

University of California, San Francisco
CURRICULUM VITAE

Name: Tejal A Desai, PhD

Position: Professor
 Bioengineering & Therapeutic Sciences
 School of Pharmacy

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EDUCATION

1990 - 1994	Brown University, Providence, RI	Sc.B. Biomedical Engineering	
1994 - 1998	University of California, San Francisco	Ph.D. Bioengineering	University of California, Berkeley (Advisor: Mauro Ferrari)

PRINCIPAL POSITIONS HELD

1998 - 2001	University of Illinois at Chicago	Assistant Professor	Department of Bioengineering
2002 - 2006	Boston University	Associate Professor	Department of Biomedical Engineering
2002 - 2006	Boston University	Associate Professor	Department of Pharmacology and Experimental Therapeutics
2006 - 2008	Boston University	Adjunct Associate Professor	Department of Biomedical Engineering
2005 - present	University of California, San Francisco	Professor	Department of Physiology, Bioengineering Program
2009 - present	University of California, San Francisco	Professor	Department of Bioengineering and Therapeutic Sciences

OTHER POSITIONS HELD CONCURRENTLY

1996 - 1996	Consiglio Nazionale della Ricerche, Rome, Italy	Visiting Scholar (summer)	
2002 - 2005	Boston University	Director	Laboratory of Therapeutic Microsystems
2002 - 2005	Whitaker Center for Cellular and Subcellular Engineering	Core Director	
2004 - 2005	Boston University	Associate Director	Center for Nanoscience and Nanobiotechnology
2004 - 2005	Boston University	Associate Chair of Graduate Studies	Biomedical Engineering
2005 - present	Therapeutic Micro and Nanotechnology Laboratory	Director	
2006 - present	Biomedical Micro/Nanotechnology Core Facility	Director	
2006 - present	SEP High School Program	Faculty Mentor	
2007 - 2009	University of California, San Francisco and Berkeley	Co-Chair	Joint Graduate Group in Bioengineering
2009 - present	University of California, San Francisco and Berkeley	Chair	Joint Graduate Group in Bioengineering
2009 - 2014	University of California, San Francisco	Vice Chair	Department of Bioengineering and Therapeutic Sciences
2010 - 2014	University of California, San Francisco	Director	Masters in Translational Medicine (MTM) Program
2010 - present	University of California, San Francisco	Executive Committee	Graduate Program in Medical Education (GEMS)
2011 - present	University of California, San Francisco	Executive Committee	QB3 (Institute for Quantitative Biomedical Sciences)
2014 - present	University of California, San Francisco	Capstone Director	Masters in Translational Medicine (MTM) Program
2014 - present	University of California, San Francisco	Chair	Department of Bioengineering and Therapeutic Sciences

HONORS AND AWARDS

1994	Member	Sigma Xi, Scientific Honor Society
1994	Fellowship of the Regents	University of California, San Francisco
1995	Graduate Fellowship Recipient	National Science Foundation
1995	Graduate Fellowship in Biomedical Engineering	Whitaker Foundation
1997	Graduate Conference Presentation Award	University of California, San Francisco
1997	Graduate Dissertation Research Award	University of California, San Francisco
1997	Graduate Students Association Travel Award	University of California, San Francisco
1998	Chancellor's Post-doctoral Fellowship for Academic Diversity (declined)	University of California
1998	Who's Who among America's Teachers	
1999	"40 under 40" Award: For leadership and innovation	Crain's Chicago Business
1999	MIT's TR100 Award	Technology Review Magazine's Top 100 Young Innovators
2000	Award of Distinction	University of Illinois, Chicago, College of Engineering
2000	CAREER Award	National Science Foundation
2000	Best Advisor Award	University of Illinois, Chicago, College of Engineering
2000	New Century Scholar Award	National Science Foundation
2001	Visionary Science Award	BioMEMS and Nanotechnology Society
2001	Invited Participant	Frontiers in Engineering, National Academy of Engineering
2002	Focused Giving Award	Johnson and Johnson
2002	Award for Contributions to Regenerative Medicine	McGowan Institute
2003	Grand Prize Award for Outstanding Research in Oral Drug Delivery	EURAND
2003	Globus Indus Technovator Award	Massachusetts Institute of Technology

2003	"Brilliant 10" Top Scientists in the Nation	Popular Science
2003	Invited Conference Participant	Whitaker Leadership Conference
2004	Woman of the Year	INDIA New England
2004	Award Finalist in Health and Medicine	World Technology Award
2004	Innovative Aspects of Oral Drug Delivery Award (paper competition)	Capsugel/Pfizer
2004	Invited Participant: Keck Futures Initiative: Designing Nanostructure	National Academy of Engineering
2004	Winner of INDUS Top 15	INDUS
2005	Nomination and Award	Women in Engineering Leadership Conference
2005	Judge in Nanotechnology	Siemens National Competition
2005	Featured Exhibit, Women in Nanotechnology	Lawrence Hall of Science
2006	Grand Prize Award for Innovative Approaches to Drug Delivery	EURAND
2006	Rogers Bridging the Gap Award for New Technologies	
2006	Distinguished Engineering Alumni Award	University of California, Berkeley
2007	Faculty Leadership Collaborative	University of California, San Francisco, UCSF/CORO
2007	Innovative Aspects of Oral Drug Delivery Award (2 paper awards)	Capsugel/Pfizer
2007	Career Award	Engineering in Medicine and Biology Society (EMBS)
2008	San Francisco's Top 40 under 40	7x7 Magazine
2008	Emerging Scholar Award	Diversity in Higher Education Journal
2009	Awards for best papers (Oral and Pharmaceutical Categories)	Controlled Release Society
2009	Senior Member	IEEE Society
2009	National Judge	Siemens Math, Science, and Technology Competition
2009	Work cited	Nature Medicine's 5 Big Ideas for Nanotechnology

2010	Standing member	NIH Biomaterials and Biointerfaces study section
2010	Dean's Citation for Excellence in Teaching	University of California, San Francisco
2011	Elected Fellow of American Institute of Medical and Biological Engineering (AIMBE)	American Institute of Medical and Biological Engineering (AIMBE)
2011	Translational Award Recipient	Wallace H. Coulter Foundation
2011	Review Committee	Whitaker International Scholars
2011	Nanotechnology Judge	Siemens National Competition
2012	Paul Dawson Biotechnology Award	American Association of Colleges of Pharmacy
2013	OME Precision Medicine Summit	Invited Participant
2013	Steering Committee	Whitaker International Scholars Program
2013	Featured Innovator	Scientific American
2013	McKinsey's 3rd Annual Women's Leadership Summit	Invited Participant
2014	Elected Fellow of BMES (Biomedical Engineering Society) Class of 2014	Biomedical Engineering Society (BMES)
2015	Brown Engineering Alumni Medal	Brown University
2015	Elected to the National Academy of Medicine (formerly the Institute of Medicine) Class of 2015	National Academy of Medicine
2015	AAUCSF 150th Anniversary Alumni Excellence Award	UCSF
2015	College of Engineering Best Mentor Award (UIC)	University of Illinois at Chicago
2015	NSF New Century Scholar Award	National Science Foundation
2015	Top department evaluations for Teaching (BU)	Boston University
2015	Deans Citation for Excellence in Teaching (UCSF)	UCSF

KEYWORDS/AREAS OF INTEREST

Nanostructured materials, BioMEMS and Biomedical Nanotechnology, bioengineering, drug delivery (Oral, Ocular, and Implantable), cell encapsulation technologies (Pancreatic and Neurosecretory), tissue engineering (Cardiovascular, Retinal, Corneal, and Bone), three

dimensional scaffold and matrix fabrication, medical devices, surface modification and biocompatibility

MEMBERSHIPS

- 1990 - present Society of Women Engineers (SWE)
- 1990 - present Women in Science and Engineering (WISE)
- 1992 - present Materials Research Society (MRS)
- 1995 - present International Society for Optical Engineering (SPIE)
- 1997 - present Biomedical Engineering Society (BMES)
- 1997 - present IEEE- Engineering in Medicine and Biology (EMBS)
- 1999 - present Society of Biomaterials (SFB)
- 2000 - present American Chemical Society (ACS)
- 2001 - present International Society of BioMEMS and Biomedical Nanotechnology, Board Member
- 2003 - present Controlled Release Society (CRS)
- 2004 - present Full Member, Sigma Xi
- 2011 - present American Association of Colleges of Pharmacy (AACCP)

SERVICE TO PROFESSIONAL ORGANIZATIONS

- | | | |
|-------------|--|---|
| 1998 - 1999 | International Society for Optical Engineering, Micro- and Nano fabricated Structures and Devices for Biomedical Environmental Applications (BioS Conference) | Scientific Program Committee |
| 1999 - 1999 | Cambridge Health Institute | Scientific Advisory Board and Session Chair |
| 1999 - 2001 | ASTM Committee F04, Division IV | Committee Member |
| 1999 - 2002 | NASA AEMC/JPL Science and Technology Working Group (STWG) to determine strategic research directions | Advisory Committee (1 of 8) |
| 2001 - 2005 | NASA Biomolecular Science Working Group | Advisory Committee |
| 2000 - 2000 | International Society for Optical Engineering, Micro- and Nano fabricated Structures and Devices for Biomedical Environmental Applications (BioS Conference) | Session Chairman |
| 2000 - 2000 | Sixth World Biomaterials Conference | Symposia Chair |
| 2000 - 2000 | World Congress for Medical Physics and Biomedical Engineering | Track chair (Bioceramics and Implants) and Workshop leader in BioMEMS |

2000 - 2000	UIUC/UIC Symposium on Engineering the Biomaterials Interface	Organizing Committee and Session Chair
2000 - 2000	BMES Annual Meeting	Track Chair
2000 - 2002	First International IEEE EMBS Conference on Microtechnology in Medicine and Biology	Organizing Committee
2000 - 2004	World Congress on BioMEMS and Biomedical Nanotechnology (Columbus, OH)	Session Chair and Organizing Committee
2000 - present	Oregon Public Broadcasting (OBP) & ICAN Productions Limited	Advisory Board for Science & Social, Ethical & Legal considerations
2001 - 2001	International Society for Optical Engineering, Micro- and Nano fabricated Structures and Devices for Biomedical Environmental Applications (BioS Conference)	Organizing Committee
2001 - 2001	BIOMEMS 2001 (Sunnyvale, CA)	Scientific Adviser and Chairperson
2001 - present	Lawrence Hall of Science, nanotechnology exhibits	Advisory Committee
2001 - 2002	Advamed	FDA Advisory Committee
2002 - 2002	APS/BMES Spring Meeting	Session Organizer
2002 - 2002	Joint IEEE-EMBS/BMES Conference	Organizing Committee for BioMEMS, Sensors, and Instrumentation program
2002 - present	BioMEMS & Biomedical Nanotechnology World	Scientific Advisory Committee (Washington, DC)
2003 - 2003	CNSF "Nanoporous Interfaces for Biomedical Application"	Congressional Outreach
2003 - 2003	Gordon Conference in Biomaterials	Discussion Leader, Biocompatibility/Tissue Engineering
2003 - 2004	IEEE Microtechnology in Biology	Organizing Committee and Session Moderator
2004 - 2004	7th World Biomaterials Congress (Sydney, Australia)	Session organizer
2004 - 2006	Boston Area BioMEMS Series (BABS)	Co-organizer, monthly regional seminar series
2005 - 2005	Nanotechnology 2005	Organizing Committee

2005 - 2005	Biomedical Engineering Society, Micro and Nano technology in Medicine	Track Co-Chair
2005 - 2006	IEEE Microtechnology in Biology Meeting	Program Co-chair
2005 - present	NISE NSF Nanotechnology Network	Advisory Board
2006 - 2006	NSTI Nano technology Conference, Bio Nano Materials	Track Co-Chair
2006 - 2006	CRS Workshop on Combination Products	Co-chair
2006 - 2006	IEEE/EMBS conference	Theme Co-chair
2006 - 2006	NAE's US Frontiers of Engineering Symposium	Organizing Committee (nano/bio interface)
2006 - 2006	UCSF/UC Berkeley Bioengineering Research Conference	Chair
2006 - present	Cleveland Clinic Biomedical Engineering Department	External Advisory Committee
2006 - present	Gordon Conference in BioMEMS	Co-Chair
2007 - 2007	NSTI Nano technology Conference	Track Co-Chair (Biomedical nano technology)
2007 - 2007	BMES Conference	Chair of nanofabrication track
2007 - 2007	CRS Session on Biological Response to Nano materials	Co-chair
2007 - 2007	UC Systemwide Annual Bioengineering Conference	Organizing Chair
2007 - present	BioMEMS Technical Activities Committee for EMBS	Advisory Board
2008 - 2008	NSTI Nano technology Conference	Track Co-chair (BioNanotechnology)
2008 - present	Nanotechnology Science Advisory Workgroup for the State of California	Member
2008 - present	Arizona State University CREST Center	External Advisory Committee
2009 - 2009	Experimental Biology Meeting	Session Co-chair (Cardiovascular BioMEMS)
2009 - 2009	Let's Have an Awesome Time Doing Science Conference at UCSF	Session Chair
2009 - 2009	Cross Campus Stem Cell Workshop	Organizing Committee
2009 - 2011	K-8 STEM Conference, The Nueva School	Co-Chair

2010 - 2010	BMES 2010	Track Chair (micro and nano technologies)
2010 - 2010	IEEE EMBC 2010 Meeting (Buenos Aires, Argentina)	Theme Chair (Cell and Tissue Engineering)
2010 - 2010	National ACS Meeting	Session Co-Chair (Biomaterials)
2010 - 2010	ACS Spring Meeting	Session Chair (BIOT Emerging Technologies)
2010 - present	Center for the Science and Engineering of Materials (CSEM) at Caltech	Science Advisory Board
2011 - 2011	The Nueva School Science Fair	Organizer
2011 - present	University of California, Davis	Bioengineering Advisory Board
2011 - present	Carnegie Mellon University	Presidential Advisory Board
2011 - present	San Francisco Exploratorium	Scientific Advisor
2011 - present	Whitaker International Scholars Program	Scientific Review Board Member
2012 - present	UCLA Cancer Center	Advisory Board Member
2013 - 2013	Biomedical Engineering Society Annual Meeting	Track Chair, Cellular and Molecular Bioengineering
2013 - 2013	Biomaterial and Drug Development Laboratory at Stanford	External Advisory Board Member
2014 - 2014	Biomedical Engineering Society Annual Meeting	Track Chair, New Technologies
2014 - 2014	Biomedical Engineering Society Meeting	Track Chair, New Frontiers
2013 - 2016	Whitaker International Research Foundation	Steering Committee Member
2015 - 2016	Bioengineering Institute of California, 17th Annual UC-wide Bioengineering Symposium	Chair & Organizer

