

JOYCE Y. WONG

Professor

Departments of Biomedical Engineering and Materials Science & Engineering
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RESEARCH FOCUS AREAS: Biomaterials to detect and treat disease. Current focus: elucidating fundamental molecular, cellular, and colloidal/interfacial processes and applying to pediatric vascular tissue engineering, theranostics, materiomics, and developing *in vitro* engineered model systems to study disease progression. Specific applications: detecting and treating cardiovascular disease (e.g. atherosclerosis, vulnerable plaques, building vascularized tissues) and cancer metastasis. We also apply our basic studies for enhanced oil recovery with magnetic resonance nanoreporters.

EDUCATION

University of California, Santa Barbara, CA

Postdoctoral Fellow, Biophysics and Surface Science (1994-1998)

Massachusetts Institute of Technology, Cambridge, MA

Ph.D., Program in Polymer Science and Technology in Dept. of Materials Science and Engineering, 1994

Massachusetts Institute of Technology, Cambridge, MA

S.B., Materials Science and Engineering, 1988

PROFESSIONAL APPOINTMENTS

Beth Israel Deaconess Medical Center, Boston, MA

Surgical observership, Surgery (2011-present)

Children's Hospital, Boston, MA

Surgical observership, Cardiology (2011)

Boston University, Boston, MA

Director, Provost's Initiative to Advance Women in STEM at BU (2013-)

Professor, Departments of Biomedical Engineering & Materials Science & Engineering (2013-)

Co-Director, Affinity Research Collaborative in Nanotheranostics (2012-)

Faculty, Division of Graduate Medical Sciences, BU School of Medicine (2010-)

Member, Whitaker Cardiovascular Institute (2009-)

Member, Center for Regenerative Medicine (2009 -)

Associate Chair, Graduate Studies, Department of Biomedical Engineering (2006-2010)

Associate Director, Center for Nanoscience and Nanobiotechnology (2006-2008)

Associate Professor, Department of Biomedical Engineering (2006-2013)

Member, Center for Nanoscience and Nanobiotechnology, Boston University (2005-)

Faculty, Biomolecular Pharmacology Program, BU School of Medicine (1998-)

Faculty, Molecular Biology, Cell Biology & Biochemistry Program (1998-)

Clare Boothe Luce Assistant Professor, Department of Biomedical Engineering (1998-2006)

University of California, Santa Barbara, CA

NIH NRSA Postdoctoral Fellowship, Department of Chemical Engineering, (1994-1998)

Universität Mainz, Mainz, GERMANY

Visiting Scholar, Institut für Organische Chemie, (1995)

Massachusetts Institute of Technology, Cambridge, MA

Research Assistant, Department of Chemical Engineering, (1988-1994)

AWARDS AND HONORS

Elected to *Biomedical Engineering Society Class of 2013 Fellows* (2013)
Collaborator of the Year Award (2012) in Basic Physical Sciences and Engineering, Boston University, Dept. of Medicine Evans Center for Interdisciplinary Biomedical Research
Chair, subcommittee on Cellular and Molecular Engineering to evaluate nominations for the AIMBE COF (American Institute for Medical and Biological Engineering College of Fellows) (2012)
Kern Faculty Fellow at Boston University College of Engineering (2012 – present)
Beckman Foundation: Beckman Scholars Advisory Panel (2012)
Elected to Board of Directors, Biomedical Engineering Society (2011-2014)
Hartwell Individual Biomedical Research Award (2009)
Boston University, College of Engineering Distinguished Faculty Fellow (2009-2014)
Elected Fellow of American Institute for Medical and Biological Engineering (2009)
Elected Vice-Chair of Gordon Research Conference in Biomaterials and Tissue Engineering (2009; Chair in 2011)
Explorers, Entrepreneurs, Exemplars, Educators: Massachusetts Biotechnology Leaders Through the Bachrach Lens (2007)
Japan-America Frontiers in Engineering Award (2004)
Dupont Young Professor Award (2004)
Outstanding Researcher: 1st National Academies Keck Futures Initiative Conference (2003)
National Academy of Science Frontiers in Engineering Award (2001)
Boston University Provost Innovation Award (2001)
National Science Foundation CAREER Award (2000)
Engineering Foundation Conference Fellowship (1998)
National Institutes of Health, NRSA Postdoctoral Fellowship (1996-1998)
National Science Foundation Travel Fellowship (1994)
Materials Research Society (MRS) Graduate Student Award Winner (1993)
American Institute of Chemical Engineers, Materials Science Division, poster, 2nd prize (1993)
Sigma Xi Scientific Honor Society (1990)
IBM Graduate Research Fellowship (1988)
Tau Beta Pi Engineering Honors Society (1986)
Uniroyal National Merit Scholar (1984-1988)
General Motors Women's Club Scholarship (1984)

AWARDS TO WONG LAB MEMBERS

Lutchen Fellow, Shivem Shah, 2013
NSF Graduate Fellowship, Carl Beigie, 2013-2016
Best Paper Award, IEEE Workshop on the Applications of Computer Vision (WACV) 2013
Gurari, D., S-K Kim, E. Yang, B. Isenberg, T. Pham, A. Purwada, P. Solski, M. Walker, J.Y. Wong, and M. Betke (2013) "SAGE: A Principled Approach and Implementation Empowering Quick and Reliable Quantitative Analysis of Segmentation Quality,"
NIH NRSA Postdoctoral Award, Elaine Lee, 2013-2015
Outstanding Senior Project Award in BME, Angela Xie and Andrew Schiff, 2012
Beckman Scholar, Alexander Valentine, 2012-2014
Joanna M. Nicolay Melanoma Foundation Research Scholar Award, Chentian Zhang, 2012
Lutchen Fellow, Alberto Purwada, 2012
Beckman Scholar, Angela Xie, 2010 – 2012

American Heart Association (AHA) Founders Affiliate Predoctoral Fellowship Competitive Renewal, Corin Williams, 2009-2010
Beckman Scholar, Meredith Duffy, 2009 – 2011
AHA Founders Affiliate Predoctoral Fellowship, Corin Williams, 2007-2009
Tissue Engineering Regenerative Medicine International Society (TERMIS) Travel Award, Corin Williams, 2008
NSF East Asia and Pacific Summer Institutes (EAPSI) Award, Corin Williams, 2007
Outstanding Senior Project Award in BME, Jason Nami, 2007
NSF Graduate Fellowship, Michelle Kinahan, 2006-2009
Beckman Scholar, Roy Arjoon, 2005-2007
Academic Keys Future Faculty Award, February, Jennie Leach, Ph.D., 2005
American Heart Association Postdoctoral Fellowship, Jennie Leach, Ph.D., 2004-2005
Boston University, BME, Graduate Student Paper Award, Kelley Burrige, 2004
Top Poster Award, Division of Colloid and Surface Science, American Chemical Society Spring Meeting, Mark Hennessy, 2001

PROFESSIONAL ACTIVITIES

Advisory Boards:

- *External Advisory Board Member, University of Delaware NSF IGERT in Systems Biology for Cells in Engineered Environments* (2012 –)
- *Member, Scientific Advisory Board, NCCR (Swiss National Center of Competence in Research) proposal on "Nanobiomedicine"* (2013 -)

Professional Societies:

BIOMEDICAL ENGINEERING SOCIETY:

- *Awards Committee Member* (2013 – present)
- *Diversity Committee Member* (2012 – present)
- *Board of Directors* (2011 – 2014)

AMERICAN INSTITUTE FOR MEDICAL AND BIOLOGICAL ENGINEERING:

- *Subcommittee Member, Cellular and Molecular Engineering* to evaluate nominations for the AIMBE COF (American Institute for Medical and Biological Engineering College of Fellows) (2012, 2013)

MATERIALS RESEARCH SOCIETY:

- *Chair, Judging Committee for Graduate Student Awards, Materials Research Society Fall Meeting, 2001, Boston, MA*
- *Judge, Graduate Student Awards, Materials Research Society Fall Meeting, 2000, Boston MA*

SOCIETY OF WOMEN ENGINEERS:

- *Panelist, "Effective Negotiation and Communication," Boston University, April 2010, Boston, MA*

AVS SCIENCE & TECHNOLOGY:

- *Technical Committee, Biomaterials Interfaces (BI) Division AVS Science & Technology, 2005*
- *Executive Committee, BI Division AVS Science & Technology* (2004-2006)

Journal Activities:

GUEST CO-EDITOR:

- **Materials Research Society Bulletin**, Technical Theme “Materials for biological modulation, sensing and imaging” (2014)

JOURNAL EDITORIAL BOARDS:

- **Editorial Board**, *Regenerative Therapy (Elsevier)* (2014 -)
Official English-language journal of the Japanese Society for Regenerative Medicine (Launch: 2015)
Regenerative Therapy intends to be a multidisciplinary journal that publishes original articles and reviews on basic research, clinical translation, industrial development, and regulatory issues focusing on stem-cell biology, tissue engineering, and regenerative medicine.
- **Advisory Board**, *Biomaterials Science (Royal Society of Chemistry)* (2014 –)
New journal: Bringing together the molecular and mesoscopic interactions of biomaterials and their potential applications.
- **Editorial Board**, *Biomatter (Landes Bioscience)* (2010 –)
- **Editorial Board**, *Cellular and Molecular Bioengineering (Springer; BMES)* (2007 –)
- **Co-Editor**, *Biointerphases (American Institute of Physics Publishing)* (2005 –)
- **Editorial Advisory Board**, *Polymer Reviews (Taylor Francis; impact factor 7.794)* (2004 –)

JOURNAL REVIEWER:

Scientific Reports (Nature); PNAS; Biophysical Journal; Journal of the American Chemical Society; Advanced Materials; Journal of Chemical Physics; Journal of Cell Science; Journal of Applied Physiology; Nanoletters; Langmuir; Biomaterials; Biomacromolecules; Journal of Biomedical Materials Research; Tissue Engineering; Microvascular Research, Journal of Pharmaceutical Science; Cell Biochemistry and Biophysics; Annals of Biomedical Engineering; Acta Biomaterialia; Journal of Biomechanics

Conference Organization:

NATIONAL ACADEMY OF ENGINEERING (NAE):

- **Organizing Committee and Session Co-Chair, Materiomics**, *National Academy of Engineering German-American Frontiers of Engineering, April 2013, Irvine CA*

GORDON RESEARCH CONFERENCES (GRC):

