ζ specifically binds NF- κ B p50 homodimers and forms a ternary complex on κ B DNA. *J. Mol. Biol.* **379** 122-135.
- 14) Shaul J.D., Farina A. & Huxford T. (2008). The human IKK β subunit kinase domain displays CK2-like phosphorylation specificity. *Biochem. Biophys. Res. Commun.* **374** 592-597.
- 15) Wojciak J.M., Zhu N., Schuerenberg K.T., Moreno K., Shestowsky W.S., Hiraiwa M., Sabbadini R. & Huxford T. (2009). The crystal structure of sphingosine-1-phosphate in complex with a Fab fragment reveals metal bridging of an antibody and its antigen. *Proc. Natl. Acad. Sci. USA* **106** 17717-17722.
- 16) Lee C.F., Hauenstein A.V., Fleming J.K., Gasper W.C., Engelke V., Sankaran B., Bernstein S.I. & Huxford T. (2011). X-ray crystal structure of the UCS domain-containing UNC-45 myosin chaperone from *Drosophila melanogaster*. *Structure* **19** 397-408.
- 17) Fleming J.K., Wojciak J.M., Campbell, M.A. & Huxford T. (2011). Biochemical and structural characterization of lysophosphatidic acid binding by a humanized monoclonal antibody. *J. Mol. Biol.* **408**

462-476.

- 18) Caldwell J.T., Melkani G.C., Huxford T. & Bernstein S.I. (2012). Transgenic expression and purification of myosin isoforms using the *Drosophila melanogaster* indirect flight muscle system. *Methods* **56** 25-32.
- 19) Polley S., Huang D.-B., Hauenstein A.V., Fusco A.J., Zhong X., Vu D., Schröfelbauer B., Kim Y., Hoffmann A., Verma I.M., Ghosh G. & Huxford T. (2013). A structural basis for IκB Kinase 2 activation via oligomerization-dependent *trans* auto-phosphorylation. *PLoS Biology* **11** e1001581.
- 20) Weerasinghe A.J., Amin S.A., Barker R., Othman T., Romano A.N., Parker Siburt C.J., Tisnado J., Lambert L.A., Huxford T., Carrano C.J. & Crumbliss A.L. (2013). Borate as a synergistic anion for *Marinobacter algicola* Ferric Binding Protein, FbpA: A role for boron in iron transport in marine life. *J. Am. Chem. Soc.* **135** 14504-14507.
- 21) Hauenstein A.V., Rogers W.E., Shaul J.D., Huang D.-B., Ghosh G. & Huxford T. (2014). Probing kinase activation and specificity with an engineered monomeric IKK2. *Biochemistry* **53** 2064-2073.
- 22) Geronimo I., Denning C.A., Rogers W.E., Othman T., Huxford T., Heidary D.K., Glazer E.C. & Payne C.M. (2016). Effect of mutation and substrate binding on the stability of Cytochrome P450_{BM3} variants. *Biochemistry* **55** 3594-3606.
- 23) King A.N., Fleming J.K., Knapik S.S., Visentin B., Wojciak J.M. & Huxford T. (2017). High-affinity pan-specific monoclonal antibodies that target cysteinyl leukotrienes and show efficacy in an acute model of colitis. *J. Lipid Res.* **58** 1386-1398.
- 24) Mulero M.C., Sahabi S., Ko M.S., Schiffer J.M., Huang D.-B., Wang V.Y.-F., Amaro R.E., Huxford T. & Ghosh G. (2018). Protein cofactors are essential for high-affinity DNA binding by the nuclear factor κB RelA subunit. *Biochemistry* **57** 2943-2957.
- 25) Maniaci B., Lipper C.H., Anipindi D.L., Erlandsen H., Cole J.L., Stec B., Huxford T. & Love J.J. (2019). Design of high-affinity metal-controlled protein dimers. *Biochemistry* **58** 2199-2207.
- 26) Caldwell J.T., Mermelstein D.J., Walker R.C., Bernstein S.I. & Huxford T. (2020). X-ray crystallographic and molecular dynamic analyses of *Drosophila melanogaster* embryonic muscle myosin define domains responsible for isoform-specific properties. *J. Mol. Biol.* **432** 427-447.
- 27) Farokhi E., Fleming J.K., Erasmus M.F., Ward A.D., Wu Y., Gutierrez M.G., Wojciak J.M. & Huxford T. (2020). Ion binding properties of a naturally occurring metalloantibody. *Antibodies* **9** 10.
- 28) Ko M.S., Biswas T., Mulero M.C., Bobkov A.A., Ghosh G. & Huxford T. (2020). Structurally plastic NEMO and oligomerization prone IKK2 subunits define the behavior of human NEMO:IKK2 complexes in solution. *BBA – Prot. Proteom.* **1868** 140526.

REVIEW ARTICLES

- 1) Ghosh G., Huang D.-B. & Huxford T. (1999). Structural insights into NF-κB/IκB signaling. *Gene Ther. Mol. Biol.* **4** 75-82.

- 2) Huxford T., Malek S. & Ghosh G. (1999). Structure and mechanism in NF- κ B/I κ B signaling. *Cold Spring Harbor Symp. Quant. Biol.* **64** 533-540.
- 3) Ghosh G., Huang D.-B. & Huxford T. (2004). NF- κ B DNA binding site molecular mimicry by a selected RNA aptamer. *Curr. Opin. Struct. Biol.* **14** 21-27.
- 4) Huxford T. & Ghosh G. (2005). Inhibition of transcription factor NF- κ B activation by κ B-Ras. *Methods Enzymol.* **407** 527-534.
- 5) Huxford T. & Ghosh G. (2009). A structural guide to proteins of the NF- κ B signaling module. *Cold Spring Harbor Perspectives in Biology.* **1** a000075.
- 6) Mulero M.C., Wang V.Y.-F., Huxford T & Ghosh G. (2019). Genome reading by the NF- κ B transcription factors. *Nucleic Acids Res.* **47** 9967-9989.