SERVICE TO PROFESSIONAL PUBLICATIONS

1998 - present	Ad hoc referee for Science, Advanced Materials, Nature Nanotech, Small, JACS, Journal of Colloids and Surfaces, Journal of Polymer Science, Biomaterials, Journal of Biomedical Materials Research, Tissue Engineering, Journal of Nanoscience and Nanotechnology, Biosensors and Bioelectronics, Biotechnology and Bioengineering, Cell and Tissue Research, Nanoletters, Lab on a chip
2001 - present	Associate Editor, Biomedical Microdevices
2004 - present	Senior Editor, Langmuir (leading journal in surface science, published by ACS)
2005 - present	Associate Editor, Nanomedicine
2006 - present	Editorial Board, International Journal of Nanomedicine

- 2007 - present Area Editor of IEEE EMBS Journal Reviews on Biomedical Engineering
- 2007 - present Associate Editor, ASME Nanomedical Science and Engineering
- 2009 - present Editorial Board, Cancer Nanotechnology
- 2010 - present Editorial Board, Advanced Drug Delivery Reviews
- 2011 - present Editorial Board, European Pharmaceutical Sciences Journal
- 2011 - present Editorial Board, Pharmaceutical Nanotechnology
- 2011 - present Editorial Board, Drug Delivery Letters
- 2013 - present Board of Associate Editors, Cellular and Molecular Bioengineering, Journal of the Biomedical Engineering Society

INVITED PRESENTATIONS - INTERNATIONAL

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|------|--|-----------------|
| 2000 | IEEE Conference in Microtechnology and Biology, "Biohybrid MEMS for Tissue Engineering and Drug Delivery," Lyon, France | Keynote Speaker |
| 2000 | BioMEMs and Nanotechnology World 2000 Conference, "BioMEMetic Interfaces for Implantable Therapeutic Devices," Columbus, OH | Plenary Speaker |
| 2001 | BioMEMS and Nanotechnology World Conference, "Micro/Nanoscale Constructs for Delivery and Detection," Columbus, OH | Plenary Speaker |
| 2001 | American Vacuum Society International Meeting, "Interfacial BioMEMS: Bridging the Micro to the Macro," San Francisco, CA | Invited talk |
| 2001 | National Research Council, "Applications of Microsystems/Nanotechnology to the Life Sciences" Banff, Canada | Panel Speaker |
| 2002 | World Congress on Biomedical Nanotechnology, "Microengineering Cellular Habitats for Cardiomyocytes," Columbus, OH | Speaker |
| 2002 | Micralyne, Inc., Edmonton, Canada | Speaker |
| 2002 | Provincial Lab Technology and Research Symposium, "Micro and Nanofabricated Constructs for Targeted Drug Delivery in Infectious Diseases," Calgary, Canada | Invited Talk |
| 2002 | Toray Industries, Tokyo, Japan | Invited Talk |
| 2002 | Edmonton Council for Advanced Technology (ECAT), "Biomedical Micro/Nanotechnology for Therapeutic Targeting and Delivery" | Invited Talk |
| 2002 | NSF's International Workshop on Advances in Micro and Nano Technologies for Sensing Applications, Melbourne, Australia | Speaker |
| 2003 | Japan-US Symposium: Tools and Metrology for Nanotechnology, Cornell University | Speaker |

2003	Europe Nanotech 2003, Montreux, Switzerland	Invited Talk
2003	International Controlled Release Society Meeting, Glasgow, UK (via video-conference)	Eurand Grand Prize Award Invited Speaker
2003	2nd Annual US/Japan delegation in Therapeutic Nanotechnology	Speaker
2003	AVS 50th International Symposium, Baltimore, MD	Invited Talk
2004	International Cell Culture Meeting, "Microengineering Cellular Habitats for Tissue Engineering and Cell Based Analysis," Cancun, Mexico	Speaker
2004	General Electric Global Technology Symposium, Schenectady, NY	Speaker
2004	Man/Machine Interactions Conference, University of Groningen, Netherlands	Speaker
2004	US/Germany ACS Delegation: Frontiers in Chemistry, Munich Germany	Invited Speaker
2004	BioMEMS and Nanotechnology World Congress, "Micro and Nano Therapeutic Platforms," Washington, DC	Plenary Speaker
2004	ETH Zurich, Department of Material Science	Invited Lecturer
2005	US Japan Nanotechnology Symposium, "Micro and Nanotherapeutics," Northwestern University	Speaker
2005	Nanotechnology Congress, Sapporo, Japan	Speaker
2005	International Symposium on Soft-Nanotechnology 2005 (ISSN2005), Hokkaido University	Speaker
2005	US/Japan Young Leaders in Nanotechnology Delegation, Tokyo, Japan	Speaker
2006	Nanotechnologies for Cell Investigation, Curie Institute, Paris, France	Speaker
2006	Controlled Release Society, Oral Delivery of Macromolecular Drugs	Invited Lecturer
2007	Second International "Stem Cells and Regenerative Medicine Conference," Brisbane, CA	Speaker
2007	Gordon Conference in Thin Organic Films, Aussois, France	Speaker
2007	University of Navarro Biomedical Engineering Program, Pamplona, Spain	Inaugural Speaker
2007	IEEE EMBS Conference, Lyon, France	Speaker
2007	UCSF-Chile Ciencia Para la Vida Science Exchange, Santiago, Chile	Speaker

2008	International Workshop on Biomaterials for Tissue Engineering and Biotechnological Applications (BTEB-2008) at IIT Kharagpur India (declined)	Speaker
2008	AVS International Symposium, "BioMEMS: From Science Discovery to Technology to Clinic," Boston, MA (declined)	Invited Talk
2008	2008 International Electron Devices Meeting, Nanotechnologies for Medicine and Biology, Emerging Technology Session	Speaker
2009	Frontiers of Pharmaceutical Science Symposium, Toronto, Canada	Speaker
2009	iNANO symposium, Aarhus University, Denmark	Speaker
2009	BioMEMS, Lab-on-chip, and Micro-implantable Systems Session, International American Vacuum Society Meeting, San Jose, CA	Speaker
2009	Composites at Lake Louise (CALL) Conference, Lake Louise, Canada	Invited Talk
2010	ASME 2010 First Global Congress on NanoEngineering for Medicine and Biology (NEMB2010), Special Session, "Size, Shape, and Surface Properties in Particle-Based Drug Delivery," Houston, TX	Speaker
2010	37th International Conference on Metallurgical Coatings and Thin Films, Topical Symposium, "Bioactive Coatings and Surface Biofunctionalization" San Diego, California	Invited Talk (Topical symposium) and Speaker
2010	8th International Conference and Workshop on Biological Barriers, "In Vitro Tools, Nanotoxicology, and Nanomedicine," Saarland University, Germany	Speaker
2011	85th ACS Colloid and Surface Science Symposium, Montreal, Canada (declined)	Speaker
2011	Innovation in Mind Conference, Lund, Sweden	Keynote Speaker
2011	Helsinki Drug Research Congress, "Miniaturized Drug Delivery Systems"	Invited Talk
2012	Santen, Inc, "Ocular Drug Delivery," Quebec City, Quebec	Invited Presentation
2013	National Academic of Engineering China-American Frontiers in Engineering Mtg., Beijing China	Invited Talk
2013	Indo-US Symposium on Molecular Materials, Bangalore, India	Invited Talk
2014	Santen, Inc, "Ocular Drug Delivery," Paris, France	Invited Talk
2014	Whittaker Meeting, Rome, Italy	Speaker
2015	Whittaker Meeting, Budapest, Hungary	Speaker

2015	WWOM, Capetown, South Africa	Speaker
2015	George & Angelina Kostas Research Center for Cardiovascular Nanomedicine Annual International Meeting, Houston, TX	Invited Speaker
2016	First IberoAmerican Congress on Biotechnology, Salamanca, Spain	Invited Plenary Speaker

INVITED PRESENTATIONS - NATIONAL

1998	SWE Chicago Student Society	Speaker
1998	Arizona State University, Department of Biomedical Engineering	Speaker
1998	Georgia Tech University and Emory University, Departments of Bioengineering	Speaker
1998	Tulane University, Department of Biomedical Engineering	Speaker
1998	Stanford University, Department of Mechanical Engineering	Speaker
1998	Center for Biomolecular Science and Engineering, Naval Research Laboratory	Speaker
1998	Georgia Institute of Technology, Advances in Tissue Engineering	Speaker
1998	Cleveland Clinic, Department of Bioengineering	Speaker
1999	EMBS & AWIS Chicago Student Societies	Speaker
1999	Department of Critical Care and Respiratory Medicine, University of Illinois, Chicago	Speaker
1999	Department of Ophthalmology, University of Illinois, Chicago	Speaker
1999	Department of Orthopedics, University of Illinois, Chicago, "Orthopedic Tissue Engineering"	Speaker
1999	Baxter Corporation (Deerfield, IL), "Principles of Cardiac Tissue Engineering"	Speaker
1999	College of Dentistry, Ohio State University, "Tissue Engineering and BioMEMS"	Speaker
1999	Beckman Institute, University of Illinois, Urbana-Champaign, "Cell Microtechnology"	Speaker
1999	Electromechanical Society of Chicago, "Tissue Engineering: Biocapsules & Beyond"	Speaker
1999	Cambridge HealthTech Institute, "Micro and Nano Tissue Engineering Constructs: Interfacing with the Biological World," Bioengineering for Biomedical and Biotechnical Applications, Boston, MA	Speaker
2000	American Chemical Society, Congressional House Panel, "Biomedical Applications of Nanotechnology," Washington DC	Speaker

2000	Northwestern University, "Microfabricated Tissue Engineering Constructs"	Speaker
2000	NanoteK Meeting, KRAFT, Inc, "Tissue Engineering at the Micro and Nanoscale"	Speaker
2000	Department of Endocrinology, University of Illinois, Chicago, "Endocrin Technology"	Speaker
2000	Department of Pharmacology, University of Illinois, Chicago, "Drug Delivery Nanotechnology"	Speaker
2000	Portland Business Conference, Frontiers in Biotechnology	Speaker
2000	NIH/BECON Nanoscience and Nanotechnology Symposium	Speaker and Panel Participant
2000	Intel Corporation, "Integrating Biology with Microtechnology," Portland, OR	Speaker
2000	University of Kentucky, Advanced Science and Technology Center, "Micro and Nanofabricated Tissue Engineering Constructs"	Speaker
2000	Whitaker Foundation Educational Summit, "Microtechnology in Biomedicine"	Session Chair and Speaker
2001	Department of Chemical Engineering, University of Maryland at Baltimore County	Speaker
2001	SPIE BIOS Micromachined Therapeutic Delivery Devices, "Biomedical Instrumentation Based on Micro/Nanotechnology," San Jose, CA	Invited talk
2001	LabAutomation, "BioMEMS-based Platforms for in vitro Tissue Engineering," Palm Springs, CA	Speaker
2001	Northwestern University, "Microtherapeutics and Nanotherapeutics: From Concept to Clinic"	Speaker
2001	Boston University, "Mico- and Nanotherapeutic Constructs: From Concept to Clinic"	Speaker
2001	Harvard University, "Microfabricated Biohybrid Constructs: New Approaches for Therapeutic Delivery Systems"	Speaker
2001	Oakridge National Lab, "Implantable BioMEMS"	Speaker
2001	Engineering Tissue Growth, "The Technology of Microfabrication and Micromachining for Tissue Engineering," Pittsburgh, PA	Speaker
2001	American Chemical Society, "Biomolecular Separation Microtechnology," San Diego, CA	Speaker
2001	Stanford University, "BioMEM-etic Interfaces: Integrating Cells with Microsystems," Department of Chemical Engineering	Speaker
2001	BioMEMS 2001, "Cell Based Microfabricated Therapeutic Constructs"	Speaker

2001	Dorothy M. Davis Heart and Lung Research Institute, "Cardiovascular Tissue Engineering: A Microscale Approach," Columbus, OH	Speaker
2001	Abbott Laboratories, "BioMEMS-Based Tools for Microscale Tissue Engineering"	Symposium Speaker
2001	Controlled Release Society Annual Meeting, "From Pores to Particles: Mico and Nanofabricated Constructs for Drug Delivery," San Diego, CA	Speaker
2001	SmartTalk 2001, "Microengineering Extracellular Environments," San Diego, CA	Speaker
2001	Nanotechnology in early detection of cancer , NIH/NIST Joint Workshop, Gaithersburg, MD	Speaker and Panelist
2001	Material Research Society, Boston, MA	Speaker
2002	Gordon Conference on Drug Delivery Systems, Ventura, CA	Speaker
2002	Drug Carriers in Medicine and Biology, Gordon Research Conference, "Nanofilters for Controlled Drug Delivery"	Speaker
2002	McGowan Center for Engineered Tissue, University of Pittsburgh	Invited Seminar
2002	Center for Innovative Medicine in Technology, Boston, MA	Speaker
2002	Washington University in St. Louis, BME Day, "Integrating Cells with Microsystems"	Keynote Speaker
2002	University of Michigan	Invited Seminar
2002	Northeast Bioengineering Conference, "Microengineering Cellular Habitats: Pegs, Pores, Polymers, and More," Tissue Engineering Track, Philadelphia, PA	Keynote Speaker
2002	UCLA Short Course in BioMEMS, Los Angeles, CA	Invited Lecturer
2002	Integrating BioMEMS and Nanotechnology into a Commercialized Product, California Nanosystems Institute, Los Angeles, CA	Short Course Speaker
2002	BioMEMS 2002 "Nanopores for Therapeutic Delivery," Knowledge Foundation Annual Conference, Boston, MA	Invited Talk
2002	Johnson and Johnson	Invited Talk
2002	Becton Dickinson	Invited Talk
2002	Princeton University, Department of Electrical Engineering	Speaker
2002	ASME Short Course in BioMEMS, "Micro and Nanofabricated Constructs for Cellular Delivery and Immunoisolation," Boston, MA	Lecturer
2002	MDG Industrial Forum, "Opportunities for Micro/nanotechnology in Therapeutics"	Speaker
2002	Academy of Dental Materials, "BioMEMS-based Tools for Tissue Engineering," Honolulu, HI	Keynote Talk