- **Chair, Biomaterials and Tissue Engineering**, *Gordon Research Conferences, 2011, Plymouth, NH*
- **Vice-Chair. Biomaterials: Biocompatibility/Tissue Engineering**, *Gordon Research Conferences, 2009, Plymouth, NH*
- **Session Organizer, Poster Rapid Fire Session, Biointerface Science**, *Gordon Research Conferences, October 2006, Les Diablerets, SWITZERLAND*

BIOMEDICAL ENGINEERING SOCIETY (BMES):

- **Track Co-Chair, Translational Biomedical Engineering,** *Biomedical Engineering Society Annual Meeting, October 2014, San Antonio TX*
- **Session Chair, Thrombosis and Hemostasis,** *Biomedical Engineering Society Annual Meeting, September 2013, Seattle WA*
- **Abstract Reviewer,** *Biomedical Engineering Society Annual Meeting, September 2013, Seattle WA*
- **Abstract Reviewer,** *Biomedical Engineering Society Annual Meeting, October 2012, Atlanta GA*
- **Track Chair, Cardiovascular Engineering,** *Biomedical Engineering Society Annual Fall Meeting, October 2011, Hartford, CT*
- **Session Co-Chair, Smart Materials,** *Biomedical Engineering Society Annual Fall Meeting, September 2007, Los Angeles, CA*
- **Session Co-Chair, Mechanobiology of the Cell-Substrate Interface.** *Biomedical Engineering Society Annual Fall Meeting, October 2006, Chicago, IL*
- **Session Chair, Cell Mechanics** *IEEE Engineering in Medicine and Biology Society – Biomedical Engineering Society Joint Meeting (BMES-EMBS), October 2002, Houston, TX*
- **Session Chair, Biosurface Engineering: Sensing and Biomicry** *IEEE Engineering in Medicine and Biology Society – Biomedical Engineering Society Joint Meeting (BMES-EMBS), October 2002, Houston, TX*
- **Session Chair, Molecular and Cellular Bioengineering,** *Biomedical Engineering Society Annual Fall Meeting October 2001, Durham, NC*
- **Symposium Chair, Molecular Basis of Cell Adhesion,** *Biomedical Engineering Society Annual Fall Meeting, (Joint with North American Society of Biorheology) October 1999, Atlanta, GA*

AMERICAN CHEMICAL SOCIETY (ACS):

- **Symposium Co-Chair (with David Weitz and Ramanathan Nagarajan)** *90th ACS Colloid and Surface Science Symposium (CSSS), June 5-8, 2016, Boston MA*
- **Session Chair, 5th International Symposium on Biorelated Polymers,** *American Chemical Society, Division of Polymer Chemistry, August 2002, Boston, MA*
- **Symposium Co-Organizer, Inter- and Intra-molecular Forces in Biological Systems** *American Chemical Society Spring Meeting, Spring 2001, San Diego, CA*

MATERIALS RESEARCH SOCIETY (MRS):

- **Symposium Organizer, Biomaterials for Tissue Engineering.** *Materials Research Society Annual Meeting, December 2003, Boston, MA*

SOCIETY FOR BIOMATERIALS (SFB):

- **Organizer, Session: Frontiers of In-Situ Biomaterials Imaging,** *SFB, April 2012, New Orleans, LA*
- **Abstract Review.** *SFB, April 2011, Orlando FL*

EUROPEAN SOCIETY FOR BIOMATERIALS (ESB):

- **International Advisory Board, 24th European Conference on Biomaterials, 2011,** *Dublin, IRELAND*

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME):

- **Track Chair, Nanoengineering for Regenerative Medicine and Tissue Engineering**
ASME 2013 Global Congress on NanoEngineering for Medicine and Biology (NEMB2013), Feb. 4-6, 2013, Boston, MA

IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY (IEEE EMBS):

- **Session Chair, Cell-Matrix Interactions within Tumors and Normal Tissue (Minisymposium)** *The 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2011, Boston MA*
- **Session Chair, Cell Mechanics** *IEEE Engineering in Medicine and Biology Society – Biomedical Engineering Society Joint Meeting (BMES-EMBS), October 2002, Houston, TX*
- **Session Chair, Biosurface Engineering: Sensing and Biomimicry** *IEEE Engineering in Medicine and Biology Society – Biomedical Engineering Society Joint Meeting (BMES-EMBS), October 2002, Houston, TX*

NORTH AMERICAN VASCULAR BIOLOGY ORGANIZATION (NAVBO):

- **Program Committee, Workshop “Vascular Matrix Biology and Bioengineering III,”**
October 2011, Cape Cod MA

METHODS IN BIOENGINEERING CONFERENCE:

- **Program Committee and Session Chair, Methods in Bioengineering Conference, July 2011, Boston MA**

MASSACHUSETTS INSTITUTE OF TECHNOLOGY:

- **Judge, MIT Polymer Poster Contest, March 2011, Cambridge MA**

8TH WORLD CONGRESS OF CHEMICAL ENGINEERING:

- **Scientific Organizing Committee. Surface Forces, Interfacial Phenomena and Colloids** *August 2009, Montreal, CANADA*

MEDI2006:

- **Symposium Organizer, Advances in Biomaterials** *MEDI2006, October 2005, Hartford, CT*

BIOSURF:

- **Poster Judge, BIOSURF V, September 2003, Zurich, SWITZERLAND**

AVS SCIENCE & TECHNOLOGY:

- **Session Chair.** *AVS Science & Technology Fall Meeting, 2005*
- **Track Chair, Biomembranes on a Chip,** *AVS Science & Technology Annual Fall Meeting, November 2004, Anaheim, CA*

Grant/Proposal Reviewer:

NATIONAL INSTITUTES OF HEALTH:

- *NIH Study Section SBIR/STTR, SBIBY12: Cardiovascular and Surgical Devices*
 - *February 2014, November 2013, June 2013*
- *NIH Director's New Innovator Award Program*
 - *Spring 2014, Spring 2013*
- *NIH Biomaterials and Biointerfaces (BMBI) Study Section*
 - *Adhoc, 2012, 2010*
 - *Member 2005-2006*
- *NIH Pioneer Awards, January 2012*
- *NIH Gene and Drug Delivery Study Section, October 2011, adhoc*
- *NIH Nanotechnology, special study section, 2009*

NATIONAL SCIENCE FOUNDATION:

- *Panelist*
 - *Fall 2013, Fall 2012*
- *Workshop Invited Participant; Contributed to [2012 NSF Workshop Report](#)*
 - **Cell-Material Interactions Discussion Working Group Member: NSF Biomaterials Workshop: Important Areas for Future Investment (David Tirrell, organizer), June 2012, Arlington VA**
- *Panelist, Program in Biomechanics and Mechanobiology, 2011*
- *Panelist Reverse Site Visit, Materials Research Science & Engineering Centers (MRSEC), 2005, Arlington VA*
- *NSF CAREER Panelist, BES, 2001*

AMERICAN HEART ASSOCIATION:

- *Co-Chair, Bioengineering (2014)*
- *Peer Reviewer (2013- 2014)*

NANO AND ADVANCE MATERIALS INSTITUTE LTD (HONG KONG):

- *External Reviewer, 2013*

NEBRASKA EPSCoR FIRST AWARD:

- *Proposal Reviewer, 2011*

AMERICAN CHEMICAL SOCIETY:

- *Reviewer, Petroleum Research Fund, 2001*

Scientific Society Memberships:

- *American Heart Association (2014 -)*
- *American Association for the Advancement of Science (2013 -)*
- *North American Vascular Biology Organization (2010 -)*
- *American Institute for Medical and Biological Engineering (2009 -)*
- *American Society of Cell Biology (2005 -)*
- *Society for Biomaterials (2002 -)*
- *Biomedical Engineering Society (1999 -)*
- *Biophysical Society (1996 -)*
- *American Chemical Society (1993 -)*
- *Materials Research Society (1991 -)*

LOCAL SERVICE

Department:

- BME Graduate Committee (2013-)
- BME Senior Project Grader (2012-2013)
- BME Graduate Admissions Committee (2012-2013)
- Faculty Advisor to Alpha Eta Mu Beta (2012 – 2013)
- BME Graduate Committee (2001 - 2012)
- BME Faculty Mentor for assistant professor (2009 – present)
- BME Chair Search Committee (2007 – 2008)
- NIH Quantitative Biology and Physiology Training Grant Steering Committee (2006-2010)
- BME Executive Committee (2006 – 2010)
- Associate Chair, Graduate Studies (2006 – 2010)
- Faculty Search Committee, Nano/Micro Biomaterials (2005-2008)
- Faculty Search Committee, Single Molecule Mechanics (2004-2005)
- BME Faculty Advisor (2004 – 2006)
- Faculty Search Committee, Integrative Mechanics (2003-2004)
- Faculty Search Committee (2000-2001)
- BME Undergraduate Committee (1999-2001)
- BME Seminar Committee (1998-2000)

College:

- College of Engineering 50th Anniversary Planning Committee Member (2013 -)
- India MS Cellular and Biomolecular Engineering Program proposal preparation (2012)
- College of Engineering Advancement, Promotions, Tenure Committee
- Division of Materials Science and Engineering Faculty Liaison Committee (2008-2010)
- College of Engineering Graduate Committee (2006- 2010)
- Advanced Materials Cluster Committee (2006-7)
- Materials Science and Engineering Graduate Degree Committee (2006-7)
- College of Engineering Advancement, Promotions, Tenure Committee
- Chair, Bioinformatics Curriculum Committee (1998-1999)
- Student Conduct Committee (1998-2000)

University:

- Director, Provost's Initiative to Advance Women in STEM at BU (2013-)
- Women In Networks Oversight Committee (Women in Science and Engineering) (2008 – 2010)
- President's Council on the Global University (2008 – 2010)
- Beckman Scholars Program Committee (2007 – present)
- Biology Department Faculty Search Committee (2006 – 2007)
- Associate Director, Center for Nanoscience and Nanobiotechnology (2006 – 2008)
- MD/PhD Executive Committee (2006 – 2010)
- CAS Dean Search Committee (2006- 2007)
- Charles River Patent Committee (2005 – present)

- Molecular Cellular Biology, Biochemistry (MCBB) Program Planning Committee (2005 – 2006)
- Pathways for Women in Science and Engineering (2000-2002)
- Materials Science and Engineering Steering Committee (1999-2002)
- MD/PhD Admissions Committee (2001-2002)
- Clare Boothe Luce Graduate Fellow Committee (2000 – 2004)
- Pharmacology Graduate Training Grant Steering Committee (2001 - 2008)

POSTDOCTORAL FELLOW AND STUDENT SUPERVISION

Postdoctoral Fellows: (current position)