BOOK CHAPTERS

- 1) Huxford T. & Ghosh, G. (2002). I κ B proteins. In, *Wiley Encyclopedia of Molecular Medicine*, John Wiley & Sons, Inc. 1712-1716.
- 2) Huxford T. & Ghosh, G. (2003). The structural biology of NF- κ B. In, *Nuclear Factor κ B: Regulation and Role in Disease*. Edited by Rudi Beyaert R. Kluwer publishers, Netherlands 179-200.
- 3) Huxford T. & Ghosh G. (2006). Structural analysis of NF- κ B and I κ B proteins. In, *NF- κ B/Rel Transcription Factor Family*. Edited by Hsiou-Chi Liou. Landes Bioscience, Georgetown, Texas 1-11.
- 4) Huxford T., Moorthy A.K. & Ghosh, G. (2006). κ B-Ras: a small GTPase that influences NF- κ B signaling. In, *RAS Family GTPases*. Proteins and Cell Regulation series, Volume 4. Edited by Channing J. Der. Springer Science, Dordrecht, The Netherlands 341-352.
- 5) Moorthy A.K., Huxford T. & Ghosh, G. (2007). Structural aspects of NF- κ B and I κ B proteins. In, *Handbook of transcription factor NF- κ B*. Edited by Sankar Ghosh. Taylor and Francis CRC Press, Boca Raton, Florida 9-24.
- 6) Ghosh G., Huang D.-B. & Huxford T. (2010). Recognition of nucleic acids by transcription factor NF- κ B. In, *Biophysics of DNA-Protein interactions: From single molecules to biological systems*. Edited by Mark C. Williams & L. James Maher, III. Springer-Verlag, New York 85-106.
- 7) Huxford T., Hoffmann A. & Ghosh G. (2011). Understanding the logic of I κ B:NF- κ B regulation in structural terms. In, *Current Topics Microbiology and Immunology: NF- κ B in Health and Disease*. Edited by Michael Karin. Springer-Verlag, Heidelberg, Germany 1-24.
- 8) Huxford T. (2013). X-ray crystallography. In, *Brenner's Encyclopedia of Genetics, 2nd Edition*. Edited by Stanley Maloy and Kelly Hughes. Academic Press 366-368.

- 9) Mulero M.C., Huxford T. & Ghosh G. (2019). NF- κ B, I κ B, and IKK: Integral components of immune system signaling. In, *Structural Immunology. Advances in Experimental Medicine and Biology*. Edited by T. Jin and Q. Yin. Springer, Singapore **1127** 207-226.

PATENTS

- 1) Sabbadini R.A., Huxford T. & Wojciak J.M. (2013). Antibody design using anti-lipid antibody crystal structures. U.S. Patent 8,401,799, filed June 4, 2010, and issued March 11, 2013.

INVITED SEMINARS

- 1) "The I κ B α /NF- κ B complex crystal structure reveals inhibitory mechanisms of an HIV transcription factor." 16th Annual AIDS Investigator's Meeting and Second Annual Conference on AIDS Research in California. February 12, 1999, San Diego, CA
- 2) "The I κ B α /NF- κ B complex crystal structure reveals mechanisms of NF- κ B inactivation." The 14th West Coast Protein Crystallography Workshop. March 14-17, 1999. Asilomar, CA
- 3) "Advances in NF- κ B/I κ B structural biology." The La Jolla Crystallography Consortium. October 3, 2001. The Salk Institute, La Jolla, CA
- 4) "Specificity in the interaction of transcription factor NF- κ B and the I κ B inhibitor protein." December 7, 2001. The Arizona Cancer Center, University of Arizona, Tucson, AZ
- 5) "Regulation of transcription factor NF- κ B by I κ B inhibitor proteins." Martin D. Kamen Prize Lecture. September 25, 2003. University of California, San Diego, La Jolla, CA
- 6) "Structural biology and the NF- κ B signal transduction pathway." November 17, 2004. Department of Chemistry, University of Toledo, Toledo, OH
- 7) "Structural biology and the NF- κ B signal transduction pathway." November 22, 2004. Department of Biochemistry & Biophysics, Rochester University School of Medicine, Rochester, NY
- 8) "Structural biology and the NF- κ B signal transduction pathway." November 30, 2004. Department of Chemistry & Biochemistry, San Diego State University, San Diego, CA
- 9) "Structural biology and the NF- κ B signal transduction pathway." December 9, 2004. Department of Chemistry & Biochemistry, University of Notre Dame, South Bend, IN
- 10) "Structural biology and the NF- κ B signal transduction pathway." January 5, 2005. Department of Biochemistry, Medical College of Wisconsin, Milwaukee, WI
- 11) "Structural biology and the NF- κ B signal transduction pathway." January 11, 2005, Department of Structural Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA
- 12) "Structural biology and NF- κ B signaling." Molecular Biology Institute, October 6, 2005, San Diego State University

- 13) "My pathway to becoming a tenure-track professor." Minority Biomedical Research Support (MBRS) Seminar Series, October 6, 2006, San Diego State University
- 14) "Murr1 inhibition of NF- κ B-dependent HIV transcription." 21st HIV/AIDS Biennial Investigators' Meeting and 7th Conference on AIDS Research in California. February 24, 2006, San Mateo, CA
- 15) "The job search." Professional Development Week: Academia—Life in the Towers, May 4, 2007, The Burnham Institute, La Jolla, CA
- 16) "I κ B ζ : a nuclear activator of NF- κ B-dependent gene expression." LDS Life Science Research Symposium, August 18, 2007, Salt Lake City, Utah
- 17) "I κ B ζ binds the NF- κ B p50 homodimer on IL-6 promoter DNA." Department of Biology Graduate Student Seminar Series, September 19, 2007, San Diego State University
- 18) "The job search." The Torrey Pines Mesa Postdoctoral Training Consortium (Burnham, TSRI, UCSD), 2nd San Diego Lab Management Symposium, January 19, 2008, The Salk Institute, La Jolla, CA
- 19) "I κ B ζ specifically binds NF- κ B p50 homodimer and forms a ternary complex on κ B DNA." Keystone Symposium—NF- κ B. February 12-17, 2008, Banff, Alberta, Canada
- 20) "Specific recognition of serines-32 and -36 on I κ B α by the human IKK β subunit." Department of Biology Graduate Student Seminar Series, September 17, 2008, San Diego State University
- 21) "Biochemical characterization of molecules and molecular complexes of the NF- κ B signaling pathway." Department of Chemistry & Biochemistry Seminar, October 3, 2008, San Diego State University
- 22) "Non-catalytic regions of the human IKK β subunit are required for specific phosphorylation of I κ B α Ser-32 and -36 *in vitro*." Protein Sciences and Structural Biology, Signal Pharmaceuticals, October 29, 2008, San Diego, CA
- 23) "Finding an academic job." The Torrey Pines Mesa Postdoctoral Training Consortium (Burnham, TSRI, UCSD), 3rd San Diego Lab Management Symposium, January 22, 2009, University of California San Diego, La Jolla, CA
- 24) "Biochemistry of the NF- κ B signaling pathway." Department of Chemistry & Biochemistry Seminar, February 20, 2009, University of California Los Angeles, Los Angeles, CA
- 25) "Where do molecular models come from?" Computational Science Research Center Colloquium, February 27, 2009, San Diego State University
- 26) "Biochemical approaches for the study of transcription factor NF- κ B." Department of Chemistry Seminar, March 2, 2009, Sonoma State University, Rohnert Park, CA