2002	Shriners Burns Hospital, Biomedical Science and Engineering Seminar Series, "Microfabricated Platforms for Customized Cellular/Drug Delivery," October 2002, Boston, MA	Speaker
2002	Northeastern University, "Nanoporous Vehicles for Drug Delivery," Boston, MA	Speaker
2002	Purdue University, "Micro and Nanoengineered Interfaces for Therapeutic Delivery," Lafayette, IN	Speaker
2003	Spring 2003 Meeting of the Materials Research Society, "Microengineering Cellular Environments," San Francisco, CA	Speaker
2003	Spring 2003 Meeting of the American Chemical Society, "Biological Applications of Nanomaterials and Nanotechnology," New Orleans, LA	Speaker
2003	IBC's BioMEMS and Microfluidics 2003, San Diego, CA	Invited Talk
2003	Massachusetts Institute of Technology, "Microfabricated Platforms for Drug Delivery"	Speaker
2003	Association of Medical Instrumentation (AAMI), "Biomedical Applications of Nanotechnology," Long Beach, CA	Invited Talk
2003	American Chemical Society, Chicago, IL	Invited Talk
2003	CIMIT Forum in Nanotechnology, "Nanotechnology and Drug Delivery," Boston, MA	Speaker
2003	Stanford University, Department of Bioengineering, Biodesign Seminar Series	Seminar Speaker
2003	NASA Nanotech Briefs, "Nanotherapeutics: The Future of Medicine"	Speaker
2003	Wellesley College, Department of Chemistry	Speaker
2003	American Heart Association, "Cardiovascular Microscale Tissue Engineering"	Speaker
2003	AVS 50th International Symposium, "BioMEMS Devices and Systems," Baltimore, MD	Invited Talk
2003	ALZA, "Micro and Nanofabricated Platforms for Drug Delivery," Mountain View, CA	Invited Talk
2004	Short Course sponsored by CNI "Microtechnology in Drug Delivery," San Diego, Chicago, Boston, and San Jose	Invited Speaker
2004	Nanotechnology 2004, "Nanotherapeutics and Beyond," Boston, MA	Keynote Speaker
2004	General Electric Global Technology Symposium, "Biohybrid Devices for Cell Encapsulation," Schenectady, NY	Speaker
2004	BioMEMS 2004, "Cytoadhesive Microdevices for Oral Drug Delivery," Boston, MA	Speaker

2004	NIH Immunobarriers Symposium, "Nanoperforated Materials for Immunoisolation," Bethesda, MD	Speaker
2004	Spring 2004 Meeting of the Materials Research Society, San Francisco, CA	Speaker
2004	Cornell University, Department of Bioengineering	Invited Lecturer
2004	University of California, Irvine, Department of Biomedical Engineering	Invited Lecturer
2004	Whitaker Foundation, "Micro and Nanotherapeutics: Approaches for Targeting and Delivery," La Jolla, CA	Keynote Speaker
2004	University of California, San Francisco & Berkeley, Bioengineering Graduate Group	Invited Seminar Leader
2004	Nanomedicine Summit, Cleveland, OH	Plenary Speaker
2004	Johnson & Johnson, Drug Device Combinations	Keynote Speaker
2004	Society of Experimental Mechanics: 15th International Invitational Symposium on the Unification of Analytical, Computational, and Experimental Solution Methodologies, "Microfabricated scaffolds for three-dimensional tissue engineering - controlling tissue architecture at the microscale", (UACEM in MEMS and Nanotechnology)	Invited Speaker
2004	7th World Biomaterials Congress, "Microtextured Three-Dimensional Tissue Scaffolds"	Invited Talk
2004	Eleventh Annual Glaucoma Foundation Optic Nerve Rescue and Restoration Think Tank, "Bioadhesive Microdevices for Controlled Drug Delivery"	Invited Talk
2005	Whitaker Educational Summit, "Education in Drug Delivery"	Speaker
2005	NSEC Seminar Series, Micro/Nanofabrication for Cellular Delivery and Targeting, Ohio State University	Speaker
2005	ALZA, "Microtechnology for Tissue Engineering and Drug Delivery," Mountain View, CA	Invited Seminar Leader
2005	Advances in Drug Delivery, "Bioadhesive Microdevices," Salt Lake City, UT	Speaker
2006	Micro and Nano-systems, University of Texas	Distinguished Speaker
2006	North American Membrane Society (NAMS) Meeting	Plenary Lecture
2006	Materials, Medicine and Nanotechnology Summit, Cleveland, OH	Plenary talk
2006	Gordon conference in BioMEMS, "Challenges in Therapeutic Microtechnology," New London, CT	Speaker
2006	BMES, "Nanotechnologies for Tissue Engineering"	Speaker

2006	Cornell University Nanobiotechnology Center 7th Annual Symposium	Keynote Speaker
2006	Stanford University, Department of Materials Science	Speaker
2006	University of California, San Francisco, Ophthalmology Day, "Microtechnology for Retinal Delivery"	Speaker
2006	Amgen Corporation, Micro/nanotechnology for Drug Delivery, Thousand Oaks, CA	Invited Seminar Leader
2007	TMS conference, "Nanoscale Architectures for Osseointegration," Orlando, FL	Invited talk
2007	Stanford Excellence in Cancer Nanotechnology Series, "Nanostructured Devices for Therapeutic Delivery"	Speaker
2007	Discovery Chemistry Series, DuPont, Delaware	Speaker
2007	Therapeutic Micro and Nanotechnology, Lawrence Berkeley National Labs	Speaker
2007	Bioadhesive Nanotechnology, PSPG program retreat, San Francisco, CA	Speaker
2007	Roche Pharmaceuticals, MINT meeting, "Micro and Nanofabricated Therapeutic Interfaces"	Keynote Speaker
2007	UC Nanotechnology Symposium, Burlingame CA	Speaker
2007	NSTI meeting, "Nanotechnology for Biomaterials and Tissue Engineering," San Jose, CA	Opening Speaker and Chair
2007	Cornell Nanofabrication Center 10th Annual Meeting	Keynote Speaker
2007	Exploratorium Nano Forum, NISE Network and San Francisco City College	Featured Speaker
2008	Invited participant, National Cancer Institute workshop on "Future Directions for Cancer Nanotechnology: Diagnosis and Prevention Focus," Bethesda, MD	Invited Participant
2008	Exploratorium Nano Medicine Forum	Keynote Speaker
2008	QB3 (UCSF) Friday faculty lunch series, Therapeutic Micro and Nanotechnology	Speaker
2008	University of Arkansas, Fayetteville, AR	Speaker
2008	Nanotechnology Forum in Health: Risks and Benefits, Math and Science Career and Technical Education Conference for K-12 Teachers and Future Teachers, San Francisco, CA	Workshop Leader

2008	TechBridge Girls Program	Faculty Participant
2008	Department of Ophthalmology (UCSF) Therapeutic Delivery to the Eye	Speaker
2008	Convergence Conference, "Disease Targeting," Palo Alto, CA	Speaker
2008	"Advances in Nanomedicine 2008" symposium, held during the 236th National Meeting of the American Chemical Society, Philadelphia, PA (declined)	Invited Speaker
2008	Gordon conference in Drug Carriers, "Nanostructured Platforms for Therapeutic Delivery," Montana (declined)	Speaker
2008	Therapeutic Micro and Nanotechnology, Genentech Off-site meeting, Half Moon Bay, CA	Keynote Speaker
2008	Graduate Education in Bioengineering, Future of Bioengineering Workshop, University of California, San Diego	Invited talk and facilitator
2009	Special session in nanotechnology and nutrition at the 2009 Experimental Biology Meetings, New Orleans (declined)	Invited talk
2009	Special session in Cardiovascular BioMEMS at the 2009 Experimental Biology Meetings, New Orleans	Invited talk and Session Chair
2009	Microelectromechanical Systems in Cell Biology session, APS/BMES meeting, New Orleans	Invited talk
2009	Science Cafe	Speaker
2009	Women in Science Visiting Scholar Lecture, WISE program, University of Illinois, Chicago	Lecturer
2009	Depomed, Inc, "Nanostructured Interfaces for Bioadhesive Drug Delivery"	Invited seminar speaker
2009	DNV Course, Haas Business School, A Survey of Nano-bioengineering and Therapeutic Sciences, Berkeley, CA	Invited speaker
2009	People in Science Panel, "Nanotechnology," The Nueva School	Speaker
2009	IEEE/NIH 2009 Life Science Systems and Applications (LiSSA'09) Workshop on Nanomedicine, Washington DC	Speaker
2009	IRACDA Conference, "Work-life Balance in Academia"	Invited Panelist
2009	American Course on Drug Development and Regulatory Sciences (ACDRS), "Nanotechnology and Drug Delivery," San Francisco	Speaker
2009	"Influencing the Cellular Microenvironment using Micro and Nanostructures," Kimberly Clarke Corporation, Atlanta, GA	Invited Seminar
2009	"Nanostructured Interfaces for Therapeutic Delivery," University of Texas, Austin, Biomedical Engineering	Invited Seminar

2009	"Nanostructured Devices for Drug Delivery," Berkeley Nano Seminar Series	Invited Seminar
2009	Lawrence Berkeley Labs, Molecular Foundry User's Meeting, "Bio-inspired Nanostructures"	Speaker
2009	Glaucoma Summit, American Academy of Ophthalmology Annual Meeting, San Francisco	Invited talk
2009	BioMEMS, Lab-on-chip, and Micro-implantable Systems Session, International American Vacuum Society meeting, San Jose, CA	Invited talk
2009	Department of Chemical and Biological Engineering, Drexel University, Philadelphia, PA	Invited Seminar
2009	Department of Biological Engineering, Massachusetts Institute of Technology	Invited Seminar
2010	Nanomedicine Education Workshop at the Controlled Release Society's 37th Annual Meeting and Exposition in Portland, Oregon	Speaker
2010	Round Table Session organized by the Oral Drug Delivery Focus Group at the Controlled Release Society's 37th Annual Meeting and Exposition in Portland, Oregon	Speaker
2010	Inaugural Symposium, Department of Bioengineering and Therapeutic Sciences, UCSF	Speaker
2010	Department of Bioengineering, University of California, Berkeley	Seminar Speaker
2010	2010 Pacific Coast Conference of the American Medical Writers Association at Asilomar	Invited Presenter
2010	University of Texas, Southwestern	Invited Seminar
2010	University of California, Berkeley and San Francisco, Graduate Bioengineering Meeting	Invited Speaker
2010	Caco Bay Area industry group	Invited Speaker
2010	Santen Corporation/AAO Drug Delivery Meeting	Invited Speaker
2010	University of California, San Francisco and Berkeley, Neural Engineering Retreat	Invited Speaker
2010	University of Utah, Department of Bioengineering and the Nano Institute of Utah	Distinguished Speaker
2010	FDA Center for Biologics Evaluation and Research (CBER), Office of Cellular, Tissue, and Gene Therapies (OCTGT), and Juvenile Diabetes Research Foundation, Regenerative Medicine Approaches to the Treatment of Diabetes	Speaker
2011	39th Electronic Materials Symposium (EMS 2011), Santa Clara, CA	Speaker

2011	University of California, San Diego's Center for Excellence in Nanomedicine (CEN)	Speaker
2011	American Course on Drug Development and Regulatory Sciences (ACDRS), San Francisco, CA	Speaker
2011	Al Mann Foundation Vascular Stent Meeting	Kickoff Speaker
2011	ARCS Symposium, Frontiers in Science, San Francisco, CA	Keynote Speaker
2011	Institute for Biophyscial Dynamics, Seminar Series, University of Chicago	Distinguished Speaker
2011	Microdevices Mini Symposia Session at the Controlled Release Society's 38th Annual Meeting and Exposition, National Harbor, Maryland	Speaker
2011	Department of Biomedical Engineering at the University of California, Davis, Distinguished Seminar Series	Distinguished Speaker
2012	UCSF GEMS: Demystifying Medicine Lecture Series "Diabetic Macular Edema/Age-Related Macular Degeneration"	Seminar Speaker
2012	National Academy of Sciences Indo-American Frontiers of Engineering	Invited symposium participant
2012	California Institute for Regenerative Medicine, "Enhancing the Cellular Microenvironment using Micro and Nanostructured Cues"	Invited talk
2012	Lablinks Neural Stem Cell Conference, "Improving the delivery of neural stem cells: an engineering approach," San Francisco, CA	Invited talk
2012	Sanofi, "Therapeutic micro and nanotechnology," San Francisco, CA	Invited presentation
2012	GEMS presentation, "Demystifying medicine: Ocular Therapeutics," San Francisco, CA	Invited Presentation
2012	The 10th International Summer School on Biocomplexity from Gene to System sponsored by the NSF: "Nanoporous Implants for Therapeutic Delivery;" "Nanostructured Interfaces;" and "Micro and Nanostructured Cues for Tissue Regeneration"	Invited talk (3 total)
2012	"Innovation in pharmacy research and education," AACP Annual Meeting	Panelist
2012	Coulter Annual Meeting, "Nanostructured Thin Films for Ocular Drug Delivery"	Presentation
2012	IEEE EMBS, Micro and Nanotechnology in Medicine Conference, Maui, HI	Invited Speaker
2013	UCOP Technology Transfer Forum	Invited Talk

2013	Milken Annual Global Conference "Bioscience Discoveries that will Blow Your Mind," Los Angeles, CA	Invited Speaker and Panelist
2013	National Academy of Sciences (NAS) Biomedical Engineering Materials and Applications (BEMA), Woods Hole, MA	Invited Speaker and Panelist
2013	2013 GRC Biomaterials and Tissue Engineering, Holderness School, New Hampshire	Invited Talk
2013	Center for BioEngineering, University of California Santa Barbara	Invited Seminar Speaker
2013	Bay Area Science Festival Discovery Talk, Commonwealth Club, San Francisco	Keynote Speaker
2013	UCSF's Mission Bay 10th Anniversary Celebration	Invited Speaker
2013	Dreamforce 2013, Unusual Thinkers Session	Keynote Speaker
2013	JDRF Encapsulation Consortium Meeting	Speaker
2013	Biomedical Engineering Society Annual Meeting Careers in BME	Panelist
2014	ASME 2014 3rd Global Congress on NanoEngineering for Medicine and Biology, Feb. 2-5, San Francisco, CA	Keynote Speaker
2014	17th Annual Foresight Conference, Feb. 7-9, Palo Alto, CA	Invited Speaker
2014	Novartis Science and Technology Forum (Feb 26)	Invited Speaker
2014	Bay Area BioEconomy Symposium - IDEO	Invited Speaker
2014	UW-Madison Stem Cell & Regenerative Medicine Center's Visiting Speakers' Series	Invited Speaker
2014	College of Pharmacy, Oregon State University	Invited Seminar
2014	ASIP/EB Meeting in San Diego (April 26-30)	Keynote Speaker
2014	Genentech Immunology and Ophthalmology clinical science group	Invited Seminar Speaker
2014	GRC Drug Carriers in Medicine and Biology	Invited Speaker
2014	UCSF/UCB Bioengineering 30th Anniversary Event	Invited Speaker
2014	Rosenman Institute Launch, UCSF	Introductory Speaker
2014	Seminar at University of Southern California	Invited Seminar Speaker
2014	Stanford Bioengineering Colloquium	Invited Seminar Speaker
2014	BioInterface 2014 Annual Symposium	Invited Speaker

