Manish J. Butte, M.D., Ph.D.

Curriculum Vitae

I. PERSONAL HISTORY

Title:	E. Richard Stiehm Endowed Chair, Associate Professor and Division Chief, Dept. of Pediatrics, Division of Immunology, Allergy, and Rheumatology *and* Dept. of Microbiology, Immunology, and Molecular Genetics
Work:	University of California, Los Angeles 10833 Le Conte Avenue 12-430 MDCC Los Angeles, CA 90095 310-825-6481 (office)
E-mail:	mbutte@mednet.ucla.edu
Place of Birth:	Philadelphia, PA
Citizenship:	USA

II. EDUCATION

University and Graduate Schools

1993	**Sc.B. Physics**, Honors, Magna cum laude, Brown University *Advisor:* Leon Cooper, PhD *Thesis:* Artificial neural networks in time series prediction and regression analysis
1994	**M.Sc. Medical Sciences**, Brown University *Advisor:* Donald Marsh, MD *Thesis:* Topological and phenomenological classification of bursting oscillations: membrane potential oscillations of excitable cells
1996	**M.D.**, Brown University School of Medicine
2000	**Ph.D. Biophysics**, University of California, San Francisco. *Advisor:* Robert J. Fletterick, PhD *Thesis:* Macromolecular Structures of Receptor-Ligand Complexes from Developmental Neurobiology and Cancer Biology *Committee:* William Mobley, MD PhD; Marc Shuman, MD; Jonathan Weismann, PhD

Post-Doctoral Training

July 2004 – June 2009	Post-Doctoral Fellow (joint), Pathology, Harvard Medical School (with Arlene H. Sharpe, MD PhD)
July 2004 – June 2009	Post-Doctoral Fellow (joint), Chemistry & Chemical Biology, Harvard University (with George M. Whitesides, PhD)

Clinical Training

2000 – 2003	Resident in Pediatrics, Children's Hospital of Philadelphia
2003 – 2006	Clinical Fellow, Allergy/Immunology, Boston Children's Hospital

III. LICENSURE

2003 – 2009	Massachusetts Medical Licensed Physician (#217342)
2009 – present	California Medical Licensed Physician (#A110453)

IV. BOARD CERTIFICATIONS

2004 – present	American Board of Pediatrics (renewed in 2014)
2005 – present	American Board of Allergy and Immunology (renewed in 2014)

V. PROFESSIONAL EXPERIENCE

Academic Appointments

Jun 2006 – June 2009	Attending Physician by Courtesy, Allergy/Immunology, Children's Hospital Boston
Nov 2008 – June 2009	Harvard Medical School, Instructor, Department of Pathology
Jan 2010 – Oct 2016	Attending Physician, Immunology and Allergy, Stanford Children's Health and Stanford Medicine
July 2009 – Oct 2016	Stanford University, Assistant Professor Member of: BioX, Stanford Immunology, Stanford Biophysics, Stanford Cancer Institute, Stanford Photonics Research Center, Interdepartmental Program in Biomedical Engineering. Faculty Fellow of Child Health Research Institute, Chemistry, Engineering & Medicine for Health (ChEM-H).
Nov 2016 – present	UCLA, Associate Professor **Division Chief**, Division of immunology, Allergy, and Rheumatology, Co-Director of the California Center for Rare Diseases Co-Director of I3T: Immunity / Inflammation / Infection / Transplantation Co-Director of Cancer-Nano theme of the Jonsson Comprehensive Cancer Center Member of: Molecular Biology Institute PhD Home Areas of IMMP (Immuno) and BBSB (Biophysics) Broad Stem Cell Research Center Children's Discovery and Innovation Institute
Nov 2016 – present	Attending Physician, Immunology and Allergy, UCLA Ronald Reagan Medical Center and Mattel Children's Hospital

Other Professional Experience

1990 (Summer)	Software Engineer, Apple Computer Inc., Networking and Communications, Cupertino, CA
1991, 1992 (Summers)	Software Development Engineer, Microsoft Corporation, Excel and Mail Groups, Redmond, WA
1993 (Summer)	Research Fellow, National Institutes of Health (NIH), Mathematical Research Branch (NIDDK), Bethesda, MD
1996 (Summer)	Physician, U.S. Public Health Service / Indian Health Service (Southern Ute Tribe), Ignacio, CO
2014 –	Advisor and Co-Founder, Microvolution LLC (startup)
2014 –	Advisor and Co-Founder, Allertope, Inc. (startup)

2015 –	Advisor and Co-Founder, Regencor, Inc. (startup)
2015 –	Scientific Advisory Board, Alpine Immune Sciences
2015 –	Scientific Advisory Board, Chimera Bio (startup)
2016 – 2017	Contractor, Institute for Defense Analysis, Alexandria, VA
2018 – 2019	Speaker/Consultant, CSL Behring
2018 –	Consultant, Horizon Pharma (advisory board)
2019 –	Consultant, Sanofi Genzyme (advisory board)
2019 –	Consultant, Regeneron (advisory board)