- Graciela Mohamedi, Ph.D. (2013 – present)
- Elaine Lee, Ph.D. (2012 – present)
- Yoonjee Park, Ph.D. (2010 – 2013), Postdoctoral researcher, MIT
- Patricia Solski, Ph.D. (2009 – 2012)
- Ragnhild Whitaker, Ph.D. (2009 – 2010), Senior scientist, Scandiderma AS
- Christopher Sucato, Ph.D. (2008 – 2010), Scientist, Blue Stream Laboratories
- Kristen LaFlamme, Ph.D. (2007), Medical Writer, MedErgy Marketing, Inc.
- Brett Isenberg, Ph.D. (2005 – 2012) Biomedical Researcher, Draper Laboratories
- Jennie Leach, Ph.D. (2003 – 2005), Assoc. Prof. ChE, U Maryland, Baltimore County
- Xin Q. Brown, Ph.D. (2002 – 2007), Lab Manager, BioInterface CORE Facility, BU/BME
- Keiko Ookawa, Ph.D. (2002), Asst. Prof. U of Tsukuba, JAPAN
- Padmavathy Rajagopalan, Ph.D. (2001 – 2002), Assoc. Prof., Virginia Tech

Graduate Students, PhD: (current position)

Primary Advisees listed only; served on 50+ other committees, and an additional 7 external to BU

- Nicholas Rim (Ph.D., BME, expected 2017)
- George Kwong (Ph.D., BME, expected 2016) *co-advisor: Darrell Kotton*
- Matthew Jacobsen (Ph.D., BME, expected 2016) *co-advisor: Michael Smith*
- Laura Blaha (Ph.D., BME, expected 2016) *co-advisor: Mario Cabodi*
- Carl Beigie (Ph.D., BME, expected 2014)
A Theranostic Approach to the Prevention and Imaging of Intraperitoneal Adhesions using Drug Loaded Hybrid Liposome-Iron Oxide Nanoparticles
- Christopher Hartman (Ph.D., BME, expected 2015)
The Role of Extracellular Matrix Composition in Vascular Smooth Muscle Cell Durotaxis
- Chentian Zhang (Ph.D., BME, expected 2015) *co-advisor: Mario Cabodi*
Microfluidic System for Cancer Competitive Metastasis
- Jaeyun (Josh) Kim (Ph.D., BME, expected 2014) *The role of hypoxia on MSC signaling on developing vascularized viable thick tissues*
- Tuan Pham (Ph.D., BME, expected 2014) *co-advisor: James Hamilton (BUSM)*
Use of MR and US to Differentiate Plaque Progression Pathways and Evaluate the Effectiveness of Pharmacological Interventions
- Daniel Backman (Ph.D., BME, expected 2014)
The Biomechanics of Cell Sheet Based Tissue Engineered Vascular Patches

- Raphael Yao (Ph.D., BME, 2013); (researcher, Academia Sinica, Institute of Biomedical Sciences, Taipei, Taiwan)
The Effects of Mechanical Stimulation on Controlling and Maintaining Mesenchymal Stem Cell Differentiation into Vascular Smooth Muscle Cells
- Michelle Kinahan (Ph.D., BME, 2013); (science editor, JoVE: Journal of Visualized Experiments)
Tunable Silk: Using Microfluidics to Fabricate Silk Fibers with Controllable Properties and Investigate Sequence-Structure-Property Relationships
- Matthew Walker (Ph.D., 2013)
Development of Novel Approaches For The Study Of Cellular Migration and Durotaxis
- Olga Sazonova (Ph.D., BME, 2011) co-advisor: Matthew Nugent (BUSM); (postdoc at Stanford University)
Cell-cell interactions and ECM presentation mediate the effects of substrate stiffness on vascular smooth muscle cell behavior
- Corin Williams (Ph.D., BME, 2011); (postdoc at Tufts University)
Controlling cell shape, organization, and behavior: Towards the development of vascular patches that recapitulate native artery structure and function
- Wynter Duncanson (Ph.D., BME, 2009); (assistant professor, Chemical Engineering, Nazarbayev University, KAZAKHSTAN)
Targeted binding of polymer ultrasound contrast agents for molecular imaging
- Kelley Burrige (Ph.D., BME, Jan 2006); (scientific reviewer, FDA)
Targeted drug delivery: Effects of grafted polyethylene glycol on ligand-receptor binding under flow
- Sooyoung Kim (Ph.D., BME, June 2005); (Endodontist)
Impact of substrate stiffness on vascular smooth muscle cell behavior: A comparison of uniform and gradient substrate stiffness
- Jeffrey Jacot (Ph.D., BME, May 2005); (assistant professor BME, Rice University)
Multiscale analysis of arterial bypass remodeling: Mechanical characterization and influence of endothelial injury on vascular smooth muscle cell proliferation

External Member of Thesis Exam Committee at the following Universities:

- Harvard University; Worcester Polytechnic University; U-Mass Medical School Worcester; University of Calgary, CANADA; Tufts University

Graduate Students, MS: (position after leaving lab)

Primary Advisees listed only

- David Li (M.S., BME, 2014), (PhD candidate, Carnegie Mellon University)
Biomimetic Modifications to Microfluidic Silk Spinning
- Chian Yang (M.S., BME, 2013), co-advisor: Darrell Kotton (Energesis Pharmaceuticals)
Derivation of purified smooth muscle cells from mouse induced pluripotent stem (iPS) cells
- Tatiana Laivins (M.S., BME, 2011), (Merck, Staff Development Engineer, VMSC-Viral Vaccines Process Development)
A pulsatile bioreactor for pediatric cardiovascular tissue culture
- Jared Smith (M.S., BME, 2011), (Medical School student)
Characterization and toxicity assessment of PEGylated iron oxide nanoparticles

- Adam Luce (M.S., BME, 2010) (BU Medical School)
The Fabrication and Characterization of Novel Monodisperse Microbubbles for Molecular Imaging and Targeted Drug Delivery
- Graham Houtchens (M.S., BME, 2009) (Claros Diagnostics)
Multiphase microemulsions using microfluidic flow focusing
- Emmanouela Filippidi (M.S., BME, 2007) (NYU Physics PhD program)
Controlled biopolymer assembly in microfluidic devices
- Sumona Sarkar (M.S., BME, 2006) (Drexel BME PhD program)
Fabrication of a layered micro-structured tissue construct for vascular tissue engineering applications
- Michael Figa (M.S., BME, 2005) (Bind Biosciences, Inc.)
Development, characterization and optimization of novel lipid-polymer micro and nanoparticles targeted delivery vehicles
- Michael Foster (M.S., BME, 2005) (Arthocare, Inc.)
Microgrooves dominate cyclic strain response of vascular smooth muscle cell orientation
- Nadia Zaari (M.S., Physics, 2002) (Valeo, Inc. (Paris FRANCE))
- Christianne Gaudet (M.S., BME, 2002)
Effect of ligand concentration on cell-generated traction stresses
- Mark Hennessy (M.S., BME, 2001) (SPARTA, Inc.)
Effect of substrate adhesivity on cell-generated traction stresses

International Visiting Students (home institution):

- Yi (Rachel) Zhou, *National University of Singapore*, SINGAPORE (2010)
- Katrin Schorsch, *Leibniz Institute of Polymer Research of Dresden*, GERMANY (2009-10)
- Teresa Eichinger, *Ludwig-Maximilians University, Munich*, GERMANY (2007-8)
- Esther Amstad, *ETH-Zurich*, SWITZERLAND (2006-7)
- Marie-Laure Hisette, *CNRS Strasbourg*, FRANCE (2006)
- Yukiko Tsuda, *University of Tsukuba*, JAPAN (2006)
- Sarah Koester, *University of Ulm*, GERMANY (2004)

Visiting Scientists:

- Frank Lau, MD (2013 - 2014)
- Hiroshi Nomura, MD (2013 - 2014)
- Matthew Robinson (2012 - 2014) MD student, Duke University
- J. Ramon Leis, PhD (2012)
- Jenny Lin (2010 – 2012)
- Paul DiMilla, PhD (2002 – 2010)
- Suzanne Giasson, PhD (2002)

Undergraduate Senior Projects: (additional 50+ undergraduate researchers not listed)

- Yuankai Shen, William Wang, Alex Valentine, and Michael Palmiere (BME) 2014
Cell sheet interaction on three-dimensional bioprinted tubular constructs
- Alberto Purwada and Thiagarajan Meyyappan (BME) 2013
Microfluidics-based perfusion bioreactor for stem cell differentiation

- Anna Cristina Shivers and Diana Miniovich (BME) 2013
Ultrasound Contrast Agents as Theranostics for Atherosclerosis
- Dongjian Hu and Katheryn Rothenberg (BME) 2012 *co-advisor : Michael Smith*
Cellular Traction Force Measurement of Mesenchymal Stem Cells Under Biochemical Stimulation
- Angela Xie and Andrew Schiff (BME) 2012
Control of Organization and Function in a Tissue-Engineered Vascular Patch
- Kristen Lee (BME, co-advisor: Michael Smith) 2011
Mesenchymal stem cell matrix remodeling
- Cori Pierce and Spenser Lin (BME) 2010
Correlating Shape with Contractility in Vascular Smooth Muscle Cells
- Alexander Razon and Tony Tam (BME) 2010
Development of Detection Method for Small Molecule Binding to EGFR in Supported Lipid Bilayers
- Warren Ferris, Tim Lyford, and Sean Taylor (BME) 2009
Tissue Stretcher System for Engineered Small-Diameter Blood Vessels
- Ali Hasan, Michael Chin, Mitchell Fung, Amine Sefrioui, Vincent Szeto (ME) 2009
Bioreactor System for Tissue Engineered Blood Vessels
- Michael Miller (BME) 2008
Integrated Optical Force Transducer and Mechanical Stretcher to Assess Tissue Properties
- Mary Balaconis and Jaclyn Lautz (BME, co-advisor : Heather Clark) 2007
Monitoring glucose levels with fluorescent sensors in tissue-engineered constructs
- Jason Nami (BME) 2007
Microfluidic Production of Gas Filled Monodisperse Polymer Microbubbles to Be Used as Ultrasound Contrast Agents
- Carolyn Yee (BME) 2007
The Effects of Cyclic Strain on Vascular Smooth Muscle Cells
- Roy Arjoon (BME, co-advisor : Christiane Ferran) 2007
Exploring a Link between A20 Expression and Vascular Wall Biomechanics
- Edward Lee (BME) 2006
Vascular Tissue Engineering: Micropatterned Substrates to control Gene Expression and Organization of Cell-Secreted Extracellular Matrix
- Christopher Sip (BME) 2006
A System for Studying the Role of Substrate Mechanics in the Organization of Dynamically Cultured Vascular Smooth Muscle Cells and Extracellular Matrix
- Juliana Jackel (BME) 2005
Micropatterned Substrata to Control Vascular Smooth Muscle Cells
- Joshua Schnall (BME) 2005
Tissue Engineering the Medial Layer of Small Diameter Arteries
- Annika Hedin (BME) 2005
Characterizing and Designing Microcarriers for Peak in vivo Performance
- Adiba Ali and Shipra Sharma (BME ; co-advisor : Martin Steffen) 2005
Proteomic Analysis of Smooth Muscle Cells in vitro for Uncovering Molecular Determinants of the Contractile Phenotype