2014	2nd Biennial IEEE EMBS Micro and Nanotechnology in Medicine Conference, Oahu, Hawaii	Invited Speaker
2015	89th American Chemical Society Colloid and Surface Science Symposium, Pittsburgh, Pennsylvania	Invited Plenary Lecturer
2015	UC Riverside BIEN Department	Distinguished Speaker
2015	Diabetes & Obesity Research Seminar	Invited Seminar Speaker
2015	Kostas Research Center for CV Nanomedicine, Houston Methodist Research Institute	Keynote Speaker
2015	Research Seminar, Dept. of Chemistry and Biochemistry, Cal State Fullerton	Invited Seminar Speaker
2015	Students in Biodesign Conference, Stanford University	Speaker
2015	Cell-Matrix Mechanobiology Workshop, University of Illinois, Champaign-Urbana	Speaker
2015	Seminar, Nanomedicine Center, U Penn	Seminar Speaker
2015	Preclinical Form and Formulation for Drug Discovery, Waterville, NH	Speaker
2015	IEEE Biomimetics Meeting, Intel, Santa Clara, CA	Speaker
2015	Symposium, MRS Meeting, Boston, MA	Speaker
2016	Distinguished Broom Seminar Speaker, University of Utah, UT	Invited Seminar
2016	7th Annual Bay Area Biomedical Device (BABMD) Conference, San Jose, CA	Invited Guest Speaker
2016	Crossing Boundaries to propel Tissue Engineering into the Clinic, Stanford, Palo Alto, CA	Invited Speaker
2016	JDRF Research Summit, San Francisco, CA	Invited Speaker
2016	NanoDDS16, Baltimore, MD	Invited Speaker

INVITED PRESENTATIONS - REGIONAL AND OTHER INVITED PRESENTATIONS

2015	UC Berkeley-UCSF Joint Graduate Group in Bioengineering Alumni/Industry Speaker Series	Invited Speaker
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GOVERNMENT AND OTHER PROFESSIONAL SERVICE

1998 - present	National Science Foundation Grant Reviews
1998 - present	NASA Grant Reviews
2002 - 2003	National Institute of Health Neurotechnology special study section
2002 - 2006	National Institute of Health Bioanalytical Chemistry Study Section

2008 - present	NIH Cancer Nanotechnology and Nanotechnology study section	Ad Hoc Member
2009 - 2009	National Institute of Health NIBIB P41	Reviewer
2010 - 2010	National Institute of Health NCI U54 (Centers for Cancer Excellence)	Reviewer
2010 - 2013	National Institutes of Health Biomaterials and Biointerfaces Study Section	Member
2011 - present	National Institute of Health, Biomaterials and Biointerfaces Study Section	Member
2014 - present	National Institute of Health, Biomaterials and Biointerfaces, Study Section	Chair
-	Misc. Grant Reviewing: American Institute for Biological Sciences, North Carolina Biotechnology Development Program, State of Virginia Commonwealth Technology Research Council, Louisiana Board of Regents, Health Excellence Fund, Stanford I-Rite Program	
2016 - present	National Institutes of Health, External Scientific Panel, NIH Consortium on Islets Biomimetic, Human Islet Research Network (HIRN)	

SERVICE ACTIVITIES SUMMARY

I am heavily involved in departmental and university service and view it as a deeply important and enjoyable part of my commitment to UCSF. As the chair of the UCSF/UC Berkeley Joint Graduate Group in Bioengineering (JGGB) Program for the past three years, I oversaw more than 170 students and 100 faculty at both campuses. In my current role as the director of the new UCSF/UC Berkeley Master of Translational Medicine Program (MTM), I am involved with the ongoing development of framework, coursework, and budgetary plans for the growing degree program, as well as being heavily involved with the initial implementation processes in 2010. At UCSF, I am the Vice Chair of the Department of Bioengineering and Therapeutic Sciences, the only joint department at UCSF, which grew out of my earlier work as the Vice Chair for Educational Affairs and participation in the Internal Advisory Committee for the department. I take an active role in redefining courses and course tracks for both graduate and professional students, and advise on strategic planning for the department. I have chaired two successful faculty search committees for bioengineering over the past several years and have been a member of at least 4 other search committees across the university.

I currently serve on the executive committee of QB3, where I provide input into the future directions of the institute as well as provide oversight in terms of current activities, funding priorities, and industry outreach. In addition, I work closely with CTSI and the Office of Innovation and Technology to provide input and advice on industry interactions and translational activities at UCSF.

At the university level, I chair the Graduate Council, and serve on the executive committee for the Graduate Education in Medicine (GEMS) program, the PIBS program, the iPQB program, and the MSTP faculty council. I am also currently serving on the Research Advisory Board and the SOP compensation committee. I previously served on the Chancellor's Committee on

Faculty Life, the Academic Planning and Budget Committee, and the Chancellor's Task Force on Compensation. I have also been active in university outreach by serving as a faculty panelist for the UCSF Post-doc Bootcamp Panel, the IRACDA conference, the annual diversity/community day, and the faculty info/welcoming week panel, among others. I am currently advising over 20 students outside of my lab and over the past 4 years, have sat on over 40 qualifying exams and served on either the dissertation committee or as thesis advisor for 50 pre-doctoral students.

Outside of the university, I am active in the scientific community, organizing and chairing many sessions in the past few years at a range of scientific conferences including BMES, IEEE EBMS, and CRS. I am senior editor of Langmuir and associate editor of several other journals in nanotechnology, bioMEMS, and drug delivery. I am a permanent member of the BMBI study section at NIH and serve on the grant review committees of a number of entities including JDRF, the Qatar Government, and the Whitaker Foundation.

UNIVERSITY SERVICE

UC SYSTEM AND MULTI-CAMPUS SERVICE

2007 - 2007	UC Systemwide Bioengineering Conference at UCSF	Organizing Chair
2012 - present	UC Office of the President Portfolio Review Group	Advisory Committee Member
2016 - 2016	UC Systemwide Bioengineering Conference at UCSF	Organizing Chair
2016 - 2016	External reviewer and site visit committee, UCLA Department of Bioengineering	External Reviewer

UCSF CAMPUSWIDE

2006 - 2006	Faculty Search Committee, Chemistry and Chemical Biology (Nanotechnology advising)	Member
2006 - 2006	Faculty Search Committee, Neurophysiology (Joint search with Gladstone Institute)	Member
2006 - 2006	Faculty Welcoming and Orientation Committee	Member
2006 - 2006	Chancellor's Committee on Faculty Life	Member
2006 - present	BioE PhD Admissions Committee	Member
2007 - 2007	CORO Faculty Leadership Collaborative	Member
2007 - 2008	Academic Planning and Budget Committee	Member
2007 - 2008	Faculty Search Committee, Systems Biology position	Member
2007 - 2008	Faculty Search Committee, Nanotechnology position	Member
2008 - 2008	Chancellor's Task Force on Compensation	Member
2008 - present	CORO Compensation Committee	Member
2008 - present	Medical Scientist Training Program Faculty Council	Member

2009 - 2009	"How to raise a family" Panel, Faculty info and welcoming week, Laurel Heights Campus	Panel speaker
2009 - 2009	Postdoc Bootcamp Panel, Mission Bay Campus	Faculty Speaker
2009 - present	PIBS Executive Committee	Member
2010 - present	Faculty Stewardship committee	Member
2010 - present	GEMS executive committee	Member
2011 - present	Graduate Council	Vice Chair
2011 - present	QB3 Executive Committee	Member
2011 - present	Research Advisory Board	Member
2011 - present	UCSF Mid Career Recruitment Committee	Member
2011 - present	UCSF / UP, Institute Planning Committee	Member
2011 - present	iPQB Executive Committee	Member
2011 - present	UCSF T1 Catalyst Review Committee	Member
2011 - present	Diversity Committee	Member
2011 - present	MTM Admissions Committee	Member
2012 - present	UCSF Keck Review Committee	Member
2012 - present	Educational Effort Work Group	Member
2012 - present	Academic Senate Coordinating Committee	Member
2012 - present	Online Education Coordinating Committee	Member
2012 - present	Self Supporting Programs Work Group	Member
2012 - present	UCSF Medical Selection Committee	Member
2012 - present	Coordinating Committee	Member
2013 - present	UCOP Portfolio Review Group Committee	Member
2013 - present	Discovery Fellows Faculty Board	Member
2013 - present	Basic Science Program Directors Committee	Member
2013 - present	Basic Science Chairs Committee	Member
2013 - present	Compensation Plan Advisory Committee	Member
2013 - present	Dawson Award Review Committee	Member
2013 - present	UCSF Medal Members Nominating Committee	Member
2013 - present	UCSF MSTP Council (Medical Scientist Training Program)	Member
2014 - present	Shared Research Facilities Roadmap Steering Committee	Member

2014 - present	UCSF Chancellor's Search Committee	Member
2014 - present	Post Doctorate Task Force	Member
2014 - present	Faculty Advisory Committee for UCSF's IRACDA Scholars in Science	Member
2014 - present	School of Pharmacy Compensation Plan Advisory Committee	Member
2014 - present	Resource Allocation Program (RAP) Digital Health Research Review Committee	Chair
2014 - 2014	Physician Scientist Scholar Program Steering Committee	Member
2015 - present	Differences Matter Executive Advisory Board	Member
2015 - present	IRACDA-STRIDE Program Advisory Committee	Member
2015 - present	UCSF - CTSI Board (Clinical & Translational Science Inst.)	Member
2015 - present	Faculty Support Committee for MIND (Making Informed Decisions)	Member
2015 - present	TRACS Advisory Board	Member
2016 - 2016	Women in Life Sciences (WILS) presentation, January 2016	Speaker
2016 - present	Search Committee for Vice Chancellor for Research	Chair
2016 - present	Executive Committee, Kavli Center for Neuroscience	Member
2016 - present	UCSF Capital Campaign Working Group "Grand Challenges"	Member

SCHOOL OF MEDICINE

2013 - present	UCSF 2.0 Ideation for the Future Committee	Member
2013 - present	School of Medicine Chairs and Directors Committee	Member
2013 - 2013	UCSF Faculty Development Day	Panel Speaker
2013 - 2013	UCSF Community Building Day (Diversity Workshop)	Speaker and Facilitator
2013 - 2013	CTSI Translational Workshop Advisory Group	Member

SCHOOL OF PHARMACY

2012 - present	Compensation Plan Advisory Committee	Dean-appointed Committee Member
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DEPARTMENTAL SERVICE

2005 - 2005	UCSF/UC Berkeley Joint Graduate Group in Bioengineering Retreat	Organizing Chair
2005 - 2005	UCSF Department of Bioengineering and Therapeutic Sciences	Graduate Advisor
2005 - 2007	UCSF Department of Bioengineering and Therapeutic Sciences, Faculty Search Committee	Member; Chair 2006-2007

2005 - 2008	UCSF Department of Bioengineering and Therapeutic Sciences, Executive Committee	Member
2006 - 2006	Joint Graduate Group in Bioengineering (JGGB) Admissions Committee	Member
2006 - present	Joint Graduate Group in Bioengineering (JGGB), Executive Committee	Member; Co-Chair 2008-2012
2008 - present	UCSF Department of Bioengineering and Therapeutic Sciences, Executive Committee	Member
2009 - present	UCSF/UC Berkeley Area Advisor in Tissue engineering and Nanotechnology	Advisor
2009 - present	UCSF Department of Bioengineering and Therapeutic Sciences Internal Advisory Committee and Curriculum Committee	Member
2009 - present	UCSF Department of Bioengineering and Therapeutic Sciences Educational Affairs Committee	Vice Chair
2010 - present	UCSF Master's in Translational Medicine (MTM) Program and Advisory Board	Co-Director and Member
2010 - 2014	UCSF Department of Bioengineering and Therapeutic Sciences	Vice Chair
2014 - present	UCSF Department of Bioengineering and Therapeutic Sciences	Chair

SERVICE AT OTHER UNIVERSITIES

2016 - 2016	External reviewer and site visit committee, University of Illinois at Chicago, Department of Bioengineering	Chicago, IL
2016 - 2016	Invited Workshop Participant: Creating a School of Engineering at The University of San Francisco	San Francisco, CA

COMMUNITY AND PUBLIC SERVICE

1994 - 1996	East Bay Asian Youth Center, Berkeley: Real Alternatives Program, Math and literacy programs	Mentor and tutor for at-risk youth
1995 - present	Narika (Help line for South Asian Women), Berkeley; addressing domestic violence and abuse	Board member and volunteer
1996 - 1998	Science and Education Partnership, San Francisco	Volunteer
1996 - 1998	"Gender Equity in Education;" "Sexism in the Workplace and Academia;" and "Strategies to Improve Science Education" workshop series for high school students and college undergraduates	Workshop designer and facilitator

1996 - 1998	Asian Health Services, Oakland; strategic planning on issues of health access and services to underserved immigrant populations	Community Advisory Committee
1996 - 1999	"So What Does a Biomedical Engineer Really Do?" Career presentations for Chicago area and East Bay high school students and college undergraduates	Workshop leader
1997 - 1997	Gathering Strength Conference: Coming together to end domestic violence in Asian American communities	Volunteer and workshop participant
1997 - 1998	American Diabetes Association	Fundraising team leader and volunteer
1998 - 2002	Indo American Cultural Center, Chicago, IL	Mentor
1999 - 2000	Women Scientists in Academia AWISE Workshop	Workshop leader
1999 - 2000	Women in Engineering: past, present, and future, SWE	Workshop leader
2000 - present	United Way Asian American Outreach	Board member
2006 - present	Science and Education Partnership, San Francisco	Volunteer

TEACHING SUMMARY

As the vice chair for education in the BTS department and chair of the UCSF graduate council, I have been heavily involved in developing and implementing new graduate and professional courses at UCSF. In particular, I have developed a graduate course in tissue engineering which serves both UCSF and UC Berkeley students. In addition, I have organized the weekly bioengineering seminar course for first year students. This is a required course for all incoming bioengineers and highlights the different types of research on the UCSF campus. Additionally, I have worked to overhaul our graduate group bioengineering curriculum, particularly in the area of therapeutic bioengineering and cellular engineering. This entailed creating area tracks and defining core research and teaching areas that students could pursue. I have also worked to improve the drug delivery and therapeutic engineering course for pharmD students. These changes were implemented in the spring of 2010. Finally, I have helped to develop a new course in biomedical device innovation and health care finance.

As chair of the Joint Graduate Program in Bioengineering between UCSF and UC Berkeley for the past three years, I have been involved in changes to the overall graduate curriculum, including courses, rotations, qualifying exams, and dissertation guidelines. I also serve as the PI of our bioengineering training grant, responsible for the support of students in the joint program.

Over the last two years, I have overseen the development and approval of a new master's in Translational Medicine (MTM) program jointly with UCSF and UC Berkeley. I have been involved in all aspects of the program, from designing the curriculum and advising students, to gaining UC approval and managing fundraising. This took significant time and effort but has resulted in an innovative new program that builds on the strengths of UCSF and Berkeley.