VI. PROFESSIONAL ACTIVITIES

Ad hoc reviewer

2008 – present	(most recent year in parentheses) *Cell (2020), Journal of Allergy and Clinical Immunology (2020), Molecular Cell (2019), Science (2018), Science Signaling (2019), Science Immunology (2018), PLoS Biology (2018), Proceedings of the National Academy of Sciences (2019), Nature Communications (2016), Immunity (2015), Communications Biology (2019), Journal of Allergy and Clinical Immunology in Practice (2019), Journal of Clinical Immunology (2019), Journal of Clinical Investigation (2018), Biophysical Journal (2016), Biomaterials (2018), Scientific Reports (2017), ACS Chemical Biology (2017), Biomicrofluidics (2012), Applied Physics Letters (2018), Critical Reviews in Immunology (2019), Trends in Immunology (2018), Frontiers in Immunology (2019), PLoS ONE (2017), Review of Scientific Instruments (2016), Journal of Cell Biology (2017),*

Organizing national meetings for Professional Societies

Apr 2012	Co-Organizer of the Material Research Society Symposium on Mechanobiology (San Francisco)
Sep 2012	Organizer of Stanford Photonics Research Center annual symposium, section on Mechanobiology (Sep 17-19)
Sep 2013	Organizer of Stanford Photonics Research Center annual symposium, section on Cellular Imaging
Apr 2016	Co-Chair, AFM BioMED (Porto, Portugal)
Apr 2019	Clinical Immunology Society Annual Meeting (Atlanta), Program Committee

Professional Society Memberships

1993 –	Sigma Xi, Member
2000 – 2009	American Academy of Pediatrics, Member
2003 – 2011	American Academy of Asthma Allergy and Immunology, Member
2003 –	Clinical Immunology Society, Member
2006 –	American Association of Immunologists, Member
2009 –	Biophysical Society, Member
2012 – 2014	Materials Research Society, Member
2012 – 2013	American Heart Association, Member

VII. SERVICE

Professional Societies

2014 –	Clinical Immunology Society: Digital Content Committee, CME Committee (2014-2019), Annual Meeting Program Committee (2019)
2019 –	ClinGen Clinical Domain Working Groups Immunology Executive Committee

Study sections

Feb 2013	NSF Study section (BMMB)
Jan 2016	NIH Study section (NIAID ZAI1 BDP-I (M2))
Jan 2017	NSF Study section (BMMB)
Oct 2017	NIH Study section (NIAID 2017/10 ZAI1 NVM-I (S1))
Jun 2018	NIH Study section (NIAID CMIA)
Mar 2019	NIH Study section (NIAID ZRG IMM-M(10) B)
Apr 2019	NIH Study section (ZAI1 GEB-I (M2))
Oct 2019	NIH Study section (NIAID CMIA)

University Service

12 Sep 2010	Faculty Organizer of Stanford Immunology Annual Retreat, Asilomar, CA
1 Oct 2010	Immunology Postdoctoral Journal Club Faculty Lead-off speaker
Nov – Dec 2010	Postdoc Education Working Group, University Committee
23 Feb 2011	E-Certification Custodian/Capital Equipment University Committee
Oct 2011 – Jun 2012	Dept. of Mechanical Engineering Faculty Search Committee
May 2012 – Sep 2012	Stanford Immunology, 1st year Start-Up Committee
13 Sep 2013	Faculty Organizer of Stanford Immunology Annual Retreat, Asilomar, CA
21 Apr 2014	Discussion leader, Responsible Conduct of Research (Stanford)
Sep 2014	Stanford Biosciences Grant Writing Academy, Specific Aims Workshop, Faculty Mentor
2015 – 2016	Stanford Committee on Graduate Admissions and Policies (CGAP)
2015 – 2016	Ad hoc reviewer for Stanford intramural awards: Child Health Research Institute Transdisciplinary Initiatives Program; Pediatrics Critical Care Medicine seed grant
Sep 2015 – Nov 2016	Stanford University Nano Committee
Apr 2017	UCLA I3T Executive Advisory Board
2017 – present	Ad hoc reviewer for UCLA intramural awards: I3T seed award, CDI fellowship awards
July 2017 –	CNSI Nano and Pico Characterization Laboratory Advisory Committee
Sep 2017 –	Co-Director, Immunology/Infection/Inflammation/Transplantation (I3T) Scientific Theme
2018 – 2019	Co-Director, Cancer Nanotechnology Program in the Jonsson Comprehensive Cancer Center
Jan 2019 –	Co-Founder, California Center for Rare Diseases at UCLA

Thesis Committees (outside my group)