- Erin Taschner (BME, co-advisor: Tejal Desai) 2004
Vascular Tissue Engineering : Development of a Synthetic Multilayered Tissue Scaffold
- Manisah Dadhania (BME) 2004
Fibronectin Secretion of Vascular Smooth Muscle Cells on Various Polymer Scaffolds
- Corin Heymann (BME) 2004
Engineered Substrata to Elucidate Factors that Control the Phenotypic Modulation of Primary Vascular Smooth Muscle Cells
- Scott Dianis (BME) 2004
Measuring how Durotaxis affects Vascular Smooth Muscle Cell Migration in Vein Bypass Grafts
- Lacey Matthews and Ila Khanna (BME, co-advisor: Katya Ravid) 2004
Vascular Smooth Muscle Cell Polyploidization and its Impact on Vascular Function
- Michael Figa (BME) 2003
Patterning Lipid Bilayers of Varied Composition
- Vaibhavi Gunderia (BME) 2003
Effect of Substrate Compliance on the Phenotype of Vascular Smooth Muscle Cells
- Sumona Sarkar (BME; co-advisor: Tejal Desai) 2003
Effects of Smooth Muscle Cell Orientation on Microengineered Tissue Construct Properties
- Quynh Pham (BME) 2003
Patterning Polyacrylamide Hydrogels for Directed Cell Motility
- Alan Velasco (BME) 2002
Cell Motility as a Function of Mechanical Compliance of Substrates
- Saeeda Jaffar (BME) 2000
Characterization of Hydrogels for Vascular Smooth Muscle Cell Culture
- Sarah Moll (BME, co-advisor: Zhiping Weng) 1999
Characterization of Surface Conserved Peptide Sequences Involved in Binding of Cell Adhesion Complexes

GRADUATE / UNDERGRADUATE EDUCATION

Courses Developed:

Biomechanics and Biomaterials (BE532), graduate and undergraduate seniors

Introduction to Engineering: Biomaterials (EK 131/132), undergraduate freshmen

Biomaterials and Principles of Tissue Engineering (BE 732), graduate and undergraduate seniors

Fundamentals of Biomaterials (with Mark Grinstaff) (BE/ME/MS 726)

Principles and Applications of Tissue Engineering (with Mark Grinstaff) (BE/ME/MS 727)

OUTREACH/MENTORING (in addition to serving as mentor in REU & UROP programs)

- Research mentor for internship for student in program in Biomedical Laboratory and Clinical Sciences (BU MET/MED) (2014)
- Research mentor for RISE students (2012, 2013)
- Lab tour and research overview to high school students and their teacher from the International School in Washington DC, who are interested in pursuing a career in science and engineering, March 2011
- Luncheon with women graduate students and postdocs at Harvard MRSEC, March 2011

- Luncheon panelist, “Biology Inquiry and Outreach with Boston University Graduate Students” (BioBUGS), December 2009
- Initiated Graduate Women in BME Book Club in 2008 (BU BME), inspired by Linda Carli and Alice Eagly’s “Through the Labyrinth: The Truth About How Women Become Leaders” (with Beverly Brown and Catherine Klapperich)
 - “Through the Labyrinth”: May 2008
 - “Meetings, Bloody Meetings”: July 2008
 - “Blink” – May 2009
- Lecturer in “Authentic Science Research Class” at Manchester Essex Regional High School, Manchester-by-the-Sea, MA, May 2007
- Research mentor for high school student in Research Science Institute (RSI), a program co-sponsored by Center of Excellence in Education and MIT, Summer 2005
- Volunteer at Brookline public school (K-8): hands-on science activities

JOURNAL ARTICLES (*ugrad*, *grad*, *postdoc* trainees)

77. J.Y. Wong, D.L. Kaplan, and M.J. Buehler (in review) “Spider silk – its mysteries, how it’s made, its strength, toughness, elasticity,” *Physics Today* (*invited*)
76. Olena Tokareva; Shangchao Lin; Matthew Jacobson; Wenwen Huang; Daniel Rizzo; David Li; Marc Simon; Cristian Staii; Peggy Cebe; Joyce Wong; Markus Buehler, and David L. Kaplan, (accepted) “Effect of Sequence Features on Assembly of Spider Silk Block Copolymers,” *Journal of Structural Biology*
75. Danna Gurari, Diane Theriault, Chentian Zhang, Joyce Wong, and Margrit Betke (*submitted*) “Comparative analysis of algorithms for automatically finding the boundaries of cells in images,”
74. H. Kong and J.Y. Wong, Guest Editors (2014) “Materials for Biological Modulation, Sensing, and Imaging” *MRS Bulletin* 39 (1): 12-14. <http://dx.doi.org/10.1557/mrs.2013.317>
73. Park, Y., J.B. Smith, T. Pham, R.D. Whitaker, C. Sucato, J.A. Hamilton, E. Bartolak-Suki, and J.Y. Wong (*accepted*) “Effect of PEG Molecular Weight on Stability, T2 contrast, Cytotoxicity, and Cellular Uptake of Superparamagnetic Iron Oxide Nanoparticles (SPIONs)” *Colloids and Surfaces B: Biointerfaces*
72. Nap, R., Park, Y., Wong, J.Y., and I. Szleifer (2013) “Adsorption of acid and polymer coated nanoparticles: a statistical thermodynamics approach” *Langmuir*, 29 (47): 14482–14493 DOI: 10.1021/la403143a
71. Park, Y., J. Paulsen, R.J. Nap, R.D. Whitaker, V. Mathiyazhagan, Y.-Q. Song, M. Hürlimann, I. Szleifer, and J.Y. Wong (2014) “Adsorption of Superparamagnetic Iron Oxide Nanoparticles on Silica and Calcium Carbonate Sand,” *Langmuir*, 30 (3): 784–792. DOI: 10.1021/la404387t
70. Giesa, T., N.M. Pugno, J.Y. Wong, D.L. Kaplan, and M.J. Buehler (2014) “What’s inside the box? – Length scales that govern fracture processes of polymer fibers,” *Advanced Materials* 26(3): 412-417. DOI: 10.1002/adma.201303323
69. Yao, R. and J.Y. Wong, (*in review*) “The effects of mechanical stimulation on controlling and maintaining marrow stromal cell differentiation into vascular smooth muscle cells,”

68. Sazonova, O.V., B.C. Isenberg, J. Herrmann, K. Lee, A. Purwada, A. Valentine, J.Y. Wong*, and M Nugent* (*in review*) “Extracellular matrix presentation modulates vascular smooth muscle cell mechanotransduction,” (*co-corresponding authors)
67. Tokareva, O., M. Jacobsen, M. Buehler, J.Y. Wong, and D.L. Kaplan (2014) “Structure-Function-Property-Design Interplay in Biopolymers: Spider Silk,” *Acta Biomaterialia*, 10 (4): 1612–1626. <http://dx.doi.org/10.1016/j.actbio.2013.08.020>
66. Gurari, D., S-K Kim, E. Yang, B. Isenberg, T. Pham, A. Purwada, P. Solski, M. Walker, J.Y. Wong, and M. Betke (2013) “SAGE: A Principled Approach and Implementation Empowering Quick and Reliable Quantitative Analysis of Segmentation Quality,” *IEEE Workshop on the Applications of Computer Vision (WACV) 2013, Clearwater Beach, Florida*
65. Wong, Joyce. Y.*, J. McDonald, M. Taylor-Pinney, D. I Spivak, D. L. Kaplan*, and M.J. Buehler* (2012) “Materials by Design: Merging Proteins and Music,” *Nano Today* 7: 488-495. (*co-corresponding authors)
64. Wu, Z., D. Gurari, J.Y. Wong, and M. Betke (2012) “Hierarchical Partial Matching and Segmentation of Interacting Cells,” *MICCAI 2012, Part I, LNCS 7510*, Springer-Verlag, Berlin Heidelberg, pp. 389-396.
63. Gronau, G., S. Krishnaji, Michelle E. Kinahan, T. Giesa, J.Y. Wong*, D.L. Kaplan*, and M.J. Buehler* (2012) “A review of combined experimental and computational procedures for assessing biopolymer structure-process-property relationships,” *Biomaterials*, 33(33): 8240-55. (*co-corresponding authors)
62. Krishnaji, S., G. Bratzel, M.E. Kinahan, J.A. Kluge, C. Staii, J.Y. Wong*, M.J. Buehler*, and D.L. Kaplan* (2013) “Sequence–structure–property relationships of recombinant spider silk proteins: Integration of biopolymer design, processing, and modeling,” *Advanced Functional Materials*, 23(2): 241-253. (*co-corresponding authors)
61. Park, Y., R.D. Whitaker, R. Nap, J. Paulsen, V. Mathiyazhagan, L.H. Doerrer, Y.Q. Song, M. Hürlimann, I. Szleifer, and J.Y. Wong (2012) “Stability of Superparamagnetic Iron Oxide Nanoparticles at Different pH Values: Experimental and Theoretical Analysis,” *Langmuir*, 28: 6246-6255.
60. Park, Y., A.C. Luce, R.D. Whitaker, B. Amin, M. Cabodi, R. Nap, I. Szleifer, R.O. Cleveland, J.O. Nagy, and J.Y. Wong (2012) “Tunable polymerized shell microbubbles as molecular imaging ultrasound contrast agents,” *Langmuir* 28: 3766-3772.
59. Lin, J.B., B.C. Isenberg, Y. Shen, K. Schorsch, O.V. Sazonova, and J.Y. Wong (2011) “Poly(N-isopropylacrylamide) Grafted onto Microtextured Poly(dimethylsiloxane) for Aligned Cell Sheet Engineering,” *Colloids and Surfaces B: Biointerfaces* 99: 108-115.
58. Isenberg, B.C., D.E. Backman, M.E. Kinahan, R. Jesudason, B. Suki, P.J. Stone, E.C. Davis, and J.Y. Wong (2012) “Micropatterned cell sheets with defined cell and extracellular matrix orientation exhibit anisotropic mechanical properties,” *J Biomechanics* 45: 756-761. <http://dx.doi.org/10.1016/j.jbiomech.2011.11.015>
57. Williams, C., A. Xie, M. Yamato, T. Okano, and J.Y. Wong (2011) “Stacking of aligned cell sheets for layer-by-layer control of complex tissue structure,” *Biomaterials* 32: 5625-5632.
56. Williams, C., A. Xie, S. Emani, M. Yamato, T. Okano, S.M. Emani, and J.Y. Wong (2012) “A comparison of human smooth muscle and mesenchymal stem cells as potential cell sources