I am also working with other programs such as iPQB and the HHMI training program to see how bioengineering courses can be better integrated. I am a member of the GEMS executive committee, providing input to the program as well as evaluation of student projects. Finally, I am also a member of the PSPG, CCB, and biophysics graduate groups, participating in journal clubs, thesis committees, and student rotations/advising.

FORMAL TEACHING

Not UCSF	Academic Yr	Course No. & Title	Teaching Contribution	School	Class Size
	2006 - 2007	Bioe 242: Methods in Tissue engineering	Organizer and course lecturer (all but 2 classes)		12
	2006 - 2007	Biological Aspects of Bioengineering Seminar	Co-organizer		35
	2006 - 2007	Advanced Drug Delivery	Lecturer, 1 lecture		
	2007 - 2008	Bioe 242: Methods in Tissue engineering	Organizer and course lecturer, 10 lectures		11
	2007 - 2008	Biological Aspects of Bioengineering Seminar	Course organizer		25
	2007 - 2008	Biomedical Micro/Nanotechnology	Organizer and lecturer		
	2007 - 2007	The Business of Nanotechnology (UC Berkeley)	Lecturer, 1 lecture		30
	2008 - 2009	Bioe 242: Methods in Tissue engineering	Organizer and course lecturer, 10 lectures		10
	2008 - 2009	Biological Aspects of Bioengineering Seminar	Course organizer		25
	2009 - 2010	Biological Aspects of Bioengineering Seminar	Course organizer		35
	2009 - 2010	Bioe 242: Methods in Tissue engineering	Organizer and course lecturer, 10 lectures		8
	2010 - 2010	BPS113: Drug Delivery	Course director and lecturer (5 lectures)		125
	2011 - 2011	BPS 113: Drug Delivery	Course Director and lecturer (3 lectures)		125

Not UCSF	Academic Yr	Course No. & Title	Teaching Contribution	School	Class Size
	2012 - 2012	Bioe 242: Tissue Engineering: From Concept to Translation	Course director		15
	2012 - 2012	BPS 113: Drug Delivery Systems	Course Director and lecturer (4 lectures)		125
	2013 - 2013	Bioe 242: Tissue Engineering: From Concept to Translation	Course director		20
	2013 - 2013	BPS 113 Drug Delivery Systems	Course director and lecturer (2 lectures)		125
	2014 - 2014	Bioe 242: Tissue Engineering: From Concept to Translation	Course director		20
	2014 - 2014	BPS 113: Drug Delivery Systems	Course director and lecturer (2 lectures)		125
	-	Boston University: Quantitative Physiology for Biomedical Engineers; Biomedical/Biomechanical Microsystems; Biomaterials and Tissue Engineering I and II			

Not UCSF	Academic Yr	Course No. & Title	Teaching Contribution	School	Class Size
	-	University of Illinois, Chicago: Principles of Cell and Tissue Engineering; Advanced Methods in Cell and Tissue Engineering; Cell and Tissue Engineering Laboratory Course; Micro/Nanotechnology in Biology and Medicine; Biomedical Microdevices; Materials in Bioengineering; Introduction to Bioengineering; Biotransport			
	-	Microtechnology in Drug Delivery Short Course			
	-	Applications and Commercialization of BioMEMS			
	-	Micro and Nanotechnology for Tissue Engineering			

INFORMAL TEACHING

- 1994 - 1994 Santa Barbara City Summer Science Program: Taught a six week science program for middle and high school underrepresented minority and low income middle school girls
- 1995 - 1997 Undergraduate Research Advisor, University of California, Berkeley: Served as a supervisor and mentor for undergraduates participating in research projects; taught research methodologies and appropriate laboratory techniques
- 1996 - 1998 The Women's Triad Project: Established science clubs for middle school girls to promote gender equity and achievement in math and science; developed and led hands-on interactive science exploratory activities for students in classroom settings

- 1997 - 1997 Teaching Colloquim, University of California, Berkeley: Participated in a course designed to enhance university teaching skills through workshops/discussions on teaching pedagogy, learning styles, lecturing skills, and classroom assessment techniques
- 1997 - 1998 City Science Summer Institute, San Francisco: Worked in partnership with teachers to develop innovative approaches to teach science and design a science-based curriculum for elementary school students
- 1997 - 1998 Graduate Teaching Assistant, Department of Materials Science, University of California, Berkeley, Biomaterials and Biomedical Microdevices
- 2000 - 2000 New Century Scholars Workshop, Stanford, CA: Participated in week long workshops on active and problem based learning in the classroom, mentoring strategies for undergraduate and graduate students, and strategies for work-life balance/tenure track careers
- 2000 - 2000 Whitaker Education Summit: Workshop Leader and white paper co-author, BioMicro and Nanotechnology
- 2001 - 2001 Bioengineering Summer Camp: Helped organize a week long, hands-on summer program for public school children interested in engineering careers
- 2004 - 2004 Personal vs. Professional Research (research, teaching, and service): Whitaker Foundation Meeting
- 2005 - 2005 Women Scientists in Power: National Association for the Advancement of Women in Science, Harvard University
- 2005 - 2005 Whitaker Educational Summit: Workshop Leader and white paper co-author, Drug Delivery
- 2009 - 2010 TechBridge, Outreach Program Participant
- 2010 - present UCSF/SFSU Ms/PhD Program, Faculty Mentor
- 2012 - 2012 UCSF Osher Mini Medical School Course: "UCSF Scientists Outline What's to Come"

PREDOCTORAL STUDENTS SUPERVISED OR MENTORED

Dates	Name	Program or School	Mentor Type	Role	Current Position
-				THESIS SUPERVISOR	
- 2000	Jennifer Deutsch	M.S. in Bioengineering, Microtextured Matrices for Cell Mechanobiological Studies		Thesis supervisor	Instructor in Biotechnology, Community College

Dates	Name	Program or School	Mentor Type	Role	Current Position
- 2000	Dina Giannoulis	M.S. in Bioengineering, Surface Characterization of Thin Films for Implantable Silicon Based Microdevices		Thesis supervisor	Principle Engineer, Baxter Healthcare
- 2001	Wei Tan	M.S. in Bioengineering, Evaluation of Biopolymer Matrices and their application in Microfluidic Patterning		Thesis supervisor	Assistant Professor, University of Colorado
- 2001	Aamer Ahmed	M.S. in Bioengineering, Conjugation of lectins to silicon platforms for drug delivery systems		Thesis supervisor	Attorney, McDermott, Will, & Emery (Washington, DC)
- 2001	Erich Haupt	M.S. in Bioengineering, Aspects that Govern the Differentiation of Non-Human Primate Marrow Stromal Cells		Thesis supervisor	Owner, Innovative Medical Solutions

Dates	Name	Program or School	Mentor Type	Role	Current Position
- 2001	Chris Bonner	M.S. in Bioengineering, Fabrication of Silicon Microparticles Oral Drug Delivery		Thesis supervisor	Advanced Product Development, Sun Power Corporation
- 2002	Dan Davis	M.S. in Bioengineering, Immobilization and characterization of RDG to silicon surfaces for enhanced adhesion		Thesis supervisor	Manager, Global Regulatory Affairs, Baxter Healthcare
- 2002	Uroosa Saifuddin	M.S. in Bioengineering		Thesis supervisor	
- 2002	Toby Gwak	M.S. in Bioengineering, Microfabricated Devices for Cell Force Measurements		Thesis supervisor	Detroit Medical Center
- 2002	Michael Lubeley	M.S. in Bioengineering, Microfabricated PMMA Devices for Targeted Delivery		Thesis supervisor	

Dates	Name	Program or School	Mentor Type	Role	Current Position
- 2002	Sadhana Sharma	Ph.D. Bioengineering, Characterization of PEG thin films for Silicon bio-microsystems		Thesis supervisor	Research Assistant Professor, Ohio State University
- 2002	Wei Tan	Ph.D. Bioengineering, Microfluidic patterning of three dimensional biomimetic structures for tissue engineering		Thesis supervisor	Assistant Professor, University of Colorado
- 2002	Ketul Popat	Ph.D. Bioengineering, Vapor Deposition of PEG films in Microfluidic Structures		Thesis supervisor	Assistant Professor, Colorado State University
- 2003	Lara Leoni	Ph.D. Bioengineering, Biocompatibility and Biotransport of Nanoporous Biocapsules		Thesis supervisor	Biomedical Engineer, University of Chicago

Dates	Name	Program or School	Mentor Type	Role	Current Position
- 2003	Kelly Smith	M.S. in Manufacturing, Development of a High Throughput Microfabricated Bioreactor for Cellular Analysis		Thesis supervisor	
- 2004	Elissa Beekman	M.S. Bioengineering		Thesis supervisor	Physical Therapist
- 2004	James Norman	M.S. Bioengineering, Control of cellular organization in 3D using microtextured tissue scaffolds		Thesis supervisor	
- 2004	Simon Su	M.S. Biomedical Engineering, Bioadhesive porous silicon microdevices for controlled delivery		Thesis supervisor	
- 2004	Patrick Rourke	M.S. Biomedical Engineering, Microtextured Biodegradable Thin Films for Vascular Tissue Engineering		Thesis supervisor	Production Manager, Pfizer, Spain

Dates	Name	Program or School	Mentor Type	Role	Current Position
- 2004	Erin Leary Swan	M.S. Biomedical Engineering, Fabrication and Evaluation of Nanoporous Alumina for Enhanced Osteoblast Growth		Thesis supervisor	PhD Candidate, Massachusetts Institute of Technology
- 2005	Sarah Tao	Ph.D. Bioengineering, Bioadhesive Microdevices for Oral Drug Delivery		Thesis supervisor	Manager of New Technologies, CooperVision
- 2006	Sumona Sarkar	M.S. Biomedical engineering, Fabrication of a layered micro-structured tissue construct for vascular TE		Thesis supervisor	Post-doctoral fellow at NIST
- 2007	Kristen LaFlamme	Ph.D. Bioengineering, Nanoporous Alumina biocapsules for pancreatic beta cell encapsulation		Thesis supervisor	Senior Medical Writer at Complete Healthcare Communications

Dates	Name	Program or School	Mentor Type	Role	Current Position
- 2007	James Norman	Ph.D. Bioengineering, Control of cellular organization in 3D using microtextured tissue scaffolds		Thesis supervisor	Director of Research Programs, Warner Babcock Institute for Green Chemistry
- 2007	Carlos Lopez	Ph.D. Bioengineering, Characterization of Nanoporous Biocapsule for Neurosecretory applications		Thesis supervisor	Research Assistant Professor, Boston University
2007 - 2012	Perla Ayala	PhD Bioengineering		Thesis Committee Member	Postdoctoral Fellow, Harvard
2008 - 2008	Barrett Nehilla	PhD Bioengineering, Multifunctional Nanoparticles for Imaging and Drug Delivery		Thesis Committee Member	Scientist at Nexgeni
2008 - 2013	David Tran	PhD in Bioengineering		Thesis Committee Member	
2008 - 2013	Haroldo Silva	PhD in Bioengineering		Thesis Committee Member	OncoSENS Research Scientist at SENS Foundation

Dates	Name	Program or School	Mentor Type	Role	Current Position
2008 - 2012	Danielle Tsou	PhD in Bioengineering		Thesis Committee Member	
2009 - 2012	Gautham Venugopalan	PhD in Bioengineering		Thesis Committee Member	Foreign Affairs Officer at the U.S. Department of State
2009 - 2012	Colin Walsh	PhD in Bioengineering		Thesis Committee Member	Lead Scientist and Technical Liaison at Precision NanoSystems, Inc.
2009 - 2013	Jeffrey Henry	PhD in Bioengineering		Thesis Committee Member	Life Science Strategy Consultant at Simon-Kucher & Partners
2009 - 2013	Lane Weaver	PhD in Bioengineering		Thesis Committee Member	Life Science Specialist Consultant at L.E.K. Consulting
2010 - 2010	Lily Peng	PhD Bioengineering, Vascular Response to Nanotopography		Thesis Committee Member	CMO, Nano Precision Medical
2010 - 2010	Mark Steedman	PhD Bioengineering		Thesis Committee Member	Postdoctoral Researcher at Imperial College London

Dates	Name	Program or School	Mentor Type	Role	Current Position
2010 - 2011	Adam Mendelsohn	PhD Bioengineering, Development of a Bioartificial Pancreas Using Size-Controlled Insulin-Secreting Cell Clusters		Thesis Committee Member	Founder and CEO at Nano Precision Medical
2010 - 2010	Kayte Fischer	PhD Bioengineering		Thesis Committee Member	Chief Technical Officer at Nano Precision Medical
2010 - 2013	Eric Jabart	PhD in Bioengineering		Thesis Committee Member	Post-Doctoral Fellow at UC Berkeley
2010 - 2014	Jennifer Wade	PhD in Bioengineering		Thesis supervisor	Scouting and Partnering at Sanofi
2010 - present	Richard Henrikson	PhD in Bioengineering		Thesis Committee Member	
2010 - 2013	Lalitha Mathusubramaniam	PhD in Biomedical/Medical Engineering		Thesis supervisor	Postdoctoral Researcher at UCSF
2011 - 2013	Daniel Cohen	PhD in Bioengineering		Thesis Committee Member	Co-Founder at Puffin Biotech & at Bootstrap Engineering Consulting
2011 - 2014	Timothy Downing	PhD in Bioengineering		Thesis Committee Member	Postdoctoral Fellow at Harvard University

Dates	Name	Program or School	Mentor Type	Role	Current Position
2011 - 2014	Katie Megley	PhD in Bioengineering		Thesis Committee Member	Researcher at UC Berkeley
2011 - present	Win Pin Ng	PhD in Bioengineering		Thesis Committee Member	
2011 - present	Sophie Wong	PhD in Bioengineering		Thesis Committee Member	
2011 - present	Torin Yeager	PhD in Bioengineering		Thesis Committee Member	
2011 - 2014	James Pinney	PhD in Bioengineering		Thesis supervisor	MSTP Program, UCSF
2012 - 2014	Aditya Kohli	PhD in Bioengineering		Thesis Committee Member	Associate at NanoDimension
2012 - present	Kevin Lance	PhD in Bioengineering		Thesis supervisor	
-				ROTATION SUPERVISOR	
-	Lamar Petty	Chemistry		Rotation supervisor	
-	Marc Pena	Pharmaceutical Sciences		Rotation supervisor	
-	Yushan Kim	Bioengineering		Rotation supervisor	
-	Timothy Downing	Bioengineering		Rotation supervisor	
-	Sisi Chen	Bioengineering		Rotation supervisor	
-	Jason Park	Bioengineering		Rotation supervisor	
-	Cheryl Tajon	Chemistry		Rotation supervisor	
-	Anuj Patel	Bioengineering		Rotation supervisor	