10 May 2010	PhD Thesis Defense Committee Chair, Biophysics Group (Lawrence Klein, Mark Davis Group)
27 May 2010	PhD Thesis Defense Committee Chair, Dept. of Chemistry (Yin Nah Teo, Eric Kool Group)
16 Jul 2010	2010 Cancer Biology and Immunology Postdoctoral Symposium, Panel Discussion
18 Aug 2010	PhD Thesis Defense Committee, Dept. of Bioengineering (Amir Shamloo, Heinshorn Group)
21 Jan 2011	PhD Orals Examination Committee, Immunology (Michelle Yen, Rich Lewis Group)
18 Apr 2011	PhD Thesis Defense Committee Chair, Dept. of Materials Science and Engineering (Ben Almquist, Melosh Group)
19 Apr 2011	PhD Orals Examination Committee Chair, Immunology (Catherine Hartzell, Rich Lewis Group), Thesis Committee member
25 Jul 2011	PhD Thesis Defense Committee Chair, Dept. of Materials Science and Engineering (Elizabeth Ann Hager-Barnard, Melosh Group)
11 Jun 2012	PhD Thesis Defense Committee Chair, Dept. of Biochemistry (Logan Andrews, Herschlag Group)
12 Nov 2012	PhD Thesis Defense Committee Chair, Dept. of Electrical Engineering (Karthik Vijayarhagavan, Solgaard Group)
11 Feb 2013	PhD Orals Examination Committee Chair, Immunology (Archana Mahadevan, Richard Lewis Group)
15 May 2014	PhD Thesis Defense Committee Chair, Dept. of Bioengineering (Timothy Lee, KC Huang Group)
2 June 2014	PhD Thesis Defense Committee Chair, Dept. of Electrical Engineering (Antonio Gellineau, Olav Solgaard Group)
10 Sep 2014	PhD Thesis Defense Committee Chair, Dept. of Chemical Engineering (Meghan Marie Ferreira, Heilshorn Group)
19 Dec 2014	PhD Orals Examination Committee, Immunology (Leah Sibener, K. Chris Garcia Group)
4 June 2015	PhD Thesis Defense Committee, Stanford Immunology (Catherine Hartzell, Richard Lewis Group)
25 Apr 2016	PhD Thesis Defense Committee Chair, Dept. of Materials Science and Engineering (Witchukorn Phuthong, Fritz Prinz Group)
14 Sep 2017	PhD Orals Examination Committee, Bioengineering (Negin Majedi, Bouchard/Butte group)
11 Nov 2017	PhD Orals Examination Committee, Bioengineering (Adewunmi Olumuyiwa Adelaja, Hoffmann group)
16 Nov 2017	PhD Thesis Defense Committee, Immunology (Leah Sibener, K. Chris Garcia Group)
14 Mar 2018	PhD Orals Examination Committee, Immunology (Elaine Wang, DiCarlo Group)

11 Dec 2019	PhD Orals Examination Committee, Bioengineering (Xuexiang (Cher) Zhang, Song Li Group)

Community Service

1999 – 2000	UCSF Science Health & Education Partnership – teaching teachers in San Francisco Unified School District
July 2010-2013	Summer Institute for Middle School Teachers (Center for Probing the Nanoscale), lecturer
July 2011	Stanford Engineering Research Experience for Teachers (SERET) Program, lecturer
2012 (Summer)	Camp Doctor (Volunteer), Painted Turtle Summer Camp (Primary Immunodeficiency & Liver Transplant session)
2014 (Summer)	Stanford Summer Research Program for Teachers, lecturer
2013, 14, 15, 16	Escondido Elementary School Science Night, Co-Founder and Chair
2014 – 2016	Stanford Alliance for Primary Immunodeficiency (SAPI), Co-founder and Medical Director

VII. AWARDS AND HONORS

1985	Eagle Scout, Boy Scouts of America
1988	New Jersey Governor's School in the Sciences
1990	Board of Directors Award, Philadelphia Science Council
1993	Associate Member, Sigma Xi
1993	Barry M. Goldwater Scholarship Award, Brown University
1993	R. Bruce Lindsay Prize in Physics, Brown University
1996 – 1999	National Defense Science and Engineering Graduate Fellowship, Office of Naval Research
1999 – 2000	Biotechnology Training Award, UCSF
2002	Resident Research Award, American Academy of Pediatrics
2004 – 2012	Loan Repayment Award (Pediatric Research), NIH
2005 – 2006	Allergy Fellow Award, GlaxoSmithKline
2010	Baxter Family Foundation Award
2011	Faculty Mentor of the Year Award, Stanford Immunology
2013	Tashia and John Morgridge Faculty Scholar Award in Pediatric Translational Medicine
2014 – 2015	Defense Sciences Study Group (US Dept. of Defense / Institute for Defense Analysis), SECRET clearance
2018 –	E. Richard Stiehm Endowed Chair
2019	LeBien Visiting Professor, Immune Deficiency Foundation