- 27) "Of enzymes and antibodies: IKK phosphorylation of I κ B α and the structure of an antibody Fab:sphingosine-1-phosphate complex." Structure and Chemistry Affinity Group Seminar, April 16, 2009, The Scripps Research Institute, La Jolla, CA
- 28) "Antibody recognition of a signaling lipid." Department of Chemistry Seminar, April 23, 2009, University of California Irvine, Irvine, CA
- 29) "What is science—REALLY?" University City High School Biology Seminar, October 15, 2009, San Diego, CA
- 30) "Structure of the UCS domain-containing myosin assembly and repair protein UNC-45." Department of Chemistry & Biochemistry Seminar, October 22, 2009, University of California San Diego, La Jolla, CA
- 31) "What role does basic research play in the war on cancer?" Keynote Address, American Cancer Society Relay for Life, June 12, 2010, Marysville, WA
- 32) "The tenure process: A recent case study from San Diego State University." San Diego Lab Management Symposium, October 9, 2010, Sanford-Burnham Medical Research Institute, La Jolla, CA
- 33) "Steady progress in the war against cancer." Keynote Address, American Cancer Society Relay for Life, May 14, 2011, Lake Stevens, WA
- 34) "An evolutionarily conserved family of naturally occurring metalloantibodies." Department of Chemistry, Sonoma State University, September 23, 2011, Rohnert Park, CA
- 35) "I κ B Kinase oligomerization and activation of NF- κ B" Department of Chemistry Seminar, February 3, 2012, University of Kentucky, Lexington, KY
- 36) "Making the tenure process work for you: a case study from San Diego State University." San Diego Lab Management Symposium, March 3, 2012, The Salk Institute, La Jolla, CA
- 37) "Oligomerization-dependent activation as revealed in the human I κ B Kinase x-ray crystal structure" Department of Microbiology & Molecular Biology Seminar, March 15, 2012, Brigham Young University, Provo, UT
- 38) "X-ray crystal structure of the human I κ B Kinase 2 enzyme in an active conformation." Department of Chemistry & Biochemistry Seminar, March 23, 2012, San Diego State University, San Diego, CA
- 39) "Everyone can contribute to the fight against cancer." Keynote Address, American Cancer Society Relay for Life, April 22, 2012, San Diego State University, San Diego, CA
- 40) "Structural biochemistry at SDSU." San Diego State University Research Foundation PI Lecture Series, April 24, 2012, San Diego, CA
- 41) "A structure-based mechanism for I κ B kinase activation." Molecular Biology Institute Seminar, February 19, 2013, University of Oregon, Eugene, OR

- 42) “Gaining structural insights into biology through x-ray crystallography.” Meeting of the Socrates fellows, July 9, 2013, University of California San Diego, La Jolla, CA
- 43) “What roles do evolutionarily conserved metalloantibodies play in biology?” Computational Science Research Center Colloquium, September 20, 2013, San Diego State University, San Diego, CA
- 44) “Activation and specificity of an engineered monomeric IKK2.” Keystone Symposium—The NF- κ B System in Health and Disease. February 23-28, 2014, Keystone, CO
- 45) “Nuclear I κ B binding to transcription factor NF- κ B.” Graduate Student Seminar, Department of Biology, San Diego State University, October 1, 2014, San Diego, CA
- 46) “A structure-based investigation of I κ B Kinase regulation and specificity.” Molecular Biology Institute Seminar, Department of Biology, San Diego State University, October 16, 2014, San Diego, CA
- 47) “Structural and biochemical characterization of the interaction between NF- κ B and the nuclear I κ B ζ protein.” Pharmaceutical & Biomedical Sciences, University of Georgia College of Pharmacy, April 17, 2015, Athens, GA
- 48) “Structural biochemistry of anti-lipid antibodies.” Gouri Ghosh Symposium, June 18-20, 2015, University of California San Diego, La Jolla, CA
- 49) “Determining a protein’s structure by x-ray crystallography.” February 2, 2016, High Tech Middle Media Arts School, San Diego, CA
- 50) “Structural and biochemical investigations into the recognition of signaling lipids by antibodies.” March 3, 2016, Skaggs School of Pharmacy, University of California San Diego, La Jolla, CA
- 51) “It’s good to be a scientist, or What science is and what it is not.” September 9, 2016, Central High School, Independence, OR
- 52) “New research directions inspired by structural and biochemical analyses of anti-lipid antibodies.” Department of Chemistry & Biochemistry Seminar, April 7, 2017, San Diego State University, San Diego, CA
- 53) “Recombinant expression of engineered myosin for structural studies.” San Diego Muscle Symposium, June 9, 2017, San Diego, CA
- 54) “Structure-based strategic targeting of IKK enzyme activity.” Department of Chemistry, Brown University, September 26, 2017, Providence, RI
- 55) “Determining a protein’s structure by x-ray crystallography.” Chemistry Program, San Diego Miramar College, February 23, 2018, San Diego, CA
- 56) “Structural and biophysical studies suggest novel strategies for targeting I κ B Kinase activity.” Department of Biochemistry and Biophysics, Oregon State University, April 19, 2018, Corvallis, OR

- 57) "Structural characterization of cellular factors that contribute to cancer." SDSU Cancer Research Group, San Diego State University, April 26, 2019, San Diego, CA
- 58) "Biophysical studies of purified *Drosophila* and human multisubunit I κ B Kinase (IKK) complexes shed light on their structure in solution." Cold Spring Harbor Asia conference—NF- κ B, JAK-STAT & MAPK in Health, Disease & Therapy, October 8, 2019, Suzhou, China
- 59) "Novel structure-based strategies for blocking I κ B Kinase enzyme activity." School of Life Sciences, The Chinese University of Hong Kong, October 11, 2019, Hong Kong, China