Dates	Name	Program or School	Mentor Type	Role	Current Position
-	Yousef Khalifa	Fellow, Ophthalmology		Rotation supervisor	
-	Wiktor Stopka	Bioengineering		Rotation supervisor	
-	Mark Sena	Bioengineering		Rotation supervisor	
-	Frances Yang	Dentistry		Rotation supervisor	
2008 - 2013	Lalitha Muthsubramanian	Bioengineering		Rotation supervisor	Research Scientist, Berkeley Lights
2009 - 2014	Jennifer Wade	Bioengineering		Rotation supervisor	Scouting and Partnering, Sanofi
2010 - 2014	Crystal Nyitray	Current student, Chemistry, Designed Insulin Secreting Beta Cell Clusters for Type 1 Diabetes Cell Based Therapeutics		Rotation supervisor	
2010 - 2014	James Pinney	Bioengineering		Rotation supervisor	MSTP Program, UCSF
2010 - present	Laura Walsh	Current student, Medical Scientist Training Program		Rotation supervisor	
2010 - present	Phin Peng Lee	Current student, Bioengineering		Rotation supervisor	

Dates	Name	Program or School	Mentor Type	Role	Current Position
2010 - present	Kevin Lance	Current student, Bioengineering, Polymer Thin Film Devices for Controlled Drug Delivery		Rotation supervisor	
2010 - present	Alec Cerchiari	Current student, Bioengineering, Revealing the microenvironmental cues governing the self-organization of the bilayered human mammary gland		Rotation supervisor	
2010 - 2013	Kimberly Kam	Current student, Bioengineering, Nanostructured Surfaces for Drug Delivery and Anti-Fibrotic Applications		Rotation supervisor	
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-				GRADUATE ADVISOR	
2003 - 2009	Virginia Platt	PhD		Graduate Advisor	
2004 - 2010	Randall Raphael Janairo	PhD		Graduate Advisor	
2005 - 2009	Kathryn Hammond	PhD		Graduate Advisor	

Dates	Name	Program or School	Mentor Type	Role	Current Position
2005 - 2010	Miki Sode	PhD		Graduate Advisor	
2005 - 2011	Sharon Chao	PhD		Graduate Advisor	
2006 - 2011	Karl Saldanha	PhD		Graduate Advisor	
2006 - 2010	Emily Perttu	PhD		Graduate Advisor	
2006 - 2010	Aliza Apple	PhD		Graduate Advisor	
2008 - 2012	Debkishore Mitra	PhD		Graduate Advisor	
2003 - 2007	David Tran	PhD		Graduate Advisor	
2006 - 2010	Samuel Tia	PhD		Graduate Advisor	
2007 - 2011	Michael Motion	PhD		Graduate Advisor	
2007 - 2007	Colin Walsh	PhD		Graduate Advisor	
2008 - 2010	Aaron Daub	PhD		Graduate Advisor	
2009 - 2010	Sean McFarland	PhD		Graduate Advisor	
2009 - 2011	Michael Lee	PhD		Graduate Advisor	
2010 - 2012	Matthew Rubashkin	PhD		Graduate Advisor	
2010 - 2012	Aditya Kohli	PhD		Graduate Advisor	
2011 - 2013	Simon Lee	PhD		Graduate Advisor	
2012 - 2013	Long Le	PhD		Graduate Advisor	
2012 - 2013	Parsa Nafisi	PhD		Graduate Advisor	
2012 - 2013	Jung Ming Lin	PhD		Graduate Advisor	
2014 - present	Katelyn Cabral	Current Student		Graduate Advisor	
2014 - present	Allison Drain	Current Student		Graduate Advisor	
2014 - present	Adam Rao	Current Student		Graduate Advisor	
2015 - present	Jason Chiu	Haas MBA Current Student		Project Advisor	
-				QUALIFYING EXAM COMMITTEE	

Dates	Name	Program or School	Mentor Type	Role	Current Position
1999 - 2006	Derek Wong	PhD		Qualifying Exam Committee Member	
2002 - 2006	Victor Chubokov	PhD		Qualifying Exam Committee Member	
2002 - 2006	Anne Kim	PhD		Qualifying Exam Committee Member	
2003 - 2006	Peng Liu	PhD		Qualifying Exam Committee Member	
2003 - 2006	David Tran	PhD		Qualifying Exam Committee Member	
2003 - 2007	Raymond Schmidt	PhD		Qualifying Exam Committee Member	
2004 - 2006	Junyu Mai	PhD		Qualifying Exam Committee Member	
2004 - 2007	Justyn Jaworski	PhD		Qualifying Exam Committee Member	
2004 - 2007	Randall Raphael Janairo	PhD		Qualifying Exam Committee Member	
2004 - 2008	Kevin Cheng	PhD		Qualifying Exam Committee Member	
2005 - 2008	Samantha Cronier	PhD		Qualifying Exam Committee Member	
2005 - 2007	Miki Sode	PhD		Qualifying Exam Committee Member	
2005 - 2008	Douglas Brownfield	PhD		Qualifying Exam Committee Member	
2005 - 2008	Theresa Ulrich	PhD		Qualifying Exam Committee Member	
2005 - 2009	Eunice Lee	PhD		Qualifying Exam Committee Member	
2005 - 2010	Akwasi Apori	PhD		Qualifying Exam Committee Member	
2006 - 2011	Karl Saldanha	PhD		Qualifying Exam Committee Member	

Dates	Name	Program or School	Mentor Type	Role	Current Position
2006 - 2010	Emily Perttu	PhD		Qualifying Exam Committee Member	
2006 - 2010	Aliza Apple			Qualifying Exam Committee Member	
2006 - 2011	Siyu Chen	PhD		Qualifying Exam Committee Member	
2006 - 2011	Anuj Patel	PhD		Qualifying Exam Committee Member	
2006 - 2011	Jeffrey Henry	PhD		Qualifying Exam Committee Member	
2006 - 2010	Eric Jabart	PhD		Qualifying Exam Committee Member	
2006 - 2010	Lane Weaver	PhD		Qualifying Exam Committee Member	
2007 - 2012	Joseph Patrick Michael Motion	PhD		Qualifying Exam Committee Member	
2007 - 2012	Gautham Venugopalan	PhD		Qualifying Exam Committee Member	
2007 - 2009	Jassica Allen (Orr)	PhD		Qualifying Exam Committee Member	
2007 - 2009	Gautham Venugopalan	PhD		Qualifying Exam Committee Member	
2007 - 2009	Colin Walsh	PhD		Qualifying Exam Committee Member	
2008 - present	Molly Darragh	PhD		Qualifying Exam Committee Member	
2008 - present	Carol Chen	PhD		Qualifying Exam Committee Member	
2008 - 2011	Timothy Downing	PhD		Qualifying Exam Committee Member	
2008 - 2009	Jason Park	PhD		Qualifying Exam Committee Member	
2009 - 2011	Cheryl Tajon	PhD		Qualifying Exam Committee Member	
2009 - 2011	Jennifer Lui	PhD		Qualifying Exam Committee Member	

Dates	Name	Program or School	Mentor Type	Role	Current Position
2009 - 2011	Rachel Gerver	PhD		Qualifying Exam Committee Member	
2009 - 2010	Ivan Grubisic	PhD		Qualifying Exam Committee Member	
2009 - 2011	Katie Megley	PhD		Qualifying Exam Committee Member	
2009 - 2011	Win Pin Ng	PhD		Qualifying Exam Committee Member	
2009 - 2011	Sophie Wong	PhD		Qualifying Exam Committee Member	
2009 - 2011	Torin Yeager	PhD		Qualifying Exam Committee Member	
2010 - 2011	Paul Cheng	PhD		Qualifying Exam Committee Member	
2010 - 2011	Michael Todhunter	PhD		Qualifying Exam Committee Member	
2010 - 2014	Zohora Iqbal	PhD		Qualifying Exam Committee Member	
2010 - 2012	Aditya Kohli	PhD		Qualifying Exam Committee Member	
2010 - 2012	Matthew Rubashkin	PhD		Qualifying Exam Committee Member	
2011 - 2013	Kunwoo Lee	PhD		Qualifying Exam Committee Member	
2011 - 2013	Simon Lee	PhD		Qualifying Exam Committee Member	
2011 - 2013	Ann Ouyang	PhD		Qualifying Exam Committee Member	
2011 - 2014	Anusuya Ramasubramanian	PhD		Qualifying Exam Committee Member	
2011 - 2014	Shang Song	PhD		Qualifying Exam Committee Member	
2011 - 2012	Mozziyar Etemadi	PhD		Qualifying Exam Committee Member	

Dates	Name	Program or School	Mentor Type	Role	Current Position
2012 - present	Luke Cassereau	PhD		Qualifying Exam Committee Member	
2012 - present	Sylvia Natividad	PhD		Qualifying Exam Committee Member	

POSTDOCTORAL FELLOWS AND RESIDENTS MENTORED

Dates	Name	Fellow	Mentor Role	Faculty Role	Current Position
2002 - 2003	Jenny Jiang, PhD	Post-doctoral		Research supervision	Senior Engineer, Texas Instruments
2003 - 2004	Tania Vu, PhD	Post-doctoral Fellow		Research Supervision	Assistant Professor, Bioengineering, Oregon Health Sciences University
2005 - 2005	Sarah Tao, PhD	Research Physiology		Research Supervision	Senior Engineer, Draper Labs
2005 - 2005	Ketul Popat, PhD	Research Associate		Research Supervision	Assistant Professor, Colorado State University
2006 - 2009	Kristy Ainslie, PhD	Post-doctoral		Research Supervision	Assistant Professor, Ohio State University
2006 - 2008	Rahul Thakar, PhD	Post-doctoral		Research Supervision	Associate Program Officer, California Institute of Regenerative Medicine

Dates	Name	Fellow	Mentor Role	Faculty Role	Current Position
2009 - 2009	Rachel Lowe, PhD	Post-doctoral		Research Supervision	Postdoctoral Scholar, Max Planck Institute for Biophysical Chemistry
2008 - 2011	Dan Bernards, PhD	Post-doctoral		Research Supervision	Research Specialist, UCSF
2009 - 2015	Miquella Chavez, PhD	IRACDA Post-doctoral fellow		Research Supervision	
2010 - 2010	Robert Tucker, PhD	Post-doctoral		Research Supervision	Catheter Engineer, Hansen Medical
2011 - 2013	Natalie Ciaccio, PhD	Post-doctoral		Research supervision	Scientist, BioMarin
2011 - 2013	Vuk Uskokovic, PhD	Post-doctoral		Research supervision	Assistant Professor at University of Illinois at Chicago
2011 - 2015	Hari Chirra, PhD	Post-doctoral		Research supervision	
2011 - 2015	Harald Nuhn, PhD	Post-doctoral		Research supervision	Sr. research Associate, Alfred Mann Institute, USC
2011 - 2013	Julien Schweicher	Post-doctoral		Research supervision	Postdoctoral Researcher at Université libre de Bruxelles
2013 - present	Jessica Allen	Post-Doctoral		Research Supervision	
2013 - present	Jubin Ryu	Post-Doctoral		Research Supervision	

FACULTY MENTORING

Dates	Name	Position while Mentored	Mentor Type	Mentoring Role	Current Position
-	Shuvo Roy	Assistant Professor			Professor
-	Adam Abate	Assistant Professor			Assistant Professor
-	Zev Garnter	Assistant Professor			Assistant Professor

RESEARCH AND CREATIVE ACTIVITIES SUMMARY

Studies in Laboratory of Therapeutic Micro/Nanotechnology, directed by Dr. Desai, focuses on the design, fabrication, and use of advanced micro and nano biosystems for a) cellular integration and tissue engineering; b) biomimetic architectures for functional biomaterials, and c) therapeutic drug targeting and delivery. We are fundamentally interested in how alterations in micro and nanostructure can be used to modulate cell-material interactions.

Tissue Engineering and Biomimetic micro/nanostructured materials

The last decade has seen the dramatic development of biomedical technologies for therapeutic applications ranging from biohybrid vascular grafts to bioadhesive drug delivery systems. Increasingly it is realized that the key to developing functional in vivo platforms is the development of interfaces that are biocompatible, biofunctional, and biomimetic. Initial events at the surface include the orientated adsorption of molecules from the surrounding fluid, and creating a conditioned interface to which the cell responds. The gross morphology, as well as the micro/nano-topography and chemistry of the surface determine which molecules can adsorb and how cells will attach, align, and differentiate. Studies are being conducted to investigate the role of physical cues (structure and mechanics) in regulating biochemical pathways, biological adhesion phenomena, cytoskeletal deformation and active cellular motility. Motivating these fundamental studies is the development of novel materials that mimic the interfacial properties of natural biomaterials and novel biomaterials as substrata for control of cell adhesion, orientation, and motility. For example, materials with patterned surface modifications are used to investigate the effect of their physical, chemical, and mechanical properties on interactions with living cells. Ongoing projects include nanostructured interfaces for vascular pro-healing stents, microtextured films for corneal and retinal cell delivery, and injectable microrods for cardiac therapy.

Micro/Nanoscale Drug Delivery

The Desai group has done pioneering work using nanofabrication techniques, including e-beam, sacrificial lithography, and anodization techniques, to create cellular encapsulation devices with nanoscale pores for applications in diabetes and Parkinson's disease. With monodisperse pore sizes as small as 10 nanometers, these membranes offer additional competitive advantages in their reproducibility, and their ability to be integrated with controlled biochemical surface modification protocols, and as the 'ground floor' for further incorporation of micro electromechanical elements. Due to the ability to control pore size down to several nanometers, these interfaces can be used to selectively screen out immune components or provide sustained small molecule drug release. Future biocapsule research will concentrate on design and material optimization - pore length, density, and geometric configurations of nanoporous interfaces.

The lab has also worked to create nanostructured microdevices for oral drug delivery. The microdevices are fabricated through multilevel photolithography and RIE of silicon oxides, polymethyl-methacrylate and hydrogel polymers. The integration of micro/nanofabrication techniques with biochemistry will usher in a new class of drug delivery devices capable of physiological delivery profiles. Microfabricated drug delivery devices offer the ability to achieve chemical specificity, asymmetric delivery, and multiple components on a single platform. For instance, in the area of oral delivery, we are developing reservoir containing microparticles with appropriate surface chemistry that can be used to delivery macromolecules and peptides selectively to the GI tract. This concept can be extended to the delivery of an array of other therapies, for instance, hormones, growth factors, pain medications, and chemotherapeutic agents. "Smart" methods of delivery drug to the body – based on micro/nanotechnology – could reduce side effects, make better use of existing drugs, and open the door to entire classes of new treatments.

Another focus area in drug delivery is ocular delivery. We have pioneered the concept of thin film nanoporous devices that can provide zero order release over months. This platform technology can be used to deliver both proteins and small molecules to constrained spaces in the body. We are actively working on therapeutic applications related to age related macular degeneration and glaucoma. Related to this are projects that examine how structure can be used to modulate tight junction barriers, across a range of epithelial tissues.