VIII. TEACHING AND MENTORING

Courses

19 Dec 2013	Medicine Residency primary care lecture "Primary Immune Deficiency in Adults"
2006	Harvard Medical School. Objective Structured Clinical Exam
2008, 2009	Harvard Medical School. Immunology, Microbiology and Pathology (Mini-conference Leader)

2010 – 2011	PEDS 299, Stanford University, Immunology Reading Group
2010 – 2014	Immunology 315 (Fall, Winter, Spring), Stanford University, Advanced Survey of Immunology (solo class)
2011	Bioengineering 390 “Introduction to Bioengineering Research”, lecture on Biological Atomic Force Microscopy, one lecture
2012	Bioengineering 459 (Frontiers in Interdisciplinary Biosciences), “Introduction to Light Sheet Microscopy”, one lecture
2012	Mechanical Engineering 389 (Biomechanical Research Symposium), one lecture
2013	Bioengineering 283 / Mechanical Engineering 244 (Mechanotransduction in Cells and Tissues), lecture on “Mechanotransduction in the Immune System”
2013	Med 223 (Cardiovascular and Pulmonary Sciences Seminar), “Endothelial interactions with T cells”, one lecture.
2013 – 2015	Immunology 209 (Advanced Immunology II), two lectures
2014, 2015, 2016	Immunology 205 (Medical School Immunology), lectures on T cell activation and effector function, Future of immune diagnostics
2019	MIMG C234 Ethics Case-Study Small Group Discussion Leader

Clinical Teaching

2003 – 2004	Blackfan Firm Conferences (Boston Children’s), lecturer, audience of 40 medical students, residents, fellows, and staff.
2009 – 2016	Numerous topics, Pediatric Immunology & Allergy group, Lucile Packard Children’s Hospital, ~10 hours / year
2011 – 2012	Stanford Medical Student Journal Club, Pediatrics
2013, 2014, 2015	“Primary Immunodeficiency and Adults”, Internal Medicine resident teaching
Apr 2006	“Primary Immunodeficiency and Primary Care Pediatrics”, lecturer, audience of 8 clinical staff at Martha Elliot Health Center (Boston Children’s), 2 hours.
Nov 2009	“Acetaminophen and Asthma”, Pediatric Pulmonary group, Lucile Packard Children’s Hospital, 1 hour
Oct 2005	“Primary Immunodeficiency and Pulmonary Medicine”, lecturer, audience of 20 clinical fellows and staff in Pulmonary Division (Boston Children’s), 2 hours.
2009 – present	Clinical and Basic Immunology full-year lecture series based on *Cellular and Molecular Immunology*

Mentoring

High School Interns

2010 (Summer)	Priyal Fadadu, Stanford Institutes of Medicine Summer Research Program intern (graduated UCLA)
2011 (Summer)	Annie Wei, Stanford Institutes of Medicine Summer Research Program intern
2012 (Summer)	Keegan Mendonca, Stanford Institutes of Medicine Summer Research Program intern (now undergraduate at Caltech)

2013 (Summer)	Amy Liu, Stanford Institutes of Medicine Summer Research Program intern (now undergraduate at Stanford)
2014 (Summer)	Bhavani Sanagavarapu, Stanford Institutes of Medicine Summer Research Program intern (now undergrad at UC Berkeley)
2015 (Summer)	Maya Miklos, Stanford Institutes of Medicine Summer Research Program intern (now undergrad at Harvard)
2016 (Summer)	Kelvin Yang, Stanford Institutes of Medicine Summer Research Program intern (now undergrad at Brown)
2017, 2018 (Summer)	Ilan Bocian, Summer intern

Undergraduate Students (**currently**)

2005 – 2008	Amy Wong (Harvard Biophysics), Graduate Student
2006 (Summer)	Theresa Phamduy (Univ. of Massachusetts Lowell), Intern
2008 (Summer)	Christopher Keener (Clarion Univ.), Intern
2010 (Summer)	Claudia Mariella Lavarreda Pearce, Stanford Summer Science Program intern (now working at UC Davis)
2009 – 2010	Catherine Le (Stanford, now MD/PhD student at UC Davis)
2011 (Summer)	Isaac Ghansah (Stanford, now MD student at Case Western)
2011 (Summer)	Rohit Dasgupta (Johns Hopkins)
2014	Ana-Maria Istrate (Stanford)
2014 – 2016	Yoseph Zerga Semma (Stanford, Currently MD student at U Wisconsin Madison)
2014 – 2016	Anuj Patel (Stanford, Currently at McKinsey)
2015	Lynée Turek-Hankins (Stanford)
2018 –	**Humza Khan (UCLA)**
2018 (Summer)	Bijou De Jong (UCSD)
2018 – 2019	Alexandra Carla Bobica (McGill)
2018 –	**Andrew Kalra (UCLA)**
2018 –	**Mana Sheykhsoltan (UCLA)**
2018 –	**Naveed Zaman (UCLA)**
2019 (Summer)	Ellie Hall (UCLA SPUR-LABS, College of William and Mary)