MEETINGS WITH ABSTRACTS

- 1) Bergqvist S., Hughes C., Huxford T., Ghosh G. & Komives E. (2004). Thermodynamics and kinetics of the NF- κ B/I κ B and NF- κ B/DNA interactions. *Biophys. J.* **86** 513A. Biophysical Society 48th Annual Meeting. Baltimore, MD
- 2) Bourne Y., Hansen S.B., Sulzenbacher G., Talley T.T., Huxford T., Taylor P. & Marchot, P. (2006). Structural comparison of three crystalline complexes of a peptidic toxin with a synaptic acetylcholine recognition protein. *J. Mol. Neurosci.* **30** 103-104. XII International Symposium on Cholinergic Mechanisms. Alicante, Spain
- 3) Hansen S.B., Sulzenbacher G., Huxford T., Marchot P., Bourne Y. & Taylor P. (2006). Structural characterization of agonist and antagonist-bound acetylcholine-binding protein from *Aplysia californica*. *J Mol Neurosci.* **30** 101-102. XII International Symposium on Cholinergic Mechanisms. Alicante, Spain
- 4) Sabbadini R., Cavalli A., Wojciak J., Visentin B., Matteo R., Campbell M.-A., Swaney J., Gentile A. & Huxford T. (2009). Antibodies against bioactive lipids. FASEB Summer Conference on Lysophospholipid Mediators in Health and Disease. June 28-July 3, 2009, Carefree, AZ
- 5) Lee C.F., Hauenstein A.V., Gasper W.C., Sankaran B., Bernstein S.I. & Huxford T. (2009). Structure of the putative myosin chaperone, UNC-45. *Mol. Biol. Cell* **20** (suppl.), 230. American Society for Cell Biology 49th Annual Meeting. December 5-9, 2009, San Diego, CA
- 6) Lee C.F., Hauenstein A.V., Gasper W.C., Sankaran B., Bernstein S.I. & Huxford T. (2010). Crystal structure of *Drosophila* UNC-45 a putative myosin chaperone. Biophysical Society 54th Annual Meeting. February 20-24, 2010, San Francisco, CA
- 7) Marchot P., Hansen S.B., Hibbs R.E., Sulzenbacher G., Radic Z., Huxford T., Aráoz R., Talley T.T., Benoit E., Shi J., Conrod S., Servent D., Kem W.R., Molgó J., Taylor P., and Bourne Y. (2010). Structural determinants in AChBP and nicotinic ligands conferring high affinity binding and antagonist or full or partial agonist profiles. 20th Neuropharmacology Conference, High Resolution Neuropharmacology: Structure Changes the Paradigm. Satellite to the 2010 Meeting of the Society for Neuroscience. November 10-12, 2010, San Diego, CA
- 8) Marchot P., Hansen S.B., Hibbs R.E., Sulzenbacher G., Radic Z., Huxford T., Aráoz R., Talley T.T., Benoit E., Shi J., Conrod S., Servent D., Kem W.R., Molgó J., Taylor P., and Bourne Y. (2010). Structural determinants in AChBP and nicotinic ligands conferring high affinity binding and antagonist or full or

partial agonist profiles. 18th Meeting on Toxinology, Institut Pasteur. December 13-14, 2010, Paris, France.

POSTERS PRESENTED AT SCIENTIFIC MEETINGS

- 1) Huxford T., Huang D.-B., Sengchanthalangsy L.L., Chen Y.-Q., and Ghosh G. (1998). "Regulation of the Rel/NF- κ B family transcription factors through selective affinity dimerization involves three key nonidentical amino acid residues." Keystone Symposia on Molecular and Cellular Biology—Transcriptional Mechanisms. Taos, NM
- 2) Huxford T., Huang D.-B., Malek S., and Ghosh G. (2000). "The I κ B α /NF- κ B complex crystal structure reveals inhibitory mechanisms of an HIV transcription factor." 17th Annual AIDS Investigator's Meeting and Third Annual Conference on AIDS Research in California. San Jose, CA
- 3) Huxford T., Phelps C., Sengchanthalangsy L.L., Reeves R., and Ghosh G. (2000). "Characterization of the I κ B α /NF- κ B complex protein-protein interface." Keystone Symposia on Molecular and Cellular Biology—NF- κ B Regulation and Function: From Basic Research to Drug Development. Tahoe City, CA
- 4) Huxford T., Ben-Neriah Y., and Ghosh G. (2002). "The role of HIV Vpu in T cell CD4 degradation." 19th Annual AIDS Investigators' Meeting and 5th Annual Conference on AIDS Research in California. Sacramento, CA
- 5) Wojciak J., Zhu N., Schuerenberg K.T., Sabbadini R., and Huxford T. (2009). "X-ray structure of SONEPCIZUMAB, a novel humanized monoclonal antibody against the bioactive lipid sphingosine-1-phosphate." Keystone Symposium—Antibodies as Drugs. March 27-April 1, 2009, Whistler, British Columbia, Canada
- 6) Shaul J.D., Norrbom M.S., and Huxford T. (2010). "A recombinant high molecular weight multisubunit *Drosophila* IKK complex phosphorylates multiple serines on Relish." Keystone Symposium—NF- κ B in Inflammation and Disease. January 5-10, 2010, Santa Fe, NM
- 7) Wojciak J., Huxford T., Fleming J., Shestowsky B., Moreno K., Visentin B., Matteo R., Campbell M., and Sabbadini R. (2011). "Neutralizing bioactive signaling lipids with monoclonal antibodies." Keystone Symposium—Antibodies as Drugs. February 6-11, 2011, Keystone, CO
- 8) Polley S., Huang D.-B., Hauenstein A.V., Fusco A.J., Zhong X., Verma I.M., Huxford T. & Ghosh G. (2012). "X-ray crystal structure of the human IKK2 in an active conformation." Keystone Symposium—NF- κ B signaling and Biology: From Bench to Bedside, March 18-23, 2012, Whistler, British Columbia, Canada
- 9) Zhu N. & Huxford T. (2016). "A 2.0 Å x-ray crystal structure of the nuclear I κ B ζ protein in complex with NF- κ B p50 homodimer." Keystone Symposium—NF- κ B and MAP Kinase signaling in inflammation, March 13-18, 2016, Whistler, British Columbia, Canada
- 10) Caldwell J.T., Bernstein S.I. & Huxford T. (2016). "Structural analysis of *Drosophila* muscle myosin II isoforms by x-ray crystallography." Gordon Research Conference—Molecular Structure Elucidation, August 14-19, 2016, Mount Snow, VT