- for tissue engineered vascular patches,” *Tissue Engineering Part A*, 18 (9-10): 986-998.
<http://online.liebertpub.com/doi/full/10.1089/ten.tea.2011.0172>
55. Pageau, S.C., O. Sazonova, J.Y. Wong, A. Soto, and C. Sonnenschein (2011) “The effect of stromal components on the modulation of the phenotype of human bronchial epithelial cells in 3D culture,” *Biomaterials* 32: 7169-7180.
54. Sazonova, O.V., K.L. Lee, B.C. Isenberg, C.B. Rich, M.A. Nugent*, and J.Y. Wong* (2011) “Cell-cell interactions mediate the response of vascular smooth muscle cells to substrate stiffness,” *Biophysical Journal* 101(3): 622-630. (*co-corresponding authors) PMC 3145282
53. Kinahan, M., E. Filippidi, S. Koester, H.M. Evans, T. Pfohl, D.L. Kaplan, and J.Y. Wong (2011) “Tunable silk: Using microfluidics to fabricate silk fibers with controllable properties,” *Biomacromolecules*, 12: 1504-1511, DOI: 10.102/bm1014624 (<http://pubs.acs.org/doi/pdfplus/10.1021/bm1014624>)
52. Theriault, D.H., M. Walker, J.Y. Wong, and M. Betke (2011) “Cell morphology classification and clutter mitigation in phase-contrast microscopy images using machine learning,” *Machine Vision and Applications* (DOI) 10.1007/S00138-011-0345-9
51. M.C. Kim, B.C. Isenberg, J. Sutin, A. Meller, J.Y. Wong, and C.M. Klapperich (2011) “Programmed Trapping of Individual Bacteria Using Micrometer-size Sieves,” *Lab Chip*, 11: 1089-109. DOI: 10.1039/C0LC00362J
50. Williams, C., X.Q. Brown, E. Bartolak-Suki, H. Ma, A. Chilkoti, and J.Y. Wong (2011) “The use of micropatterning to control smooth muscle myosin heavy chain expression and limit the response to transforming growth factor beta-1 in vascular smooth muscle cells,” *Biomaterials*, 32: 410-418.
49. Brown, X., E. Bartolak-Suki, C. Williams, M. Walker, V.M. Weaver, and J.Y. Wong (2010) “Effect of substrate stiffness and PDGF on the behavior of vascular smooth muscle cells: Implications for atherosclerosis” *Journal of Cellular Physiology*, 225: 115-122.
48. Duncanson, W.J., K. Oum, J.R. Eisenbrey, R.O. Cleveland, M.A. Wheatley, and J.Y. Wong (2010) “Targeted binding of PEG-lipid modified polymer ultrasound contrast agents with tiered surface architecture” *Biotechnology and Bioengineering*, 106(3): 501-506.
47. Isenberg, B.C.*, P.A. DiMilla*⁺, M. Walker, S. Kim, and J.Y. Wong⁺ (2009) “Vascular smooth muscle cell durotaxis depends on substrate stiffness gradient strength,” *Biophys. J.*, 97: 1313-1322 (*co-first authors) (co-corresponding authors⁺)
46. House, D., M.L. Walker, Z. Wu, J.Y. Wong, and M. Betke (2009) “Tracking of cell populations to understand their spatio-temporal behavior in response to physical stimuli,” *IEEE Computer Society Conference on Computer Vision and Pattern Recognition Workshops (CVPR Workshops 2009)*, June 20-25, 2009: 186-193
45. Amstad, E., S. Zurcher, A. Mashaghi, J.Y. Wong, M. Textor, and E. Reimhult (2009) “Surface Functionalization of Single Superparamagnetic Iron Oxide Nanoparticles for Targeted Magnetic Resonance Imaging,” *Small*, 5(11): 1334-1342 (<http://dx.doi.org/10.1002/sml.200801328>)
44. Williams, C.*, J. Liao*, E.M. Joyce, J.B. Leach, M.S. Sacks, and J.Y. Wong (2009) “Altered structural and mechanical properties in decellularized rabbit carotid arteries,” *Acta Biomaterialia*, 5(4):993-1005 (*co-first authors)

43. Jacot, J.G. and J.Y. Wong (2008) “Endothelial injury induces vascular smooth muscle cell proliferation in highly localized regions of a direct contact co-culture system,” *Cell Biochemistry and Biophysics*, 52(1):37-46.
42. Williams, C., Y. Tsuda, B.C. Isenberg, M. Yamato, T. Shimizu, T. Okano, and J.Y. Wong (2009) “Aligned cell sheets grown on thermo-responsive substrates with micro-contact printed protein patterns,” *Advanced Materials*, 21(21): 2161-2164. (published online 9 Oct 2008)
41. Isenberg, B.C., Y. Tsuda, C. Williams, T. Shimizu, M. Yamato, T. Okano, and J.Y. Wong (2008) “A thermoresponsive, microtextured substrate for cell sheet engineering with defined structural organization,” *Biomaterials*, 29(17): 2565-72.
40. Sarkar, S., B.C. Isenberg, E. Hodis, J.B. Leach, T.A. Desai and J.Y. Wong (2008) “Fabrication of a Layered Microstructured Polycaprolactone Construct for Vascular Tissue Engineering,” *J Biomater Sci*, 19(10): 1347-1362.
39. Houtchens, G.R., M.D. Foster, T.A. Desai, E.F. Morgan, and J.Y. Wong (2008) “Combined Effects of Microtopography and Cyclic Strain on Vascular Smooth Muscle Cell Orientation,” *J Biomech*, 41(4): 762-769.
38. Wong, J.Y. and T.L. Kuhl (2008) “Dynamics of Membrane Adhesion: The role of polyethylene glycol spacers, ligand-receptor bond strength, and rupture pathway,” *Langmuir*, 24(4): 1225-1231.
37. Koester, S., H.M. Evans, J.Y. Wong, and T. Pfohl (2008) “An in-situ Study of Collagen Self-Assembly Processes,” *Biomacromolecules*, 9(1): 199-207.
36. Duncanson, W. J., M.A. Figa, K. Hallock, S. Zalipsky, J.A. Hamilton, and J. Y. Wong (2007) “Targeted binding of PLA microparticles with lipid-PEG-tethered ligands,” *Biomaterials*, 28: 4991-4999.
35. Arold, S.P., J.Y. Wong, and B. Suki (2007) “Design and of a New Stretching Apparatus and the Effects of Cyclic Strain and Substratum on Mouse Lung Epithelial-12 Cells,” *Annals of Biomedical Engineering*, 35 (7): 1156-1164.
34. Leach, J.B., X.Q. Brown, J.G. Jacot, P.A. DiMilla, and J.Y. Wong (2007) “Neurite outgrowth and branching of PC12 cells on very soft substrates sharply decreases below a threshold of substrate rigidity,” *Journal of Neural Engineering*, 4:26-34.
33. Koester, S., J.B. Leach, T. Pfohl, and J.Y. Wong. (2007) “Visualization of flow-aligned type I collagen self-assembly in tunable pH-gradients,” *Langmuir*, 23: 357-359.
32. Isenberg, B.C., and J.Y. Wong (2006) “Building Structure into Engineered Tissues,” *Materials Today* (review), 9: 54-60.
31. Sarkar, S., G.Y. Lee, J.Y. Wong, and T.A. Desai (2006) “Development and characterization of a porous micro-patterned scaffold for vascular tissue engineering applications,” *Biomaterials* 27: 4775-4782.
30. J.G. Jacot, S.W. Dianis, J. Schnall, and J.Y. Wong (2006) “A simple microindentation technique for mapping the microscale compliance of soft hydrated materials and tissues,” *J. Biomed. Mat. Res.*, 79A: 485-494.

29. Koester, S., J.B. Leach, J.Y. Wong, and T. Pfohl. (2006) "Microaligned collagen matrices by hydrodynamic focusing: controlling the pH-induced self-assembly," *Mat. Res. Soc. Proc.*, 898E: 0898-L05-21
28. Leach, J.B., J.B. Wolinsky, P.J. Stone, and J.Y. Wong (2005) "Crosslinked α -elastin biomaterials: Towards a processable elastin mimetic scaffold," *Acta Biomaterialia*, 1: 155-164.
27. Sarkar, S., M. Dadhania, P. Rourke, T.A. Desai, and J.Y. Wong (2005) "Vascular Tissue Engineering: Microtextured Scaffold Templates to Control Organization of Vascular Smooth Muscle Cells and Extracellular Matrix," *Acta Biomaterialia*, 1: 93-100.
26. Zaari, N., P. Rajagopalan, S.K. Kim, A. Engler, and J.Y. Wong (2004) "Hydrogels photopolymerized in a microfluidics gradient generator: Tuning substrate compliance at the microscale to control cell response," *Advanced Materials*, 16: 2133 – 2137.
25. Brown, X.Q., K. Ookawa, and J.Y. Wong (2005) "Evaluation of polydimethylsiloxane scaffolds with physiologically-relevant elastic moduli: Interplay of substrate mechanics and surface chemistry effects on vascular smooth muscle cell response", *Biomaterials*, 26: 3123-3129.
24. Burridge, K.A., M.A. Figa, and J.Y. Wong (2004) "Patterning Adjacent Supported Lipid Bilayers of Desired Composition to Investigate Receptor-Ligand Binding under Shear Flow," *Langmuir*, 20: 10252-10259. *highlighted in Anal. Chem. 'Currents', Jan 2005*
23. Calvet, D., J.Y. Wong, and S. Giasson (2004) "Rheological monitoring of PAAm hydrogel gelation: Importance of cross-link density and temperature," *Macromolecules*, 37 (2): 7762-7771.
22. Rajagopalan, P., W.A. Marganski, X.Q. Brown, and J.Y. Wong (2004) "Direct comparison of the spread area, contractility, and migration of balb/c 3T3 fibroblasts adhered to fibronectin- and RGD-modified substrata," *Biophys. J.*, 87 (4): 2818-2827.
21. Wong, J.Y., J.B. Leach, and X.Q. Brown (2004) "Balance of chemistry, topography, and mechanics at the cell-biomaterial interface: Issues and challenges for assessing the role of substrate mechanics on cell response", *Surf. Sci.*, 570: 119-133
20. Engler, A., L. Richert, J. Wong, C. Picart, and D. Discher (2004) "Surface probe measurements of the elasticity of sectioned tissue and thin gels: correlations between substrate stiffness and cell adhesion", *Surf. Sci.*, 570: 142-154.
19. Gaudet, C., W.A. Marganski, S. Kim, C.T. Brown, V. Gunderia, M. Dembo, and J.Y. Wong (2003) "Influence of substratum type I collagen concentration on fibroblast spreading, motility, and contractility," *Biophys. J.* 85 (5): 3329-3335.
18. Wong, J.Y., A. Velasco, P. Rajagopalan, and O. Pham (2003) "Directed movement of vascular smooth muscle cells on gradient compliant hydrogels," *Langmuir* 19: 1908-1913.
17. Wong, J.Y., Z. Weng, C.T. Brown, S.K. Moll, and S. K. Kim (2002). "Identification and validation of a novel cell-recognition site (KNEED) on the 8th type III domain of fibronectin." *Biomaterials* 23: 3865-3870.