*Graduate Students (**primary mentor**)*

Fall 2009	Kathryn Montgomery (Research Rotation), PhD student, Bioengineering
Spring 2012	Dara Strauss-Albee (Research Rotation), PhD student, Immunology
Spring 2012	Sarah Denny (Research Rotation), PhD student, Biophysics
Fall 2012	Thomas Keller (Research Rotation), PhD student, Immunology
Winter 2013	Nicholas Bayless (Research Rotation), PhD student, Immunology
2009 – 2014	**Marc A. Bruce, PhD in Immunology** (now Co-Founder & CEO, Microvolution)
2012 – 2016	**Adi de la Zerda, PhD, Materials Science & Engineering**
2013 – 2017	**Kenneth Hu, PhD in Biophysics** (postdoc Krummel Lab, UCSF)
Fall 2014	Payton Marshall (Research Rotation), MSTP student

2014 – 2019	**Kevin Meng, PhD in Microbiology & Immunology** (now at Kite Pharma)
Fall 2015	James Hardin (Research Rotation), Immunology
Spring 2016	Julia McKechnie (Research Rotation), Immunology
Summer-Fall 2016	Bryan Xie (Research Rotation), Immunology
Winter 2017	Ian Perrone (Research Rotation), Immunology
Summer 2017 – present	**Negin Majedi, PhD Student, Bioengineering**
Fall 2017 – present	**Matthew Miller, PhD Student, Immunology**
Fall 2017	Emily Yang (Research Rotation), Immunology
Spring 2018 – present	**Eta Atolia, PhD student, MSTP**
Summer 2018	Amanda Miller (Research Rotation), MSTP

Postdoctoral Fellows

2010 – 2012	Jianwei Liu, PhD, Postdoctoral Fellow (faculty at Fudan University)
2010 – 2011	Daniel Garcia, PhD, Postdoctoral Fellow (now Clinical Fellow at UCLA)
2011 – 2014	Andrew Wang, PhD, Postdoctoral Fellow (now at Western Digital)
2012 – present	**Tim Thauland, PhD**, Project Scientist
2016 – 2017	Sara Kleinman, MD, Clinical fellow (now Assistant Professor at Stanford)
2015 – 2017	Irina Gurevich, PhD, Postdoctoral Fellow (postdoc at Stanford)
2017 – present	**Jennifer Aron, MD**, Postdoctoral Fellow

IX. RESEARCH GRANTS

Before Stanford

1995 – 1996	NIH 5T32 GM008284 Structural Biology Training Program Investigator (PI: David Agard)
1996 – 1999	National Defense Science and Engineering Graduate Fellowship, Office of Naval Research
2004 – 2006	NIH 5T32 AI007512 Molecular Basis of Allergic and Immunologic Disease Investigator (PI: Raif Geha)
2005 – 2006	GlaxoSmithKline Allergy Fellowship Costimulation and Regulation in the Immunological Synapse PI
2005 – 2006	CIMIT/DoD Microfluidic device for low cost screening of newborns for severe combined immune deficiency Co-Investigator (PI: George Whitesides)
2005 – 2006	Stewart Trust Microfluidic device for tracking immune reconstitution after hematopoietic stem cell transplant Co-Investigator (PI: Arlene Sharpe)

2006 – 2007	Massachusetts Technology Transfer Council Development of a Prototype Microfluidic Device Enabling Newborn Screening for Severe Combined Immune Deficiency Co-Investigator (PI: Arlene Sharpe)
2007 – 2009	Harvard Technology Accelerator Fund Modulating the Immune Response to Treat Disease: PD-1 Small Molecule Modulator Screening Co-Investigator (PI: Arlene Sharpe)
2006 – 2009	CIMIT/DoD Development of a Prototype Microfluidic Detector Enabling CD4 T cell counting in HIV/AIDS Co-Investigator (PI: George Whitesides)

Completed (at Stanford)

2010 – 2011	SPARK/Biodesign (Stanford CTSA intramural award) Development of a Prototype Microfluidic Detector Enabling Newborn Screening for SCID PI
2010 – 2012	**NIH R21 AI090448-01** **Microfluidic diagnostics for Primary Immunodeficiency** **PI**
2011 – 2012	Bay Area Lyme Disease Fund PI
2009 – 2014	**NIH K08 AI079268-01** **Mechanisms of T cell inhibitory pathways** **PI**
2010 – 2014	BioX Interdisciplinary Initiatives Program Examining the threshold of T cell memory by AFM-based receptor mapping PI
2011 – 2014	SPARK/C-IDEA (Stanford CTSA intramural award) Point-of-Care lateral flow assay for differentiating Type I and Type II diabetes Co-PI with Prof. Brian Feldman
2010 – 2014	**NSF NSEC (PHY 0830228)** Center for Probing the Nanoscale, BioProbes Core Co-Investigator with Nicholas Melosh, Olav Solgaard
2012 – 2014	Stanford BioDesign Global Exchange Grant Low-cost Point-of-Care Device for Early Detection of Infection PI
2013 – 2014	Stanford Cardiovascular Institute Seed Grant Measuring Electromechanical Asynchrony in iPSC-CM using Atomic Force Microscopy PI