STUDENT POSTER PRESENTATIONS

- 1) Trinh D., Jamgochian N., Martinez R. & Huxford T. (2007). "The nuclear I κ B protein I κ B ζ has select specificity towards p50 over p65 in contrast to classical I κ B proteins." 19th Annual CSU Biotechnology Symposium, January 12-14, 2007, Los Angeles, CA
- 2) Hauenstein A.V., Zhu N., Trinh D. & Huxford T. (2007). "Structural studies of human COMMD proteins COMMD1 and COMMD6 and their binding interactions with proteins in the NF- κ B pathway." 19th Annual CSU Biotechnology Symposium, January 12-14, 2007, Los Angeles, CA
- 3) Bravo J., Hauenstein A. & Huxford T. (2007). "COMMD1 (Murr1) binds to the Cull1 component of SCF-type ubiquitin-protein ligases." SACNAS National Conference, October 11-14, 2007, Kansas City, MO
- 4) Shaul J.D., Farina A. & Huxford T. (2008). "C-terminal deletions of IKK β lose specificity for I κ B α substrate." San Diego State University Student Research Symposium, February 29-March 1, 2008, San Diego, CA
- 5) Schuerenberg K.T., Zhu N., Wojciak J.M. & Huxford T. (2008). "Crystallization and preliminary crystallographic characterization of a sphingosine-1-phosphate/antibody Fab fragment complex." Annual Biomedical Research Conference for Minority Students (ABRCMS), November 5-8, 2008, Orlando, FL
- 6) Schuerenberg K.T., Zhu N., Wojciak J.M. & Huxford T. (2009). "Crystallization and preliminary crystallographic characterization of a sphingosine-1-phosphate/antibody Fab fragment complex." 21st Annual CSU Biotechnology Symposium, January 16-17, 2009, Los Angeles, CA
- 7) Siu V., Shaul J.D., Chen J. & Huxford T. (2009). "Purification of plant MAP Kinase 4 using Sf9 insect cells." San Diego State University Student Research Symposium, February 27-28, 2009, San Diego, CA
- 8) Villaluz M., Bunce K., Dao T. & Huxford T. (2009). "Kinetics and inhibition of sphingomyelinases." San Diego State University Student Research Symposium, February 27-28, 2009, San Diego, CA
- 9) Dao T., Unzicker D., Villaluz M. & Huxford T. (2009). "Expression and Purification of Sphingomyelinase-D from *L. arizonica*." San Diego State University Student Research Symposium, February 27-28, 2009, San Diego, CA
- 10) Crivello P., Liu Y.-T. & Huxford T. (2009). "Expression of human JCV Polyomavirus VP1 major coat protein." San Diego State University Student Research Symposium, February 27-28, 2008, San Diego, CA
- 11) Saleda J., Liu Y.-T. & Huxford T. (2009). "Merkel cell polyoma virus T-antigen-like protein." San Diego State University Student Research Symposium, February 27-28, 2009, San Diego, CA
- 12) Caldwell J.T., Bernstein S.I. & Huxford T. (2009). "Purification of sub-fragment 1 of indirect flight muscle myosin II from *Apis mellifera*." San Diego State University Cell and Molecular Biology Symposium, April 2, 2009, San Diego, CA
- 13) Wojciak J., Zhu N., Schuerenberg K., Moreno K., Sabbadini R. & Huxford T. (2009). "X-ray structure of Sonepcizumab, a novel humanized monoclonal antibody against the bioactive lipid sphingosine-1-

phosphate.” Lipid Maps Meeting: Lipidomics Impact on Cell Biology, Structural Biochemistry and Immunopathology. May 6-7, 2009, La Jolla, CA

- 14) DiTirro D., Hauenstein A.V., Maraju S. & Huxford T. (2011). “Expression of a high molecular weight multi-subunit mammalian IKK complex for use in biochemical and biophysical studies.” 23rd Annual CSU Biotechnology Symposium, January 7-8, 2011, Orange County, CA
- 15) Patel J.C., Washington, Jr. A., Swarts S., van der Geer P. & Huxford T. (2011). “A novel phosphotyrosine interacting protein motif.” 23rd Annual CSU Biotechnology Symposium, January 7-8, 2011, Orange County, CA
- 16) Caldwell J.T., Melkani G., Lee C., Huxford T. & Bernstein S.I. (2011). “The application of *Drosophila melanogaster* as an expression system for transgenic myosin.” San Diego State University Student Research Symposium, March 4-5, 2011, San Diego, CA
- 17) Washington, Jr. A., Patel J., Anipindi D., van der Geer P. & Huxford T. (2011). “Expression and purification of a Shc-binding domain within the Suppressor of T-Cell Receptor Signaling (STS-1).” San Diego State University Student Research Symposium, March 4-5, 2011, San Diego, CA
- 18) Caldwell J.T., Melkani G., Huxford T & Bernstein S.I. (2012). “A method for the transgenic expression and purification of skeletal muscle myosin II isoforms using *Drosophila melanogaster*.” Biophysical Society 56th Annual Meeting, February 25-29, 2012, San Diego, CA
- 19) Anipindi D. & Huxford T. (2012). “Structural analysis of small molecule inhibitor binding to transcription factor Ets-1.” San Diego State University Student Research Symposium, March 9-10, 2012, San Diego, CA
- 20) Hauenstein A.V. & Huxford T. (2012). “Biophysical characterization of a homogenous *Drosophila melanogaster* IKK multisubunit complex.” San Diego State University Student Research Symposium, March 9-10, 2012, San Diego, CA
- 21) Othman T. & Huxford T. (2012). “Purification and crystallization of *Marinobacter* FbpA.” San Diego State University Student Research Symposium, March 9-10, 2012, San Diego, CA
- 22) Hauenstein A.V., Shaul J.D. & Huxford T. (2012). “Biophysical characterization of a homogenous *Drosophila melanogaster* IKK multisubunit complex.” Keystone Symposium—NF- κ B signaling and Biology: From Bench to Bedside, March 18-23, 2012, Whistler, British Columbia, Canada
- 23) Zhu N., Trinh D.V. & Huxford T. (2012). “Characterization of the NF- κ B and I κ B ζ interaction.” Keystone Symposium—NF- κ B signaling and Biology: From Bench to Bedside, March 18-23, 2012, Whistler, British Columbia, Canada
- 24) Polley S., Huang D.-B., Hauenstein A.V., Fusco A.J., Zhong X., Verma I.M., Huxford T. & Ghosh G. (2012). “X-ray crystal structure of the human IKK2 in an active conformation.” Keystone Symposium—NF- κ B signaling and Biology: From Bench to Bedside, March 18-23, 2012, Whistler, British Columbia, Canada