RESEARCH AWARDS - CURRENT

1.	T32 GM008155 (Training Grant)	PI/Program Director	Desai (PI)
	NIH	07/01/1985	06/30/2021
	UCSF/UCB Joint Graduate Group in Bioengineering	\$ 658,140 direct/yr 1	

This training grant provides support for students in the joint bioengineering graduate program in the area of quantitative biomedical sciences

2.	Clinical and Translational Science Institute (CTSI)	PI	Desai (PI)
	Nano-engineered, Non-Thrombotic Vascular Grafts	03/01/2015	02/28/2017
		\$ 100,000 direct/yr 1	

Proof of concept studies for fabrication of nanostructured vascular graft.

3.	Alfred E. Mann Foundation	PI	Desai (PI)
	Vascular Nanostructures and Topologies	01/12/2011	12/31/2017
		\$ 45,760 (Desai) direct/yr 1	

The purpose of this study is to evaluate the biological response of multiple titania nanotube stent designs in a healthy porcine coronary arterial model.

4.	PI		Desai (PI)
	Regeneron Pharmaceuticals, Inc.	03/01/2014	02/29/2016
	Feasability Program for Sustained Release of VEGF Trap from Nanoporous Thin Film Device	\$ 221,518 direct/yr 1	
	This grant focuses on developing a sustained drug delivery device for 4 months of delivery of VEGF trap to the retina. The specific aims include assessment of optimal pore size for zero order delivery and formulation for protein stability.		
5.	R01HL119508 Co-I		Conte (PI)
	NIH	08/21/2013	05/31/2017
	Specialized Lipid Mediators and Mechanisms of Resolution in Vascular Injury	\$ 250,000 direct/yr 1	
	Specialized Lipid Mediators and Mechanisms of Resolution in Vascular Injury		
6.	HHSN268201400005C Co-PI		Conte (PI)
	NIH	11/15/2013	11/14/2016
	Vascular Interventions/Innovations and Therapeutic Advances (VITA) Pro-Resolving Vascular Devices	\$ 186,806 direct/yr 1	
	The project focuses on the creation of pro-resolving vascular devices for combating restenosis.		
7.	PI		Desai (PI)
	Santen, Inc.	03/24/2014	09/23/2016
	Micro and nano-structured biopolymer thin film devices for small molecule drug delivery.	\$ 251,368 direct/yr 1	
	In conjunction with Santen, Inc., studies will be carried out for prototype devices incorporating three proprietary small molecule compounds, in a two-stage program first with in vitro studies, and subsequently in in vivo studies with successful device prototypes.		
8.	PI		Desai (PI)
	RTI International	01/01/2014	09/30/2016
	Annual Program Statement for Microbicide Research, Development	\$ 132,715 direct/yr 1	
	The goal is to develop a thin-film polymer device to subcutaneously deliver an anti-retroviral for long-acting HIV pre-exposure prophylaxis.		
9.	PI		Desai (PI)
	Abbvie	08/15/2014	11/30/2016
	Creating and Characterizing Biocompatible Nanorods for Transdermal Delivery	\$ 117,988 direct/yr 1	

The goal of this project is to determine whether nanoscale rods can increase transepidermal delivery in vitro and in vivo.

10. 1R01EB018842	PI		Desai (PI)
NIH		09/18/2014	05/31/2018
Mechanisms of Nanostructure-enhanced Transepithelial Drug Delivery		\$ 261,659 direct/yr 1	
The goal of this project is to investigate the effect of nanostructured surfaces on the modulation of tight junction permeability and transport of key therapeutic molecules in vitro.			
11. 3-SRA-2014-254- Q-R	PI		Desai (PI)
JDRF (Juvenile Diabetes Research Foundation)		08/01/2014	07/31/2017
Nanoporous Injectable Thin Film Devices for Islet Encapsulation		\$ 227,273 direct/yr 1	
The goal of this project is to develop an implant for encapsulation of human embryonic stem cell (hESC)-derived insulin-producing cells to restore normal glucose metabolism in diabetic patients.			
12. 1U01FD004979-01	Investigator		Giacomini (PI)
NIH		04/15/2014	03/31/2017
UCSF-Stanford Center of Excellence in Regulatory Science and Innovation		\$ 758,023 direct/yr 1	
I will consult on CERSI educational programs, specifically a proposed Master Program in Regulatory Sciences			
13. 0101028	Investigator		Desai (PI)
Zambon Research Venture		06/04/2015	05/31/2017
Z Cube Microdevices		\$ 123,059 direct/yr 1	
The goal of this project is to study the efficacy of microdevice technology on the oral bioavailability of topetecan and insulin.			
14. SRA-2015-37- Q-R	Investigator		Roy (PI)
JDRF Encapsulation Consortium		08/01/2015	07/31/2018
Developing and Testing Novel Encapsulation Technologies-Intervascular Capsule for Islet Transplantation in Type 1 Diabetic Patients		\$ 350000 direct/yr 1	
15. W81XWH-15-1-0261	Investigator		Gruenert (PI)
DOD-US Army Medical Research Acquisition		08/01/2015	01/31/2017

Derivation of Parathyroid Gland Cells and their Progenitors from Induced Pluripotent Stem

The goal of this work is directed at developing a 3-D bioactive matrix that will promote functional parathyroid gland "organogenesis" ex vivo.

16. U01EB021214	Investigator		Fissell/Roy (PI)
NIH		09/30/2015	06/30/2019
Building an Implantable Artificial Kidney		\$ 994,506 direct/yr 1	

This project investigates the conditions that optimize the tubule cells to resist phenotypic erosion, and will also focus on the design of the mechanically-robust biocompatible device for ultrafiltration.

17.	Co-PI		Desai/Fong (PI)
PBBR UCSF		02/01/2016	01/30/2017
Oncolytic virus inspired nanoparticle based intratumoral immunotherapy for prostate cancer		\$ 96,000 direct/yr 1	

By locally delivering poly(lactic-co-glycolic acid) (PLGA) nanoparticles encapsulating tumor associated antigens and key viral-related immune adjuvants, we hope to dissect mechanisms in inducing systemic anti-tumor immunity seen in oncolytic virotherapy and facilitate future rational design of immunotherapies to induce anti-tumor immunity.

18. A127786	PI		Desai (PI)
Decibel Therapeutics, Inc.		07/11/2016	07/11/2017
Local Delivery of Therapeutic Agents for Hearing Conditions		\$ 12,618 direct/yr 1	

To develop a local drug delivery strategy for the ear using thin film microdevices.

RESEARCH AWARDS - PAST

1. Sandler Family Foundation	PI		
Nanoporous Biocapsules for Insulin Delivery		2006-09-01	2009-08-01
QB3 Award		\$ 180,000 direct/yr 1	\$ 50,000 total

2. NIH/NEI	co-PI		
Nanoscale Neuromodulating Platforms			
\$260,000/yr 1-4		\$ 65,000 direct/yr 1	\$ 260,000 total

3.	R01 EB002687	PI		
	Bioadhesive Porous Particles for Oral Drug Delivery		2005-03-30	2009-03-01
	\$675,000 / yr 3		\$ 225,000 direct/yr 1	\$ 675,000 total
4.	National Science Foundation	co PI		
	NSEC: Center for Advanced Nanoscale Polymers for Biomedical Devices			
	UC Discovery Grant (PI)		\$ 200,000 direct/yr 1	\$ 9/1/06-8/30/08 total
5.	Nanowire platforms for Tissue Engineering and Drug Delivery			
	\$104,000/ yr 1		\$104,000/ yr 1	\$104,000/ yr 1
	\$208,000/ yr 1-2		\$ 208,000 direct/yr 1	\$ 7/1/00-3/1/06 total
	R01 HL64956 (co-PI) (BU)			
6.	NIH	no cost to 2008		
	\$1,755,792/yr 1-5		\$350,000/yr 1	\$350,000/yr 1
	Nanosys		\$ 1,755,792 direct/yr 1	\$ 2007 total
7.	Gift in nanotechnology			
	\$20,000/ yr 1			
	Sandler Family Foundation (PI)		\$20,000/ yr 1	\$20,000/ yr 1
	Research in Tissue Engineering and Drug Delivery		\$ 9/06-8/08 direct/yr 1	\$ 200,000 total
8.	Sandler Family Foundation	PI		
	Therapeutic Micro/Nanotechnology Core Facility		2006-10-01	2008-09-01
	Quantitative Institute for Biomedical Sciences (PI)		\$ 200,000 direct/yr 1	\$ 2006 total

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9. Therapeutic Micro/Nanotechnology Core Facility		\$60,000/ yr1	
UCSF Academic Senate (PI)		\$60,000/ yr1	\$60,000/ yr1
Acquisition of an AFM		\$ 2006 direct/yr 1	\$ 40,000 total
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10. REAC	PI		
Nanoporous Architectures for Bone Biotemplating		2005-03-01	2006-02-01
NIH R21 EB00570-01(PI)		\$ 25,000 direct/yr 1	\$ 9/30/02-8/31/05 total
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11. Nanoporous Inorganic Biocapsules for Bioseparation		\$75,000 direct/yr 1	
Cellular Immunoisolation, and 2354-BU-NSF-0033 (co-PI)		direct/yr 1 \$ 150,000 direct/yr 1	direct/yr 1 \$ 08/01/02-07/31/03 total
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12. NSF \$42,510/ yr 1			
NER: Magnetically Activated Nanoporous Structures		\$42,510/ yr 1	\$42,510/ yr 1
R21 RR14345-02 (co-PI)		\$ 100,000 direct/yr 1	\$ 5/16/03-2/28/05 total
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13. NIH/NCRR \$48,342/yr 1			
Silicon Biocapsules for Neurosecretory Xenograft Delivery		\$48,342/yr 1	\$48,342/yr 1
R01 EB00108-01 (co-PI)		\$ 100,000 direct/yr 1	\$ 4/1/02-3/31/06 total
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14. NIH\$80,000/ yr 1			
Optical Imaging of Dynamic 3-D Engineered Tissues		\$80,000/ yr 1	\$80,000/ yr 1

R03 EY13693 (co-PI)	\$ 320,000 direct/yr 1	\$ 4/1/02-3/31/04 total
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15. NIH/NEI \$99,999/yr 1		
Development of Nanoscale Neuromodulating Platforms	\$99,999/yr 1	\$99,999/yr 1
JOHNSON AND JOHNSON, INC (PI)	\$ 200,000 direct/yr 1	\$ 1/1/03-12/31/06 total
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16. Microfabricated Cellular Habits		
\$75,000/yr 1		
\$250,000/yr 1-4	\$75,000/yr 1	\$75,000/yr 1
NASA (co-PI)	\$ 250,000 direct/yr 1	\$ 10/1/03-9/30/06 total
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17. Cellular mechanotransduction in tunable 3-D microengineered tissues		
\$100,000/yr 1		
400,000/years 1-4	\$100,000/yr 1	\$100,000/yr 1
Research in drug delivery	\$ 400,000 direct/yr 1	\$ 1/1/05-12/31/05 total
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18. ALZA		
\$40,000/yr 1		
Nanosys	\$40,000/yr 1	\$40,000/yr 1
Research in Nanotechnology	\$ 9/1/04-8/30/05 direct/yr 1	\$ 30,000 total
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19. Center for Medicine in technology		
1/1/04-1/1/06		
Bioadhesive Drug Delivery		
\$70,000/yr 1-2		
BES-0242443 CAREER (PI)		
NSF	\$ (ext to 8/31/04) direct/yr 1	\$ 200,000 total

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20. Biomimetic Interfaces for Implantable BioMEMS			
Whitaker Foundation (PI)		Biomimetic Interfaces for Implantable BioMEMS	Biomimetic Interfaces for Implantable BioMEMS
Micromachined Biocapsules for the Immunoisolation of Pancreatic Islets		\$ 2000 direct/yr 1	\$ 209, 040/yr 1-4 total
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21. NSF EECS	PI		
Foundations of Microfabricated Membranes for Bioseparation		1999-07-01	2002-06-01
\$307,409/ yr 1-3		\$ 115,625 direct/yr 1	\$ 307,409 total
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22. Initiative in Biotechnology	IRIB) (co-PI		
Nanoscale Neuromodulating Platforms		2001	04
IMEDD, Inc.		\$ 450,000 direct/yr 1	\$ 2000 total
<hr/>			
23. Microfabricated Bioadhesive Microparticles			
\$92,000/ yr 1			
IMEDD, Inc.		\$92,000/ yr 1	\$92,000/ yr 1
Oral MEDD Delivery System		\$ 1999 direct/yr 1	\$ 13,662 total
<hr/>			
24. Campus Research Board, UIC	PI		
Microtextured Membrane for Cardiac Myocyte Mechanobiology		1999	1999
Boehringer-Mannheim - Roche Diagnostics (PI)		\$ 14,600 direct/yr 1	\$ 1999 total
<hr/>			
25. Micromachined Albumin Retention Membranes			
\$24,000/ yr 1			
UIC Campus Research Board (PI)		\$24,000/ yr 1	\$24,000/ yr 1

Three-dimensional Cellular Micropatterning for Tissue Engineering		\$ 2001 direct/yr 1	\$ 15,000 total
<hr/>			
26. UIC Campus Research Board PI			
Microtextured Membrane for Cardiac Myocyte Mechanobiology,			
PUBLICATIONS		\$ 14,600 direct/yr 1	\$ PUBLICATIONS total
<hr/>			
27. Drug Eluting Coatings for Cervical Rings		\$56,000/yr 1	
NIH R01 EB008049-01 (co-PI)		\$56,000/yr 1	\$56,000/yr 1
Miniaturized Bioartificial Kidney		\$ 01/01/08-12/31/10 direct/yr 1	\$ 150,000 total
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28. \$450,000/yr1-3			
UC Discovery Grant (PI)		\$450,000/yr1	3
Nanostructured Films for Retinal Drug Delivery		\$ 11/01/08-11/30/10 direct/yr 1	\$ 100,000 total
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29. Rogers Foundation	PI		
Microdevices for Chemotherapeutic Delivery		unrestricted \$ 230,000 direct/yr 1	unrestricted
<hr/>			
30. \$300,000/yr 1-2			
QB3 Philanthropic Fund		\$300,000/yr 1	2
Nanoporous Titania for Interferon Delivery		\$ 6/1/09 - does not expire direct/yr 1	\$ 90,000 total
<hr/>			
31.	PI		Desai (PI)
Genentech, Inc		11/01/2010	10/31/2012

Understanding Drug Transport Across Posterior Ocular Tissue Using Surface-Modified Polymer Microdevices \$ 97,087 direct/yr 1

This research seeks to study the effect of microdevice geometry and surface properties on drug transport across ocular tissues.