2013 – 2014	Stanford Immunology Transplantation and Infection Institute Seed Grant Identifying Innate and Adaptive Signaling Pathways leading to an Increased Susceptibility to Infections PI
2014 – 2015	Translational Research and Applied Medicine Program (TRAM) Developing functional tools for validating novel gene mutations that impair immune regulation Co-PI with Rosa Bachetta, MD
2013 – 2016	**NSF CBET-1264833** Measuring The Effect Of Mechanical Forces On Receptor Signals Through Nanoscale AFM Measurement Of The Cytoskeleton PI
2013 – 2018	Child Health Research Institute (CHRI) Faculty Scholar Mechanical Forces in T Cell Function PI
2015 – 2016	Child Health Research Institute (CHRI) Understanding and Treating the T-cell Immunodeficiency of Congenital Heart Disease PI
2015 – 2016	Stanford Cardiovascular Institute (CVI) T-Cell Deficiencies in Adult Congenital Heart Disease Co-PI with Dr. Anitra Romfh
2015 – 2016	BioX Interdisciplinary Initiatives Program Developing Mechanically Malleable Biomimetic Hydrogels for 3D Cell Culture and Tissue Regeneration Co-PI with Profs. Ovijit Chaudhuri and Yan Xia

Active

2014 – 2019	**NIH/NIGMS R01 GM110482** **Influences of nanomechanical forces on T cells** **PI**
2018 – 2020	**JMF/Shire Bioscience Award** **Improving the diagnosis of CVID by Analysis of Innate and Adaptive Signaling Pathways** **PI**
2018 – 2021	**JMF/Shire Bioscience Award** **Accelerating the diagnosis of genetic immunodeficiency diseases** **PI**
2018 – 2023	**U01 HG007703** **UCLA clinical site for the investigation of undiagnosed disorders** **Co-I**
2019 – 2021	**University of California Research Initiative VFR-19-633386** **The Immune Dysregulation of Disseminated Coccidodiomycosis** **PI**

X. LECTURES AND PRESENTATIONS

Scientific Posters (selected)

Aug 2008	Mechanism by which ligation of PD-L1 on T cells inhibits their responses. Gordon Research Conference (Oxford, UK). Poster.
20 May 2012	Mats Gustafsson Memorial Symposium on High Resolution Imaging (HHMI Janelia Farm, VA). Invited poster presentation.
2 Feb 2014	Cytoskeletal stiffness controls the threshold of T cell activation. Biophysical Society (San Francisco, CA). Poster
2 May 2014	Cytoskeletal stiffness controls the threshold of T cell activation. American Association of Immunologists (AAI) Annual Meeting (Pittsburgh, PA), Poster.
11 Apr 2015	Systems Biology Approach to Analyze Signaling Defects and Identify Novel Immunodeficiencies using CyTOF-phosphoflow. Clinical Immunology Society (CIS) Annual Meeting (Houston, TX). Poster.
10 May 2015	The Actin Capping Protein Alpha-Adducin is Required for CD28 Costimulation. American Association of Immunologists (AAI) Annual Meeting (New Orleans, LA). Poster.
10 May 2015	Role of microtubule acetylation in T cell activation and downstream function. American Association of Immunologists (AAI) Annual Meeting (New Orleans, LA). Poster.
10 May 2015	Rho kinase activity dampens the activation of CD4+ T cells. American Association of Immunologists (AAI) Annual Meeting (New Orleans, LA). Poster.
10 May 2015	Orienting incoming PhD students through hands-on training in immunology research methods. American Association of Immunologists (AAI) Annual Meeting (New Orleans, LA). Poster.
18 Oct 2016	Data double take: three examples of atypical pathogenic alterations detected in exome sequencing data. American Society of Human Genetics. Poster.

Lectures, Oral Presentations, and Grand Rounds

May 2005	Microfluidic device for low-cost screening of newborns for Severe Combined Immune Deficiency. FOCIS Primary Immune Deficiency Consortium Conference (Boston, MA). Oral presentation.
Oct 2005	Complement C2 Deficiency. Clinical Immunology Society Summer School in Primary Immunodeficiency (Miami Beach, FL). Oral presentation.
Mar 2006	Microfluidic device for low-cost screening of newborns for Severe Combined Immune Deficiency, American Academy of Allergy, Asthma, and Immunology Conference (AAAAI, Miami, Florida). Oral presentation.
May 2007	PD-L1 interacts specifically with B7-1 to inhibit T cell proliferation. American Association of Immunologists (AAI, Miami, Florida), Oral presentation.