- 25) Caldwell J.T., Melkani G., Huxford T & Bernstein S.I. (2012). "A method for the transgenic expression and purification of skeletal muscle myosin II isoforms using *Drosophila melanogaster*." San Diego State University Cell & Molecular Biology Symposium, April 20, 2012, San Diego, CA
- 26) Caldwell J.T., Melkani G.C., Huxford T. & Bernstein S.I. (2012). "Transgenic expression and purification of myosin isoforms using the *Drosophila melanogaster* indirect flight muscle system." ASBMB Experimental Biology-Annual Meeting, April 21-25, 2012, San Diego, CA
- 27) Ward A., Erasmus M.F., Yacoub D. & Huxford T. (2012). "The LT1002 metalloantibody binds Ca^{2+} as cofactors at its epitope binding site." Annual Biomedical Research Conference for Minority Students, November 8, 2012, San Jose, CA
- 28) Ward A., Erasmus M.F., Yacoub D. & Huxford T. (2013). " Ca^{2+} binding characteristics of a metalloantibody." 25th Annual CSU Biotechnology Symposium, January 4-5, 2013, Anaheim, CA
- 29) Aivati C. & Huxford T. (2013). "Development of an *in vitro* functional assay for myosin folding by the UNC-45 chaperone protein." San Diego State University Student Research Symposium, March 8-9, 2013, San Diego, CA
- 30) Williams R., Ward A., Schenk K. & Huxford T. (2014). "Distinct metalloantibodies use a similar binding motif for bridging metal cations." 26th Annual CSU Biotechnology Symposium, January 10-11, 2014, Santa Clara, CA
- 31) Caldwell J.T., Melkani G.C., Huxford T. & Bernstein S.I. (2014). "X-ray structure determination of the first insect skeletal muscle myosin II." 58th Annual Meeting of the Biophysical Society, February 15-19, 2014, San Francisco, CA
- 32) Hauenstein A.V., Rogers W.E. & Huxford T. (2014). "Monomeric IKK: Probing activation and specificity." Annual Symposium of the Protein Society, July 27-30, 2014, San Diego, CA
- 33) Rogers W.E. (2014). "Whole phosphoproteome analysis via chemical labeling and affinity chromatography." American Chemical Society National Meeting, August 10-14, 2014, San Francisco, CA
- 34) Hauenstein A.V., Rogers W.E. & Huxford T. (2014). "Monomeric IKK: Probing activation and specificity." American Chemical Society National Meeting, August 10-14, 2014, San Francisco, CA
- 35) Acuna L., Milani C., Rogers W.E. & Huxford T. (2015). "Preferred binding of κB DNA by the NF- κB p50 homodimer." San Diego State University Student Research Symposium, March 6-7, 2015, San Diego, CA
- 36) Peña Palomino P.A., Bernstein S.I. & Huxford T. (2015). "Solution binding studies of *Drosophila melanogaster* UNC-45 protein." Annual Biomedical Research Conference for Minority Students, November 12, 2015, Seattle, WA
- 37) Rogers W.E., McDowell T. & Huxford T. (2015). "Purification and characterization of the *Drosophila melanogaster* (Dm) IKK β :IKK γ complex." ASBMB Special Symposium-Kinases and Pseudokinases: Spines, Scaffolds and Molecular Switches, December 5-8, 2015, Coronado, CA

- 38) Jackson G. & Huxford T. (2016). "Expression and purification of a linear tetra-ubiquitin protein for *in vitro* studies of IKK activation." San Diego State University Student Research Symposium, March 4-5, 2016, San Diego, CA
- 39) Rogers W.E. & Huxford T. (2016). "Purification and characterization of the *Drosophila melanogaster* (Dm) IKK β :IKK γ complex." ASBMB Experimental Biology-Annual Meeting, April 2-6, 2016, San Diego, CA
- 40) Rogers W.E. & Huxford T. (2017). "Biochemical and biophysical comparison of the human and *Drosophila melanogaster* I κ B Kinase protein complexes suggest structural conservation." ASBMB Annual Meeting, April 22-26, 2017, Chicago, IL
- 41) Caldwell J.T., Huxford T., Melkani G. & Bernstein S. (2017). "X-Ray crystallography structures of *Drosophila* striated muscle myosin II." 61st Annual Meeting of the Biophysical Society, February 11-15, 2017, New Orleans, LA
- 42) Ko M.S., Biswas T., Mulero M.C., Li Y., Huxford T. & Ghosh G. (2017). "Cancer study: Investigating mechanism of activation of NF- κ B transcription factors." 2017 Southern California Biomedical Sciences Graduate Student Symposium, Cedars Sinai Medical Center, October 20, 2017, Los Angeles, CA
- 43) Torres-Robles S.A., Peña Palomino P.A., Bernstein S.I. & Huxford T. (2017). "Probing UNC-45:Hsp83 protein-protein interactions *in vitro*." Annual Biomedical Research Conference for Minority Students (ABRCMS), November 1-4, 2017, Phoenix, AZ
- 44) Cohen S., Shumate K., Ghosh G. & Huxford T. (2018). "A mechanism for signal-dependent IKK β activation driven by molecular interactions with poly-ubiquitin-bound NEMO." San Diego State University Student Research Symposium, March 2-3, 2018, San Diego, CA
- 45) Feliciano S., Holmberg R. & Huxford T. (2018). "FRET assay to monitor the binding between p50 homodimer and I κ B ζ ." San Diego State University Student Research Symposium, March 2-3, 2018, San Diego, CA
- 46) Cohen S., Shumate K., Huxford T. & Ghosh G. (2018). "A mechanism for signal-dependent IKK β activation driven by molecular interactions with poly-ubiquitin-bound NEMO." ASBMB Experimental Biology-Annual Meeting, April 21-25, 2018, San Diego, CA
- 47) Farokhi E., Wu Y. & Huxford T. (2018). "Expression, purification, and crystallization of the antigen binding fragment of the genomically-encoded precursor to the murine anti-sphingosine-1-phosphate antibody." ASBMB Experimental Biology-Annual Meeting, April 21-25, 2018, San Diego, CA
- 48) Cohen S., Wu Y. & Huxford T. (2018). "Expression and purification of the *Drosophila melanogaster* (Dm)IKK β :IKK γ complex." ASBMB Special Symposium: The Many Faces of Kinases and Pseudokinases, December 9-12, 2018, San Diego, CA
- 49) Maniaci B., Stec B., Huxford T. & Love J. (2018). "Metal-controlled protein dimerization." 32nd Annual Symposium of the Protein Society, July 9-12, 2018, Boston, MA

- 50) Villaseñor C., Luong S., Wu Y., Farokhi E. & Huxford T. (2019). "Characterization of 2C10: an anti-double stranded DNA antibody." 31st Annual CSU Biotechnology Symposium, January 3-5, 2019, Garden Grove, CA
- 51) Cohen S., Wu Y. & Huxford T. (2019). "Expression and purification of the *Drosophila melanogaster* (Dm) IKK β : γ complex." San Diego State University 12th Annual Student Research Symposium, March 1-2, 2019, San Diego, CA
- 52) Cohen S., Wu Y. & Huxford T. (2019). "Expression and purification of the *Drosophila melanogaster* (Dm) IKK β : γ complex." Student Research Symposium Showcase for the Inauguration of SDSU President Adela de la Torre, April 12, 2019, San Diego, CA
- 53) Cohen S., Wu Y. & Huxford T. (2019). "Expression and characterization of the *Drosophila melanogaster* (Dm)IKK β : γ complex." 33rd Annual Symposium of the Protein Society, June 29-July 3, 2019, Seattle, WA
- 54) Villaseñor C., Luong S. & Huxford T. (2020). "Characterization of Q425: an anti-CD4 antibody." San Diego State University 13th Annual Student Research Symposium, February 28-29, 2020, San Diego, CA
- 55) Cohen S., Shaul J., Wu Y. & Huxford T. (2020). "*In vitro* characterization of a multi-subunit *Drosophila melanogaster* I κ B kinase complex." San Diego State University 13th Annual Student Research Symposium, February 28-29, 2020, San Diego, CA