16. Rajagopalan, P., W. Marganski, M. Dembo, J.Y. Wong (2002) "Traction Stresses and Morphology of 3T3 Fibroblast Cells on Fibronectin- versus RGD- Modified Elastic Substrata." *Mat. Res. Soc. Proc.* 711: 231-237.
15. Jeppesen, C., J. Y. Wong, T. L. Kuhl, J. N. Israelachvili, N. Mullah, S. Zalipsky, and C.M. Marques (2001). "Impact of ligand tether length on multiple ligand-receptor bond formation." *Science* 293: 465-468.
14. Seitz, M., C. K. Park, J. Y. Wong and J. N. Israelachvili (2001). "Long-range interaction forces between polymer-supported lipid bilayer membranes." *Langmuir* 17(15): 4616-4626.
13. Majewski, J., T. L. Kuhl, J. Y. Wong and G. S. Smith (2000). "X-ray and neutron surface scattering for studying lipid/polymer assemblies at the air-liquid and solid-liquid interfaces." *Reviews in Molecular Biotechnology* 74: 207-231.
12. Wong, J. (1999). "Tissue engineering: Tractional forces of cells." *Science & Medicine* 6(5): 6-7.
11. Wong, J., A. Chilkoti and V. T. Moy (1999). "Direct force measurements of the streptavidin-biotin interaction." *Biomolecular Engineering* 16(1-4): 45-55.
10. Wong, J. Y., J. Majewski, M. Seitz, C. K. Park, J. N. Israelachvili, and G.S. Smith (1999). "Polymer-cushioned bilayers. I. A structural study of various preparation methods using neutron reflectometry." *Biophys. J.* 77(3): 1445-1457.
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5. Seitz, M., J. Y. Wong, C. K. Park, N. A. Alcantar and J. Israelachvili (1998). "Formation of tethered supported bilayers via membrane-inserting reactive lipids." *Thin Solid Films* 329: 767-771.
4. Wong, J. Y., T. L. Kuhl, J. N. Israelachvili, N. Mullah and S. Zalipsky (1997). "Direct measurement of a tethered ligand-receptor interaction potential." *Science* 275(5301): 820-822.
3. Wong, J. Y., R. Langer and D. E. Ingber (1994). "Electrically conducting polymers can noninvasively control the shape and growth of mammalian cells." *Proc. Natl. Acad. Sci. USA* 91(8): 3201-3204.
2. Wong, J. Y., R. Langer and D. Ingber (1994). "Cell interactions with fibronectin-coated electrically conducting polypyrrole thin films." *Mater. Res. Soc. Proc.* 331: 141-145.

1. Wong, J. Y., D. E. Ingber and R. Langer (1993). "Cell attachment and protein adsorption to polypyrrole thin films." *Mater. Res. Soc. Proc.* 293: 179-184.

EDITED BOOKS

3. Wong, J.Y., Section Editor, "Biomaterials" in "Biomedical Engineering Fundamentals," in The Biomedical Engineering Handbook, 4th Edition, Joseph D. Bronzino, Ed., Boca Raton, FL: CRC Press, 2011.

2. Wong, J.Y., Section Editor, "Biomaterials" in "Biomedical Engineering Fundamentals," in The Biomedical Engineering Handbook, 3rd Edition, Joseph D. Bronzino, Ed., Boca Raton, FL: CRC Press, 2006.

1. "Architecture and Application of Biomaterials and Biomolecular Materials", Editors: A. Plant, A. Chilkoti, A.E. Barron, and J. Wong Volume EXS-1-C, Warrendale, PA: Materials Research Society, 2004.

BOOK CHAPTERS

3. Pham, T., C. Beigie, Y. Park, and J.Y. Wong (in press) "Microbubbles as Theranostics Agents," in Nano-Oncologicals: New Targeting and Delivery Approaches, Eds. M.J. Alonso and M. Garcia-Fuentes (Eds.), *Advances in Delivery Science and Technology*, CRS-Springer, New York, USA. Chapter 3.

2. Lee, E. and J.Y. Wong (in press) "Biomaterials for cardiovascular tissue engineering," in Bio-Inspired Materials for Biomedical Engineering, eds. Magin-Kirschner CM, Brennan A, John Wiley and Sons, US.

1. Kaufman, J., J.Y. Wong, and C. Klapperich (2005) "Controlling and Assessing Cell-Biomaterial Interactions at the Micro and Nanoscale: Applications in Tissue Engineering," in The Biomedical Engineering Handbook, 3rd edition, Biomaterials Section, J.Y. Wong section editor, Boca Raton, FL: CRC Press, 2006.

PUBLISHED ABSTRACTS (my undergrad, grad, postdoc trainees underlined)

6. Sazonova, O., M.A. Nugent, and J.Y. Wong. "Methods for investigating integrin-matrix interactions as a function of matrix mechanics and composition." (2008) *FASEB J.* 22:1122.1

5. Zaari, N., P. Rajagopalan, S.K. Kim, and J.Y. Wong, (2003) "Microgradient mechanically-compliant polyacrylamide gels to probe cell response," *Polym. Prep.* 44: 200-201.

4. Wong, J.Y. (2002) "Bioengineered polymeric substrata to probe cell behavior during vascular remodeling," *Polym. Prep.* 43(2): 657.

3. Brown, C.T., Z. Weng, H. Zhang, and J. Y. Wong (2002) "Mutational analysis verifies that "KNEED" sequence of fibronectin participates in cell-substrate interactions," *Polym. Prep.* 43(2): 754.

2. Rajagopalan, P., W. A. Marganski, M. Dembo, and J. Y. Wong (2002) "Interaction of fibroblasts with fibronectin- and RGD-modified polyacrylamide hydrogels," *Polym. Prep.* 43(2): 618.

1. Wong, J. Y., D. E. Ingber and R. Langer (1993). "Characterization of electrically conducting polypyrrole thin films for protein adsorption and cell attachment." *Polym. Prep.* 34(2): 60-61.

PATENTS (my undergrad, grad, postdoc trainees underlined)

4. Kim, J. and J.Y. Wong, *Multi-layered cell constructs and methods of use and production using enzymatically degradable natural polymers*, U.S. Prov. Appl. No.: 61/824,197 – Filing Date: May 16, 2013

3. Nagy, J.O., J.Y. Wong, A. Luce, R.D. Whitaker, R.O. Cleveland, Y. Park, *Polymerized shell lipid microbubbles and uses thereof*, Pub. No.: WO/2011/149985; International Application No.: PCT/US2011/037801; Publication Date: 01.12.2011; International Filing Date: 24.05.2011. (US 61/347,524)

2. Zalipsky, S. and Wong, J.Y. *Microparticles and nanoparticles containing a lipopolymer*, Pub. No.: WO/2006/039369; International Application No.: PCT/US2005/034928; Publication Date: 13.04.2006; International Filing Date: 28.09.2005.

1. Wong, J.Y., Ingber, D.E., and Langer, R. *Control of cell function on electrically conducting polymers* U.S. Patent 5,843,741 issued December 1, 1998.

INVITED LECTURES

1. Advanced Energy Consortium All Projects Review, June 2014, Cambridge MA
2. "Cell Engineering" Session, *NEBEC 2014*, April 2014, Boston MA
3. Harvard Thinks Biotech Symposium, March 2014, Cambridge MA
4. NIH NCI Workshop "Biomimetic Tissue Engineered Systems for Advancing Cancer Research" February 2014, NCI Shady Grove Campus, Rockville, MD
5. Advanced Energy Consortium All Projects Review, November 2013, Houston TX
6. *My Life as a Material Girl*, Boston University Academy All School Meeting, October 2013, Boston MA
7. "Science and Technology for Life Innovation by Tissue Engineering," 40th Anniversary of The Society of Non-Traditional Technology, July 2013, Tokyo, JAPAN
8. Tokyo Women's Medical University, July 2013, Tokyo, JAPAN
9. Advanced Energy Consortium All Projects Review, May 2013, Cambridge MA
10. Tutorial on *Integrating Modeling and Experimental Approaches for Biomaterials Design*, Society for Biomaterials 2013 Annual Meeting, April 2013, Boston MA
11. 'Theranostics' Sanofi Research & Development Center, December, 2012, Vitry, FRANCE
12. "Tissue Engineering Strategies to Mimic Native Hierarchical Structural Organization and Phenotype" L'Oreal Research and Development Center, December, 2012, Aulnay-sous-bois, FRANCE
13. Workshop on Nanomedicine, December, 2012, Santiago de Compostela, SPAIN
14. Advanced Energy Consortium All Projects Review, November 2012, Houston TX