July 2007	T Cell Activation and CD28 Costimulation Coordinately Regulate Genome-wide Networks of Alternative Splicing and Transcription. FASEB Summer Research Conference (Snowmass, Colorado). Poster and Oral presentation.
12 May 2010	Visualization and Manipulation of Immune Cells. Stanford Molecular Biophysics Seminar Series (Stanford, CA). Invited, Oral presentation.
25 May 2010	Visualization and Manipulation of Immune Cells. Immunology Seminar Series (Stanford, CA). Invited, Oral presentation.
22 July 2010	Nanotechnology and Medicine. Summer Institute for Middle School Teachers (Stanford, CA). Invited oral presentation for Center for Probing the Nanoscale.
20 Aug 2010	Introduction to Biological AFM at Stanford. Stanford Biophysics Retreat (Stanford, CA). Invited oral presentation.
2 Feb 2011	Biological AFM and Immunology. Stanford MSTP Program seminar. Invited oral presentation.
10 Feb 2011	Mechanotransduction and AFM. Stanford Regenerative Medicine Seminar. Invited oral presentation.
27 May 2011	Nanotechnological tools for studying T cell diseases of children. Pediatrics Grand Rounds (Stanford, CA). Invited oral presentation.
27 Aug 2012	Examining the threshold of T cell memory by AFM-based receptor mapping. BioX Symposium (Stanford, CA). Invited oral presentation.
5 Feb 2013	Mechanobiology of T cell activation. Biophysical Society Annual Meeting (Philadelphia, PA). Invited oral presentation.
7 Feb 2013	Mechanobiology of T cell activation. Second Skippy Frank Translational Comparative Medicine Conference (Menlo Park, CA). Invited oral presentation.
13 Apr 2013	T cells Mechanics and Optical Diagnostics. Stanford University Photonics Retreat (Rohnert Park, CA). Invited talk.
25 Apr 2013	Innate and Adaptive Defects of Uncharacterized Primary Immunodeficiencies Identified by Phospho-Mass Cytometry (CyTOF). Clinical Immunology Society (Miami, FL). Invited talk.
26 Sep 2013	Biomedical Engineering Society (Seattle, WA). Invited talk.
14 Dec 2013	Autoimmunity and Primary Immunodeficiency (Burlingame, CA), Immune Deficiency Family Day, Invited Talk.
May 2013	Visiting Professor, American University of Antigua Medical School (lectures to faculty and medical students)
12 Mar 2013	Primary Immunodeficiency Diagnostics. Children's Hospital Oakland Grand Rounds. Invited talk.
7 Sep 2014	Diagnostic tests for Primary Immunodeficiency Diseases. Immune Deficiency Foundation Family Day (Portland, OR). Invited Talk.
25 Oct 2014	The Link between Primary Immunodeficiency and Autoimmunity. Immune Deficiency Foundation (Sunnyvale, CA). Invited talk.
16 Dec 2014	High-bandwidth Biological AFM. AFM BioMed (San Diego, CA), Invited talk.

17 Feb 2015	Immunoglobulin Replacement and Autoimmunity in Immune Deficiencies. BioFusion Seminar (Los Angeles, CA), Invited talk.
4 Mar 2015	Applications of Atomic Force Microscopy in Mechanobiology and Immunology. UC Santa Barbara / Andor Academy. Invited Talk
30 Mar 2015	Six things you need to know so you can write amazing papers. Stanford ChEM-H Retreat. Invited Talk.
17 Apr 2015	Systems Approach to the Discovery of Novel Immune Diseases. Stanford Pediatrics Retreat. Invited Talk.
16 Sep 2015	Mechanics of T cell Activation. Stanford Biophysics Retreat. Invited Talk.
10 Oct 2015	CyTOF: New Diagnostic Techniques in PIDD. International Forum on Immunology Research Annual Meeting (Berlin, Germany). Invited Talk.
29 Jan 2016	Using Electronic Medical Records to Augment Registries for Primary Immunodeficiencies. USIDNET Face-to-Face Meeting (Bethesda, MD). Invited talk.
22 Mar 2016	Cytomechanical control of T cell activation. UCLA Pediatrics (Los Angeles, CA). Invited talk.
17 May 2016	AAI chair of “Technological Innovations in Immunology” session. Invited talk.
16 Jun 2016	Cytoskeletal adaptivity controls T cell signaling. FASEB Immunoreceptors meeting (Snowmass, CO). Invited talk.
23 March 2017	Mechanical forces and immune dysregulation. Paul Allen Foundation (Seattle, WA). Invited talk.
25 May 2017	Diagnosis and Treatment of rare, genetic immune diseases. Children’s Discovery Institute (Los Angeles, CA). Invited talk.
9 Jun 2017	Mechano-chemical feedback loop controls T cell activation. Los Angeles Immunology day (Los Angeles, CA). Invited talk.
17 Jun 2017	Identification of Primary Immunodeficiency in the Outpatient Office. Immune Deficiency Foundation National Meeting (Anaheim, CA). Invited talk.
29 Jun 2017	Mechano-chemical feedback loop controls T cell activation. Biomedical Research Institute (Rockville, MD). Invited talk.
5-8 Oct 2017	Genetics and Mechanisms of CVID. Ig Nursing Society (Las Vegas, NV). Invited talk.
6 Feb 2018	Mechanobiology of T cell activation (Houston, TX). Invited talk, 2nd Annual Fibrosis Symposium.
14 Apr 2018	Autoimmunity and Primary Immunodeficiency. Immune Deficiency Foundation Patient Day (Cerritos, CA). Invited talk.
3 Jun 2018	Pulmonary complication of Primary Immunodeficiency Disease. Foundation for Primary Immunodeficiency, Physicians Education Day (Newport Beach, CA). Invited Talk.