STUDENT ORAL PRESENTATIONS

- 1) Norrbom M. (2008). "Characterization of *Drosophila* Relish phosphorylation *in vitro*." San Diego State University Student Research Symposium, February 29-March 1, 2009, San Diego, CA
- 2) Hauenstein A. (2009). "Structural Studies of IKK β complexed with I κ B α :p50:65." San Diego State University Student Research Symposium, February 27-28, 2009, San Diego, CA
- 3) Koehler R. (2009). "Chemical reactivity of native cysteines of human I κ B α ." San Diego State University Student Research Symposium, February 27-28, 2009, San Diego, CA
- 4) Zhu N. (2009). "Biochemical studies on I κ B ζ as a novel transcriptional regulator of NF- κ B." San Diego State University Student Research Symposium, February 27-28, 2009, San Diego, CA
- 5) Schuerenberg K.T. (2009). "Confirming target gene silencing by cytotoxic antisense oligonucleotides." San Diego State University Student Research Symposium, February 27-28, 2009, San Diego, CA
- 6) Gutierrez M. (2010). "Phosphate dependency in interfacial metal bridging of an antibody and its antigen." San Diego State University Student Research Symposium, March 5-6, 2010, San Diego, CA
- 7) Patel J. (2010). "Biochemical characterization of phosphate binding domain of Sts-1 protein." San Diego State University Student Research Symposium, March 5-6, 2010, San Diego, CA

- 8) DiTirro D. (2011). "Expression of a high molecular weight multi-subunit mammalian IKK complex: for use in biochemical and biophysical studies." San Diego State University Student Research Symposium, March 4-5, 2011, San Diego, CA
- 9) Erasmus M.F. (2012). "Characterization of metal binding by the anti-sphingosine-1-phosphate antibody LT1002." San Diego State University Student Research Symposium, March 9-10, 2012, San Diego, CA
- 10) Ward A. (2012). "The LT1002 metalloantibody binds Ca^{2+} as cofactors at its epitope binding site." San Diego State University Undergraduate Research Symposium, September 7, 2012, San Diego, CA
- 11) King A. (2013). "Recognition of G-rich IRE sequence DNA by the NF- κ B p50 homodimer." San Diego State University Student Research Symposium, March 8-9, 2013, San Diego, CA
- 12) Hauenstein A. (2013). "A structural basis for I κ B Kinase activation via oligomerization-dependent *trans* auto-phosphorylation." San Diego State University Student Research Symposium, March 8-9, 2013, San Diego, CA
- 13) Ward A. (2013). "Metalloantibody LT1002 uses Ca^{2+} to bridge antigen." San Diego State University Student Research Symposium, March 8-9, 2013, San Diego, CA
- 14) Beverly J. (2013). "Disruption of a nuclear NF- κ B p50 homodimer:I κ B ζ complex with a structure-based peptide inhibitor." UCSD Summer Research Conference, August 15, 2013, La Jolla, CA
- 15) Schenk K. (2014). "An assay for detecting phosphoesterase activity in an evolutionarily conserved metalloantibody." San Diego State University Student Research Symposium, March 7-8, 2014, San Diego, CA
- 16) Acuna L. (2014). "A structure-based screen for Myosin:UNC-45 complex interactions." San Diego State University Student Research Symposium, March 7-8, 2014, San Diego, CA
- 17) Milani C. (2014). "An x-ray crystallographic study of ideal DNA binding site spacing by NF- κ B p50 homodimer." San Diego State University Student Research Symposium, March 7-8, 2014, San Diego, CA
- 18) Schenk K (2014). "An assay for detecting phosphoesterase activity in an evolutionarily conserved metalloantibody." UC San Diego Undergraduate Summer Research Conference, August 14, 2014, La Jolla, CA.
- 19) Rogers W.E. (2014). "X-ray crystallography and NGSS: A bridge across categories." American Chemical Society National Meeting, August 10-14, 2014, San Francisco, CA
- 20) Gonzalez E. (2015). "Design and expression of an mCherry-I κ B ζ fusion protein for *in vitro* binding and inhibitor studies." San Diego State University Student Research Symposium, March 6-7, 2015, San Diego, CA
- 21) Peña Palomino P.A. (2015). "Recombinant expression and purification of the *Drosophila melanogaster* UNC-45 protein as an amino-terminal GST-fusion." San Diego State University Student Research Symposium, March 6-7, 2015, San Diego, CA

- 22) Farokhi E. (2015). "Expression, purification, and crystallization of the antigen binding fragment of the genomically-encoded precursor to the murine anti-sphingosine-1-phosphate antibody." San Diego State University Student Research Symposium, March 6-7, 2015, San Diego, CA
- 23) Nowotny C. (2015). "Design, expression, and preparation of an NF- κ B p50 homodimer-GFP fusion protein." San Diego State University Student Research Symposium, March 6-7, 2015, San Diego, CA
- 24) Cohen S. (2015). "Implementation of 'aldehyde tag' chemistry for investigation into the NF- κ B p50 homodimer:I κ B ζ complex." San Diego State University Student Research Symposium, March 6-7, 2015, San Diego, CA
- 25) Peña Palomino P.A. (2015). "Solution binding studies of *Drosophila melanogaster* UNC-45 protein." UC San Diego Undergraduate Summer Research Conference, August 13, 2015, La Jolla, CA.
- 26) Rogers W.E. (2015). "Purification and characterization of the *Drosophila melanogaster* (Dm) IKK β :IKK γ complex." 45th Western Regional Meeting of the American Chemical Society, November 6-8, 2015, San Marcos, CA.
- 27) Nguyen T.D.T. & Huxford T. (2015). "Structural study of prolonged NF- κ B responses regulated by I κ B β ." 45th Western Regional Meeting of the American Chemical Society, November 6-8, 2015, San Marcos, CA.
- 28) Peña Palomino P.A. (2016). "Solution binding studies of *Drosophila melanogaster* UNC-45 protein." San Diego State University Student Research Symposium, March 4-5, 2016, San Diego, CA
- 29) Torres-Robles S.A., Peña Palomino P.A., Bernstein S.I. & Huxford T. (2018). "Probing UNC-45:Hsp83 protein-protein interactions *in vitro*." Emerging Researchers National (ERN) Conference, February 22-25, 2018, Washington, DC
- 30) Villaseñor C., Luong S., Wu Y., Farokhi E. & Huxford T. (2018). "Characterizing 2C10: An anti-double stranded DNA antibody." San Diego State University Student Research Symposium, March 2-3, 2018, San Diego, CA
- 31) Farokhi E. & Huxford T. (2018). "Expression and purification of the antigen binding fragment of the genomically-encoded precursor to the murine anti-sphingosine-1-phosphate metalloantibody in *E. coli* and insect cells." San Diego State University Student Research Symposium, March 2-3, 2018, San Diego, CA
- 32) Torres-Robles S.A., Peña Palomino P.A., Bernstein S.I. & Huxford T. (2018). "Probing UNC-45:Hsp83 protein interactions *in vitro*." San Diego State University Student Research Symposium, March 2-3, 2018, San Diego, CA
- 33) Villaseñor C., Luong S., Cohen E. & Huxford T. (2019). "Characterizing 2C10: An anti-double stranded DNA antibody." San Diego State University Student Research Symposium, March 1-2, 2019, San Diego, CA