15. Boston University Goldman Dental School, Dept. of Molecular and Cell Biology Seminar Series, October 2012, Boston MA
16. CrEM Seminar (Center for Regenerative Medicine), Boston University School of Medicine, October 2012, Boston MA
17. Boston University Women's Guild Lecture, October 2012, Boston MA
18. Developing More Predictive *In Vitro* Models. *Cutting Edge Advancements in In Vitro Models to Mitigate Toxicity*, September 2012, Boston MA
19. XXI International Materials Research Congress (Sponsored by Mexican Materials Research Society (MRS-Mexico), Materials Research Society (MRS), and NACE International Section Mexico), *Symposium on Novel Characterization Methods for Biological Systems*, August, 2012, Cancun, MEXICO
20. Invited Lecturer, NSF Summer Institute Short Course on "Materiomics – Merging Biology and Engineering in Multiscale Structures and Materials", MIT, May 30 – June 1, 2012, Cambridge MA
21. Advanced Energy Consortium All Projects Review, May 2012, Cambridge MA
22. Boston University, Departmental Seminar, Dept. of Physiology and Biophysics, May 2012, Boston MA
23. University of Michigan, School of Dentistry, Tissue Engineering and Regeneration Training Grant (TEAM) Seminar Series, March 2012, Ann Arbor MI
24. Brandeis University, Department of Chemistry Seminar Series, January 2012, Waltham MA
25. Multidisciplinary Research Mini-Symposium "Nano and Metabolic Routes to Cardiovascular Disease", Boston University School of Medicine, November 2011, Boston MA
26. Invited Speaker, Minisymposium on "Cell-Matrix Interactions within Tumors and Normal Tissue" at the 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Boston, MA, August 30-September 3, 2011.
27. Plenary Speaker, 2011 Northeast Bioengineering Conference, Rensselaer Polytechnic Institute, April 2011, Troy NY
28. Experimental Biology Annual Meeting, Biomedical Engineering Joint Symposium with American Physiological Society: "Stem Cell Tissue Engineering Symposium", April 2011, Washington DC
29. Tufts University, BME Department Seminar Series, February 2011, Medford MA
30. Sigma Xi Lecture, Natick Soldier Research, Development & Engineering Center, January 2011, Natick MA
31. Rutgers University, BME Department Seminar Series, December 2010, Piscataway NJ
32. Art Coury Symposium, December 2010, Orlando FL
33. National Institutes of Standards and Technology (NIST), Polymers Division Seminar Series, November 2010, Gaithersburg MD
34. University of Pittsburgh, Department of Bioengineering Seminar Series, November 2010, Pittsburgh PA

35. Smart Polymer Systems 2010 Conference, May 2010, Atlanta GA
36. DISCOVERY: Annual Education Program of the Massachusetts Medical Society, May 2010, Boston MA
37. Boston University, Sargent College Research Seminar Series, April 2010, Boston MA
38. Boston University School of Medicine, Whitaker Cardiovascular Institute Seminar Series, April 2009, Boston MA
39. University of Texas-Austin, Department of Biomedical Engineering Seminar Series, April 2009, Austin TX
40. Vascular Matrix Biology and Bioengineering Workshop, NAVBO (North American Vascular Biology Organization), March 2009, Whistler Village, British Columbia, CANADA
41. Gordon Research Conference on Biointerface Science, September 2008, Aussois, FRANCE
42. Gordon Research Conference on Surfaces With Spatial Property Gradients, Waterville Valley Resort, July 2008, Waterville Valley, NH
43. Department of Anatomy and Cell Biology, McGill University, June 2008, Montreal, CANADA
44. 13th semi-annual workshop of the NIST Combinatorial Methods Center (NCCM-13) “Advances in Library Fabrication”, April 2008, NIST, Gaithersburg, MD
45. Emerging Technology Seminar in BU Nanotechnology in Medicine: From Diagnostics to Therapeutics, Boston University, April 2008, Boston, MA
46. Symposium LL: Bioinspired Polymer Gels and Networks, *Materials Research Society Fall Annual Meeting*, November 2007, Boston, MA
47. Center for Talented Youth Science and Technology Program (The Johns Hopkins University), *Explorations in Nanoscale Science and Engineering*, Boston University, November 2007, Boston, MA
48. Dept. of Biomedical Engineering, Georgia Institute of Technology, October 2007, Atlanta, GA
49. Gordon Research Conference on Elastin and Elastic Fibers, University of New England, July 2007, Biddeford, ME
50. Tokyo Women’s Medical University, July 2007, Tokyo, JAPAN
51. Institute of Biomaterials, Tokyo Women’s Medical University, July 2007, Tokyo, JAPAN
52. “Polymers in Medicine and Biology,” Polymer Division, American Chemical Society, June 2007, Santa Rosa, CA
53. Dept. of Materials Science and Engineering, University of Delaware, May 2007, Newark, DE
54. Dept. of Biomedical Engineering, Tufts University, April 2007, Medford, MA
55. Dept of Chemistry, University of Calgary, December 2006, Calgary, CANADA
56. NHLBI Nanobiotechnology Impact on Hematology, September 2006, Bethesda, MD

57. Workshop and Summer School in Cell and Tissue Engineering, July 1-8, 2006, Belgrade, SERBIA
58. Keynote Speaker, Biophysical Chemistry Division, Halifax CSC Meeting 89th Canadian Chemistry Conference and Exhibition, May 2006, Halifax, Nova Scotia, CANADA
59. International Workshop: Bridging Nanoscale Forces and Interfacial Phenomena to the Macroscopic World, Celebrating the work of Jacob Israelachvili, May 2006, Cancun, MEXICO
60. ALZA Corporation, December, 2005, Mountain View, CA
61. Twenty Fifth New England Complex Fluids Workshop, December, 2005, Harvard University, Cambridge, MA
62. Symposium on Functional Solid-Supported Bimolecular Lipid Membranes, sponsored by Max Planck Institute in Polymer Science, September, 2005, Schloß Ringberg, Bavaria, GERMANY
63. Gordon Research Conference in Biomaterials, July, 2005, Plymouth, NH
64. Mid-Atlantic Regional Meeting (MARM 2005), Polymeric Biomaterials, May, 2005, Rutgers University, Piscataway, NJ
65. Dupont Young Professor Award Lecture, April, 2005, Wilmington, DE
66. University of Virginia, Department of Biomedical Engineering, April, 2005, Charlottesville, VA
67. Duke University, Centers for Biologically Inspired Materials and Material Systems and Biomolecular and Tissue Engineering Seminar Series, April, 2005, Durham, NC
68. MIT, Hatsopoulos Microfluidics Laboratory, March, 2005, Cambridge, MA
69. 3rd Annual Nanomedicine Meeting, co-sponsored by the Canadian Institutes of Health Research and NSERC and NRC, March, 2005, Edmonton, Alberta, CANADA
70. 2nd Max Bergmann Symposium, February, 2005, Dresden, GERMANY
71. AVS Science & Technology, November, 2004, Anaheim, CA
72. Brown University, Biomedical Engineering Seminar Series, November, 2004, Providence RI
73. European Tissue Engineering Society and the Tissue Engineering Society International, October, 2004, Lausanne, SWITZERLAND
74. Polymer Design for Biology, October, 2004, Savannah, GA
75. Clemson University, Chemical Engineering and Bioengineering Seminar Series, September, 2004, Clemson, SC
76. NIH NIAID Nanobiology Strategies for Understanding the Immune System Workshop, June, 2004, Bethesda, MD
77. Wake Forest Medical School, April, 2004, Wake Forest, NC
78. Framingham Heart Study, April, 2004, Framingham, MA
79. CIMIT Forum, Cambridge, MA, March, 2004, Boston, MA
80. ALZA Corporation, March, 2004, Mountain View, CA

81. Montana State University – Complex Biological Systems Seminar Series, October, 2003, Bozeman, MT
82. BioSURF V, September 2003, Zurich, SWITZERLAND
83. German-American Frontiers in Polymer Science, July 2003, Bayreuth, GERMANY
84. ETH Zurich, Department of Materials, BioInterface Group, July 2003, Zurich, SWITZERLAND
85. International Symposium on Interface Biology of Implants, May 2003, Rostock, GERMANY
86. MIT – Program in Polymer Science and Technology, May 2003, Cambridge, MA
87. Glaxo-Smith-Kline, April 2003, Philadelphia, PA
88. IEEE Engineering in Medicine and Biology Society – Biomedical Engineering Society Joint Meeting (EMBS-BMES), “Biosurface Engineering: Sensing and Biomimicry,” October 2002, Houston, TX.
89. American Chemical Society, Division of Polymer Chemistry, 5th International Symposium on Biorelated Polymers, August 2002, Boston, MA.
90. Gordon Research Conference on Signal Transduction by Engineered Extracellular Matrices, June 2002, New London, CT.
91. Johnson and Johnson Center for Biomaterials & Advanced Technologies Seminar Series, May 2002, Somerville, NJ.
92. University of Massachusetts – Amherst Department of Polymer Science & Engineering, October 2001, Amherst, MA
93. Boston University Biomolecular Pharmacology Seminar Series, September 2001, Boston, MA.
94. Alza Corporation, June 2001, Menlo Park, CA.
95. 6th New England Quarterly Workshop on Complex Fluids, March 2001, Boston, MA.
96. University of Laval, CERSIM (Centre de Recherche en Sciences et Ingenierie des Macromolecules), March 2001, Quebec City, Quebec, CANADA.
97. University of Massachusetts Medical School, Program in Biomedical Engineering Seminar Series, November 2000, Worcester, MA.
98. Society of Engineering Science, October 2000, Columbia, SC.
99. Boston University Dental School, Dept. of Molecular and Cell Biology Seminar Series, September 2000, Boston, MA.
100. 3rd Annual Technology Law Symposium, Panelist, Biotech Materials and Medical Devices, February 2000, Boston University, Boston, MA.
101. Shriners Hospital, Center for Engineering in Medicine Seminar Series, November 1999, Boston, MA.
102. 3M Corporation, October 1999, Saint Paul, MN.
103. Massachusetts Institute of Technology, Department of Mechanical Engineering, Mechanics and Materials Seminar, April 1998, Cambridge, MA.
104. Tufts University, Department of Mechanical Engineering, March 1998, Medford, MA.

105. International Symposium on the Mechanics of Plants, Animals and Their Environments: Integrative Perspectives, January 1998, Santa Barbara, CA.
106. Rush Medical Center, Department of Molecular Biophysics and Physiology, May 1997, Chicago, IL.
107. American Chemical Society, Division of Polymer Chemistry, Interdisciplinary Workshop on Biomedical Polymers: November 1996, Santa Barbara, CA.