30 Aug 2018	Mechano-metabolic regulation of the immune response. Allergy & Immunology Grand Rounds / Joint Research Conference. University of South Florida. (Tampa, FL). Invited talk.
21 Sep 2018	11th Annual Sheldon C. Siegel Lecture: Intersections of Rare Immune Diseases with Common Infections. (UCLA). **Named endowed lecture**.
18 Oct 2018	Mechano-chemical feedback and T cell activation in autoimmunity and cancer. Cedars Sinai Immunology Seminar Series. (LA, CA). Invited talk.
9 Nov 2018	Jeffrey Modell Foundation Mini-Symposium: Intersections of Rare Immune Diseases with Common Infections. Children's Hospital of Los Angeles (LA, CA). **Named endowed lecture**.
14 Nov 2018	Intersection of Common Infections and Rare Immune Diseases. Immunology Grand Rounds at UC San Francisco (SF, CA). Invited talk.
15 Nov 2018	Mechano-metabolic regulation of T cells. Kyoto-UCLA International Symposium on Harnessing Physical Forces for Medical Applications Symposium. UCLA. Invited talk.
30 Jan 2019	Autoimmunity in Primary Immunodeficiency. Immunology Grand Rounds at UC Davis (Davis, CA). Invited talk.
23 Feb 2019	Adult Primary Immunodeficiency. AAAAI National Meeting (San Francisco, CA). Invited talk.
7 Mar 2019	The Heiner Lecture: Mechanochemical regulation of Immune responses. Harbor-UCLA / LA BioMed (Carson, CA). **Named endowed lecture**.
6 Apr 2019	Functional Validation. Clinical Immunology Society Annual Meeting (Atlanta, GA). Invited talk.
21 Apr 2019	Immunomodulation for Disseminated Coccidioidomycosis. Valley Fever Institute (Bakersfield, CA). Invited talk.
3 May 2019	Intersections of Rare Immune Diseases with Common Infections. Seattle Children's Research Institute / Immunology (Seattle, WA). Invited talk.
3 Jun 2019	Primary Immunodeficiency is the Vanguard of Applied Precision Medicine. University of Nebraska (Omaha, NE). Invited talk.
14 Jun 2019	Monogenic Autoimmunity. UCLA Medicine/Rheumatology Grand Rounds (UCLA). Invited talk.
21 Jun 2019	Biologicals and Inhibitors for Primary Immunodeficiency Disease. Immune Deficiency Foundation (Washington, DC). Invited talk.
21 Jun 2019	Overview of PID Genetics and Inheritance. Immune Deficiency Foundation (Washington, DC). Invited talk.
22 Jun 2019	Genetic Testing and PID: Investigating a VUS. Clinical Immunology Society / Immune Deficiency Foundation (Washington, DC). Invited talk.

23 Jun 2019	Gastrointestinal complication of Primary Immunodeficiency Disease. Foundation for Primary Immunodeficiency, Physicians Education Day (Newport Beach, CA). Invited talk.
28 Jun 2019	Mechanochemical regulation of Immune responses. UCLA Medicine/Pulmonary and Critical Care Grand Rounds (UCLA) Invited talk.
20 Sep 2019	Advances in Rare Immunological Diseases. Global Genes 2019 Rare Patient Advocacy Summit (San Diego, CA). Invited talk.
25 Oct 2019	Immunomodulation for disseminated coccidioidomycosis. UC Merced Cocci Symposium (Merced, CA). Invited talk.
22 Jan 2020	Genetic testing and T cell dysfunction in PID. San Diego Allergy Society (La Jolla, CA). Invited talk.
15 May 2020	Immunology of COVID-19. Pediatrics Grand Rounds (UCLA), invited talk.
27 May 2020	Immunology of COVID-19. Nephrology Grand Rounds (UCLA), Invited talk.
15 July 2020	Immunology of COVID-19. Immunoglobulin National Society, Invited talk.

XI. PUBLICATIONS (*Google scholar: Citations 12009, h-index 34, i10 index 53*)

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U.S. 62/205,590	Allergy Testing Systems and Methods. **Issued**.
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