- 34) Luong S. & Huxford T. (2019). "Identification of the epitope on CD4 that is recognized by the anti-HIV Q425 metalloantibody." San Diego State University Student Research Symposium, March 1-2, 2019, San Diego, CA
- 35) Farokhi E. & Huxford T. (2019). "Engineering novel selectivity into metalloantibodies germline-encoded precursor to the murine anti-S1P metalloantibody in *E.coli* and baculovirus-insect cell system." 3rd Edition of Global Conference on Pharmaceutics and Drug Delivery Systems, June 24-26, 2019, Paris, France

STUDENT RESEARCH FELLOWSHIPS AND AWARDS

- 1) Javier Bravo, McNair Scholars Fellowship, 2007
- 2) Karen Schuerenberg, Minority Biomedical Research Support Fellowship, 2008
- 3) Robert Koehler, Minority Biomedical Research Support Fellowship, 2008
- 4) Michelle Baker, Doris A. Howell Foundation-CSUPERB Research Scholar Award, 2009
- 5) Maria Gutierrez, Minority Biomedical Research Support Fellowship, 2009
- 6) Norman Zhu, California Metabolic Research Foundation-Arne N. Wick Predoctoral Fellowship, 2009
- 7) Maria Gutierrez, UCSF Amgen Scholars Fellowship, 2010
- 8) Maria Gutierrez, California State University Louis Stokes Alliance for Minority Participation Scholars Program, 2010-11
- 9) Allen Washington, Jr., Minority Access to Research Careers Fellowship, 2010
- 10) Arthur Hauenstein, California Metabolic Research Foundation-Arne N. Wick Predoctoral Fellowship, 2010
- 11) Maria Gutierrez, Undergraduate Research Excellence Award, San Diego State University Student Research Symposium, 2011
- 12) Allen Washington, Jr., University of Michigan Medical Scientist Training Program, 2011
- 13) Aaron Ward, McNair Scholars Fellowship, 2012
- 14) Aaron Ward, Minority Biomedical Research Support Fellowship, 2012
- 15) Rodaw Othman, CSUPERB Presidents' Commission Scholar Award, 2012
- 16) Dina Yacoub, Health Careers Opportunity Program Fellowship, 2012
- 17) Sierra Warren, California State University Louis Stokes Alliance for Minority Participation Scholars Program, 2012-2013
- 18) Cathrine Aivati, Minority Biomedical Research Support Fellowship, 2012
- 19) Ryan Williams, CSUPERB Presidents' Commission Scholar Award, 2013
- 20) Linda Honaker, NIH/NIGMS Minority Access to Research Careers (MARC) Program, 2013
- 21) Joshua Beverly, Health Careers Opportunity Program Fellowship, 2013
- 22) Kayla Schenk, Health Careers Opportunity Program Fellowship, 2014
- 23) Eric Gonzalez, UT Southwestern Summer Undergraduate Research Fellowship, 2014
- 24) Carlos Nowotny, UT Southwestern Summer Undergraduate Research Fellowship, 2014
- 25) Linda Honaker, SDSU College of Sciences Outstanding Scholar, 2014
- 26) Carlos Nowotny, NIH/NIGMS Minority Access to Research Careers (MARC) Program, 2014
- 27) Amanda Bambilia, IMSD/Minority Biomedical Research Support Fellowship, 2014
- 28) Perla Peña Palomino, Health Careers Opportunity Program Fellowship, 2015
- 29) Carlos Nowotny, University of Minnesota Life Sciences Summer Undergraduate Research Program, 2015
- 30) Eric Gonzalez, UC San Francisco Summer Research Training Program, 2015
- 31) Eric Gonzalez, NIH/NIGMS Minority Access to Research Careers (MARC) Program, 2015
- 32) W. Eric Rogers, California Metabolic Foundation-Arne N. Wick Predoctoral Fellowship, 2015
- 33) Perla Peña Palomino, Soroptimist of La Mesa Women's Opportunity Conference Mini-grant, 2016
- 34) Sara Torres-Robles, Amgen Scholars Program, Kyoto University, Japan, 2015

- 35) Perla Peña Palomino, California State University Louis Stokes Alliance for Minority Participation Scholars Program, 2015-16
- 36) Carlos Nowotny, Sally Casanova California Pre-Doctoral Scholar, 2015-16
- 37) Sean Mulick, CSUPERB Presidents' Commission Scholar Award, 2016
- 38) Garland Jackson, SDSU/California Institute for Regenerative Medicine Stem Cell Internship, 2016
- 39) Sara Torres-Robles, William Trowbridge Memorial Scholarship, 2016-17
- 40) Sara Torres-Robles, California State University Louis Stokes Alliance for Minority Participation Scholars Program, 2016-17
- 41) Citlayi Villaseñor, California State University Louis Stokes Alliance for Minority Participation Scholars Program, 2017
- 42) Sara Torres-Robles, NIH/NIGMS Minority Access to Research Careers (MARC) Program, 2017
- 43) Sara Torres-Robles, SDSU Mathematics Engineering Science Achievement (MESA) Award, 2017
- 44) Citlayi Villaseñor, Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS) Travel Scholarship, 2017
- 45) Sara Torres-Robles, Emerging Researchers National (ERN) Conference in STEM, Travel Award, 2018
- 46) Sara Torres-Robles, Biological SIGNALS Scholar Program, University of Wisconsin—Madison, 2018
- 47) Citlayi Villaseñor, Doris A. Howell Foundation-CSUPERB Research Scholar Award, 2018
- 48) Sara Torres-Robles, Doris A. Howell Foundation-CSUPERB Research Scholar Award, 2018
- 49) Citlayi Villaseñor, NIH/NIGMS Minority Access to Research Careers (MARC) Program, 2018
- 50) Samantha J. Cohen, California Metabolic Research Foundation-Arne N. Wick Predoctoral Fellowship, 2018
- 51) Sara Torres-Robles, Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS) Travel Scholarship, 2018
- 52) Elinaz Farokhi, California Metabolic Research Foundation Travel Award, 2018
- 53) Elinaz Farokhi, Graduate Student Travel Fund, San Diego State University, 2019
- 54) Citlayi Villaseñor, NSF Summer Undergraduate Research Experience, Biophysics at the University of Michigan, 2019
- 55) Sara Torres-Robles, NSF Graduate Student Research Fellowship, 2019
- 56) Samantha Cohen, Protein Science Young Investigator Travel Award, 2019
- 57) Citlayi Villaseñor, SDSU College of Sciences Outstanding Scholar, 2020
- 58) Lillian Cooke, Doris A. Howell Foundation-CSUPERB Research Scholar Award, 2021