32.	PI		Desai (PI)
	Kimberly Clarke Corporation	01/01/2012	12/31/2012
	In vitro transport and Wound Healing Studies, Mechanism, Immune Response, and Lymphatic Uptake	\$ 210,353 direct/yr 1	
	This project seeks to understand the role of nanostructure on tight junction remodeling and immunogenicity.		
33.	PI		
	Rogers/Bridging the Gap Award (QB3)	01/01/2011	01/31/2013
	Nanostructural Biopolymer Films for Retinal Drug Delivery	\$ 96,000 direct/yr 1	
34.	PI		
	Ranin Center	12/01/2011	11/30/2012
		\$ 25,000 direct/yr 1	
35.	Co-PI		Goldspink (Medical College of Wisconsin) (PI)
	NIH	09/01/2010	05/31/2014
	Cardiac Regeneration through Growth Factor Eluting Microd Scaffolds	\$ 60,000 (Desai only) direct/yr 1	
	The goal of this research is to develop microrod MGF therapy that supports the regeneration of cardiac muscle to regain cardiac function in the failing human heart.		
36.	Co-PI		Lim (UCSF) (PI)
	California Institute for Regenerative Medicine (CIRM)	05/01/2011	04/30/2014
	Development and Preclinical Testing of New Devices for Cell Transplantation to the Brain	\$ 399,196 direct/yr 1	

The major goals of this project are to design, fabricate, refine and validate a novel device for delivery of human neural precursor cells derived from embryonic stem cells to a large target volume using a single cranial penetration, to demonstrate safety and efficacy of the new cell delivery device in a large animal model and to compile preclinical data for inclusion of the device in future investigational New Drug (IND) applications.

37. R21 DE022634-01	Co-PI		Desai (PI)
NIH		04/01/2012	03/31/2014
Mimicking the Dentin-Pulp Complex In-vitro		\$ 150,000 direct/yr 1	
This projects attempts to create the dentin and dental pulp stem cells.			-pul
38.	PI		Desai (PI)
Z-Cube		11/15/2010	06/30/2014
Microdevices for Colon Targeting and Delivery		\$ 179,202 direct/yr 1	
This project seeks to develop a microdevice that targets colonic epithelium and delivers small molecule drugs in a localized manner			
39.	Co-I		Desai (PI)
Clinical and Translational Science Institute		07/01/2013	06/30/2014
TiO2 Nanotube Functionalized Artificial Grafts		\$ 50,000 direct/yr 1	
The research proposed in this application seeks to translate technology developed in Tejal's lab related to pro-healing nanostructured TiO2 coatings from the lab to in vivo proof of concept.			
40.	PI		Desai (PI)
Wallace H. Coulter Foundation		09/01/2011	08/31/2014
Nanostructured Devices for Drug Delivery		\$ 153,833 direct/yr 1	
Our overall project goal is preclinical device and business development of a novel drug delivery platform, suitable for long term protein delivery.			
41.	Co-PI		Ryu (PI)
National Psoriasis Foundation		06/15/2014	06/15/2015
Creating Nanostructure Films for Transdermal Delivery of Biologics in Psoriasis		\$ 75,000 direct/yr 1	
42. R01EY021574-01A1	PI		

	NIH	09/01/2011	08/31/2015
	Nanoporous Films for Ocular Drug Delivery	\$ 245,000 direct/yr 1	
43.	PI		
	Orthofix	10/24/2012	12/31/2014
	Effects of Pulse electromagnetic Stimulation and Microrods on the Intervertebral Disc	\$ 16,000 direct/yr 1	
44.	CIRM RB4-05785 PI		
	California Institute for Regenerative Medicine	11/01/2012	10/31/2015
	3D Modeling of Retina Using Biomaterials for Understanding Disease Pathogenesis	\$ 26,939 direct/yr 1	
45.	Co_I		
	PBBR	07/15/2013	10/14/2014
	Program for Breakthrough Biomedical Research	\$ 97,344 direct/yr 1	
46.	PI		
	Resource Allocation Program	08/01/2013	01/31/2015
	Role of Collagen Nanotopography in Corneal Tissue Engineering	\$ 50,000 direct/yr 1	
47.	PI		
	Kimberley-Clark	01/01/2014	12/31/2014
	Develop relationship between nanostructures and various drug properties, perform study of microneedle device kinetics and transport mechanisms	\$ 63,694 direct/yr 1	
48.	Faculty director/PI		
	Andy Grove and the Grove Foundation	06/01/2010	present

Masters in Translational Medicine Program \$ 300,000 direct/yr
1

This grant supports the MTM program in which students learn to apply translational research and engineering approaches to solve fundamental problems in healthcare delivery.

49. Co-I
Pritker Family Foundation Research Award 11/01/2012 10/31/2016
Nanostructured Thin-Film Biopolymers for Sustained Delivery of Intraocular Therapeutics \$ 75,000 total
This grant seeks to further develop delivery of drug devices for glaucoma and retinal diseases.

50. R01EB016414-01 PI Desai (PI)
Prof USA/NIH Transformative 12/13/2012 06/30/2016
Implantable Multi-Analyte Sensors for the Continuous Monitoring of Body Chemistry \$ 18,927 direct/yr 1
The goal of the proposed research is to demonstrate a multi-analyte sensor capable of providing continuous data over at least 3 months.

51. PI
Kimberly-Clark 01/01/2015 12/31/2015
Transport Studies - Examine Microneedle Device Kinetics and Transport in Transdermal Model \$ 69,236 direct/yr 1

52. PI
Transcend Medical Inc. 08/21/2015 01/21/2016
Evaluation of Nano- and Micro-scale Surfaces \$ 16,000 direct/yr 1
Examining the effect of surface modification on the biocompatibility of ocular stents.

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2. **Desai, TA.** "Cell Microtechnology: Applications of Microfabrication in Cell Analysis, Cell-Based Therapeutics, and Tissue Engineering," Biomedical Microdevices; 2(2):87-88, 1999. **(EDITORIAL)**
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5. Papat, KC, Sharma, S, **Desai, TA.** "Engineered silicon surfaces for biomimetic interfaces," Business Briefing: Medical Device Manufacturing and Technology, World Markets Research Center, London, June 2002. **(BRIEFING)**
6. **Desai, TA.** Quantitative Analysis of Complex 3-D Tissues, IEEE Reviews in Biomedical Engineering, 2009. **(EDITORIAL)**

SIGNIFICANT PUBLICATIONS

1. **Fischer KE, Aleman BJ, Tao SL, Hugh Daniels R, Li EM, Bunger MD, Nagaraj G, Singh P, Zettl A, Desai TA. Biomimetic nanowire coatings for next generation adhesive drug delivery systems. Nano Lett 2009;9(2):716-20.**

This paper was one of the first to show that one can create bioadhesive particles for mucosal drug delivery by controlling the surface nanostructure. The results demonstrated that discrete nanostructure that mimic the size scale of microvilli can form strong interactions with epithelial cells and result in strong bioadhesive forces even under significant shear forces. The work was cited in Nature Medicine as one of the "5 big ideas for nanotechnology." It was the basis for our current and pending NIH grant in this area as well as an issued patent (owned jointly with Nanosys). Nanoletters is one of the leading journals for nanotechnology with an impact factor of 13.2. Desai is the senior author and the lead author was a graduate student in the BioE program.

2. **Bernards DA, Desai DA. Nanotemplating of biodegradable polymer membranes for constant rate drug delivery" Advanced Materials, 2010; 22: 2358-2362.**

This paper describes a process to create well-controlled nanoporous polymeric membranes that can be used for drug delivery applications. The translation of nanofabrication methods from inorganic to organic substrates has been a much sought after goal in nanoscience. In this paper, the ability to create these nanostructures in biodegradable materials and use them for sustained therapeutic release is demonstrated. The capability to control morphology and in terms, kinetic behavior, has applications in therapeutics as well as diagnostics. The technology was developed in the Desai lab and UCSF filed a PCT application based on this technology. Advanced Materials is the leading journal in material science with an impact factor of 13.9. Desai is the senior author and Bernards is post-doc in the lab.

3. **Peng L, Barczak AJ, Barbeau RA, Xiao Y, LaTempa TJ, Grimes CA, Desai TA. Whole genome expression analysis reveals differential effects of TiO₂ nanotubes on vascular cells. Nano Lett 2010;10(1):143-8.**

This paper looks at the effect of nanotopography on whole genome expression and teases out the differential effects of nanostructure on the behavior of vascular cells. This is of great clinical interest in terms of designing vascular grafts and stent architectures. The paper shows that by designing the correct structure, one can create a surface that promotes endothelialization while preventing the proliferation of smooth muscle cells, without the use of anti-proliferative drugs used in current drug eluting stent technology. This paper (and related ones) were the basis of a grant from the Al Mann foundation, a UCSF patent, and a start-up company focusing on nanotubular interfaces for medical devices. Nanoletters is one of the leading journals for nanotechnology with an impact factor of 13.2. Desai is the senior author and the lead author was a graduate student in the BioE program.

4. **Fischer, K.E., Nagaraj, G., Daniels, R.H., Li, E., Cowles, V E., Miller, J.L., Bunger, M., Desai, T.A. Hierarchical Nanoengineered Surfaces for Enhanced Cytoadhesion and Drug Delivery, Biomaterials. 2011 May;32(13):3499-506.**

This work built on our ability to design microscale particle with controlled nanostructure to show that this technology could be translated to a therapeutic delivery system in vivo. The study showed that such particles could outperform non-nanostructured particles in dog models in terms of bioadhesion and stability during drug delivery. We were awarded the Controlled Release Society Awards for best papers in the oral and pharmaceutical sciences category based on this work at the controlled release society meeting. Selection of this work was based on: Innovation, quality of research and technical content, potential commercial application, potential impact on the drug delivery industry, and potential to solve an industry-wide drug delivery challenge. Biomaterials is the leading journal of the field with an impact factor of 7.4. Desai is the senior author and the lead author was a graduate student in the BioE program.

5. **Ayala P, Desai TA. Integrin α 3 blockade enhances microtopographical down-regulation of α -smooth muscle actin: role of microtopography in ECM regulation. Integr Biol (Camb). 2011 Jul; 3(7): 733-41.**

Development of functional engineered matrices for regenerative therapies can benefit from an understanding of how physical cues at the microscale affect cell behavior. In this work, we use microfabricated systems to study how stiffness and microscale topographical cues in the form of "micropegs" affect extracellular matrix synthesis. These findings demonstrate that regulation of extracellular matrix production by cells on a synthetic substrate can be guided via physical cues at the microscale, and add to the body of knowledge on the role of integrin-mediated mechanotransduction. The work has broad implications in the design of synthetic biomaterials to diminish fibrosis and wound healing. Integrative Biology is a well regarded journal focusing on quantitative biosciences from nano to macro. Desai is the senior author and the lead author, Ayala, was a graduate student in the BioE program.

PATENTS ISSUED OR PENDING

1. Micromachined Nanoporous Membranes for Implantable Biosensors, US PATENT 6,405,066 B1
2. Multilayered Microcultures, US PATENT US 2006/0141617 A1

3. Microfabrication of membranes containing projections and grooves for the growth of cells, US PATENT 6,942,873
4. Microstructures in three dimensional gel suspensions for the growth of cells, US PATENT, US 2007/0249044 A1
5. Medical Device applications for nanostructured surfaces, US PATENT, 7,803,574
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7. Nanostructured Surface Coated Medical Implants and Methods of Using the Same US PATENT, US 2012/0114734 A1
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9. Temporal release of growth factors from 3D micro rod scaffolds for tissue regeneration, US PATENT 2010/0158979 A1
10. Bioactive agent delivery devices and methods of making and using the same, US PATENT APPLICATION 61/653,119

OTHER CREATIVE ACTIVITIES

1. **SAB & CONSULTING**
2. Consultant, Mercury Diagnostics, Palo Alto, CA, 1997-98
3. Scientific Advisory Board, Founding Member, & Consultant, iMEDD, Inc., Columbus, OH, 1999-present
4. Scientific Advisory Board & Consultant, Microislets Inc., San Diego, CA 2002- 6
5. Scientific Advisory Board & Consultant, Sentec, University Park, PA, 2002-present
6. Scientific Advisory Board, Nanosys, 2004-2006
7. Consultant, ALZA, 2004-2006
8. Consultant, Medinvent, 2004-2006
9. Nanotech Advisory Board, Boston Scientific, 2004-
10. Scientific Advisory Board, Structus, 2007-
11. Consultant, Kimberly Clarke, 2009-
12. Scientific Advisory Board, Drug Delivery, Genentech, 2010-
13. External Advisory Board, Department of Nanomedicine at the Houston Methodist Research Institute, 2014-
14. Scientific Advisory Board, Rainin Foundation 2015-
15. Advisory Board, Centers of Cancer Nanotechnology Excellence (CCNE), Stanford University 2016-
16. **NATIONAL PROFESSIONAL MEDIA FEATURES**

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28. "Women in Nanotechnology" Exhibit at Lawrence Hall of Science, Berkeley, CA, 2003.
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39. "Drug Delivery, Nanoscale," Innovations Volume 3, Issue 4, May 2009.
40. IBM/iPlanet.com, Innovation Segment, September 2009
41. "Nanotechnology's Big Impact," ChemMatters, 2009.
42. BUSINESS PLAN COMPETITIONS (by lab students based on lab technology)

43. UC Berkeley Nano Opportunity Challenge, First Place, 2008
44. UC Berkeley Business Plan Competition, First Place, 2008
45. Jungle MBA Business Plan Competition, Finalist, 2008
46. Draper Fisher Jurvetson Business Plan Competition, 2008
47. Venture Labs Challenge, Winner (1 of 4), 2008
48. ASME iShow, Second Place Winner, 2008
49. Intel/Berkeley Technology Entrepreneurship Challenge (IBTEC), People's Choice Award, 2008
50. Hong Kong University of Science and Technology Business Plan Competition, First Place, 2009
51. Rice University Business Plan Competition, 2009
52. **CASE STUDIES FOR EDUCATION**
53. NSF National Center for Case Study Teaching in Science
"Bioengineering the Pancreas: Developing Novel Regenerative Therapies to Address Type 1 Diabetes"

ADDITIONAL RELEVANT INFORMATION

UCSF/BERKELEY BIOENGINEERING DEPARTMENTAL SERVICE (graduate tenure):

Material Science Department Laboratory Safety Officer, 1995-98

Bioengineering Annual Retreat, Co-chair, Tissue Engineering and Cancer: Molecular Level to Therapy, 1996-97

Graduate Student Representative, UCSF and UCB, 1996-97

Mentor for SUPERB program (undergraduate engineering research program for underrepresented minorities), 1996-97

Bioengineering Curricular Development Committee, 1997

Strategic Planning Committee, UCSF, 1997

Executive Committee, Bioengineering Graduate Group, 1997-98

Vice President, Bioengineering Association of Students, 1997-98