ABSTRACTS/ MEETING PRESENTATIONS (ugrad, grad, postdoc, staff)

1. Lee, E., H.H. Bendre, M.K. Robinson, and J.Y. Wong “Modulating alignment and contractile protein expression in vascular smooth muscle cell sheets using microcontact printing and mechanical conditioning,” *Northeast Bioengineering Conference (NEBEC)*, April 25-27, 2014, Boston MA (poster)
2. Lee, E.L., H.H. Bendre, M.K. Robinson, and J.Y. Wong “Controlling cellular orientation using microcontact printing and mechanical conditioning to modulate contractile protein expression,” *Society for Biomaterials*, April 16-19, 2014, Denver, CO (poster)
3. Laura Blaha, Chentian Zhang, Byungwoo Ryu, Rhoda Alani, Mario Cabodi, Joyce Wong, “A Microfluidic Platform to Examine Soluble Signaling in the Metastasis Microenvironment,” *Cellular Heterogeneity in the Tumor Microenvironment (Presented in conjunction with the AACR Tumor Microenvironment Working Group)*, February 26-March 1, 2014, San Diego, CA (poster)
4. Park, Y., S. Kim, T. Pham, N. L. Jeon, R. Cleveland, J. Nagy, and J.Y. Wong, “Controlled rupture of drug-loaded microbubbles in blood vessels on a chip,” *AIChE Annual Meeting*, November 2013, San Francisco CA (oral)
5. Kim, J.J., C. Yang, and J.Y. Wong “How curvature is perceived by a cell as a three dimensional cue?” *Biomedical Engineering Society (BMES) Annual Fall Meeting*, September 2013, Seattle WA (poster)
6. Park, Y., T. Pham, S. Kim, J. Kim, W. Park, R. Cleveland, N. L. Jeon, J. Nagy, and J.Y. Wong, “Controlled rupture of drug-encapsulated ultrasound contrast agents in blood vessels on a chip,” *Biomedical Engineering Society (BMES) Annual Fall Meeting*, September 2013, Seattle WA (oral)
7. Zhang, C., E. Shenk, L. Blaha, B. Ryu, R. Alani, M. Cabodi, and J.Y. Wong “A novel engineered platform to evaluate cancer metastasis,” *Biomedical Engineering Society (BMES) Annual Fall Meeting*, September 2013, Seattle WA (poster)
8. Lee, E. and J.Y. Wong “Controlling cell orientation and mechanical conditioning to create anisotropically aligned tissue engineered blood vessels for atherosclerosis,” *Gordon Research Conference in Biomaterials and Tissue Engineering*, July-Aug 2013, Plymouth NH (poster)
9. Yao, R. and J.Y. Wong “The effects of mechanical stimulation on controlling and maintaining marrow stromal cell differentiation into vascular smooth muscle cells”, *Society for Biomaterials 37th Annual Meeting*, April 2013, Boston, MA. (poster)

10. Lee, E. L., H. H. Bendre., and J.Y. Wong “Cellular orientation control using microcontact printing and mechanical conditioning for tissue engineered blood vessels for atherosclerosis”, *Society for Biomaterials 37th Annual Meeting*, April 2013, Boston, MA. (poster)
11. Backman, D.E., J.Y. Wong, "Biomechanics of Cell Sheets Based Arterial Tissue using a Novel Force Sensor", *Society for Biomaterials 37th Annual Meeting*, April 2013, Boston, MA. (poster)
12. Mohamedi, G., N. A. Hosney, P. Rademeyer, Y. Park, J. Owen, T. Pham, J. Y. Wong, M. Kuimova, E. Stride, “Influence of Fabrication Method on Functional Properties of Microbubble Agents for Theranostic Applications”, *American Chemical Society 245th National Meeting*, April 2013, New Orleans LA (talk)
13. Park, Y., T. Pham, A. Luce, R. Whitaker, B. Amin, R. Cleveland, J. O. Nagy, J. Y. Wong “Controlled rupture of drug-encapsulated ultrasound contrast agent”, *American Chemical Society 245th National Meeting*, April 2013, New Orleans LA (talk)
14. Park, Y., A.C. Luce, R.D. Whitaker, B. Amin, M. Cabodi, R. Nap, I. Szleifer, R.O. Cleveland, J.O. Nagy, and J.Y. Wong "Tunable ultrasound contrast agents: Polymerizable microbubbles", *American Chemical Society 244th National Meeting*, August 2012, Philadelphia, PA.(talk)
15. Yoonjee Park, Adam Luce, Tuan Pham, Ragnhild Whitaker, Bhumica Amin, Carl Beigie, Mario Cabodi, Rikkert Nap, Igal Szleifer, Robin Cleveland, Jon Nagy, Joyce Y. Wong “Drug-encapsulated Tunable Polymerized Shell Ultrasound Contrast Agents,” *Biomedical Engineering Society (BMES) Annual Fall Meeting*, October 2012; Atlanta GA (talk)
16. Yoonjee Park, Tuan Pham, Carl Beigie, Robin Cleveland, Jon O. Nagy and Joyce Y. Wong, “Controlled Rupture of Drug-Encapsulated Ultrasound Contrast Agents,” *American Institute of Chemical Engineers (AIChE) Annual Fall Meeting*, October 2012; Pittsburgh, PA (poster)
17. MA Nugent, OV Sazonova, BC Isenberg, J Herrmann, AD Valentine, KE Derricks, and JY Wong, "Extracellular Matrix-Cell and Cell-Cell Interactions Control Smooth Muscle Cell Response to Substrate Stiffness," *2012 FASEB Research Conference on Smooth Muscle*, Snowmass Village, Colorado, June 2012.
18. Isenberg, B.C., O.V. Sazonova, J. Herrmann, K.L. Lee, C.D. Hartman, A.D. Valentine, J.Y. Wong and M.A. Nugent, "Extracellular matrix presentation modulates vascular smooth muscle cell mechanotransduction," *Biophysical Society 56th Annual Meeting*, February 2012; San Diego, CA (poster)
19. Lin, J.B., B.C. Isenberg, Y. Shen, K. Schorsch, O. V. Sazonova, J.Y. Wong, “Poly(Nisopropylacrylamide) Grafted onto Microtextured Poly(dimethylsiloxane) for Aligned Cell Sheet Engineering,” *TERMIS (Tissue Engineering Regenerative Medicine International Society) North America Meeting*, December 2011; Houston TX (poster)

20. Isenberg, B.C., D.E. Backman, M.E. Kinahan, R. Jesudason, B. Suki, P.J. Stone, E. C. Davis, and J. Y. Wong, “Structural and mechanical properties of patterned cell sheets for arterial tissue engineering,” *TERMIS-NA Meeting*, December 2011; Houston TX (poster)
21. Isenberg, B.C., O.V. Sazonova, J. Herrmann, A.D. Valentine, M.A. Nugent, and J.Y. Wong, "Extracellular matrix presentation modulates vascular smooth muscle cell mechanotransduction," *North American Vascular Biology Organization (NAVBO)*, October 2011; Hyannis, MA (poster)
22. Park, Y., R. Whitaker, V. Mathiyazhagan, R. Nap, I. Szleifer, J. Paulsen, Y.-Q. Song, M. Hurlimann, J.Y. Wong, “Stability of Superparamagnetic Iron Oxide Nanoparticles at Different pH Values: Molecular Theory and Experiment,” *American Institute of Chemical Engineers (AIChE) Annual Fall Meeting*, October 2011; Minneapolis MN (talk)
23. Sazonova, O.V., J. Herrmann, B. C. Isenberg, A. D. Valentine, J. Y. Wong, and M. A. Nugent, “Substrate stiffness regulates vascular smooth muscle cell behavior in an ECM-dependent manner,” *Biomedical Engineering Society Annual Fall Meeting*, October 2011; Hartford CT (talk)
24. Sazonova, O., K. L. Lee, B. C. Isenberg, C. B. Rich, M. A. Nugent, and J. Y. Wong, “Vascular smooth muscle cell behavior is jointly regulated by substrate stiffness and cell-cell interactions,” *Biomedical Engineering Society Annual Fall Meeting*, October 2011; Hartford CT (talk)
25. Williams, C., A. Xie, M. Yamato, T. Okano, and J.Y. Wong, “Layer-by-Layer Control of Complex Tissue Structure Using Patterned Cell Sheets,” *Biomedical Engineering Society Annual Fall Meeting*, October 2011; Hartford CT (poster)
26. Park, Y., B. Amin, A.C. Luce, R.D. Whitaker, M. Cabodi, R. Cleveland, J.O. Nagy, and J.Y. Wong “Stability-Tunable Polymerized Shell Microbubbles,” *Biomedical Engineering Society Annual Fall Meeting*, October 2011; Hartford CT (poster)
27. Williams, C., A. Xie, E. Yi, B. Suki, M. Yamato, T. Okano, and J.Y. Wong, “Control of complex tissue structure in mesenchymal stem cell-based vascular patches” *TERMIS (Tissue Engineering and Regenerative Medicine International Society) North America Annual Conference & Exhibition*, December 2010; Orlando, FL (poster)
28. Sazonova, O.V., K.L. Lee, J.Y. Wong, and M.A. Nugent, "Differential talin and vinculin expression during vascular smooth muscle cell mechanotransduction." *Biomedical Engineering Society Annual Fall Meeting*, October 2010; Austin, TX (poster)
29. Kinahan, M., E. Filippidi, S. Köster, H. Evans, T. Pfohl, D. Kaplan, and J.Y. Wong, “Tunable Silk Fibers: Mimicking Natural Silkworm Processing with Microfluidics,” *Biomedical Engineering Society Annual Fall Meeting*, October 2010; Austin, TX (talk)
30. Paulsen, J., J.Y. Wong, R.D. Whitaker, L. Doerrer, M. Hurlimann, and Y.Q. Song, “MRI of Contrast Agents in Porous Media,” *10th Bologna Conference on Magnetic Resonance in Porous Media (MRPM 10)*, September 2010, Leipzig, Germany (talk)

31. Garamszegi S, Grainger B, Lyubetskaya A, Wong JY, Benson G. “High-throughput gene expression profiling of vascular smooth muscle cells to investigate putative biomarkers controlling cell phenotype,” *6th International Society of Computational Biology Student Council Symposium*. 9 July, 2010, Boston, MA
32. Williams C, Xie A, Emani S., Emani S.M., and Wong J.Y., “Human bone marrow mesenchymal stem cell sheets cultured on thermo-responsive substrates for the development of tissue engineered vascular patches,” *Society Biological Engineering’s Second International Conference on Stem Cell Engineering*, May 2010; Boston, MA (poster)
33. Sazonova, O.V., K.L. Lee, M.A. Nugent, and J.Y. Wong, “Matrix mechanics modulate expression of ECM receptors and contractile markers in VSMCs,” *Biomedical Engineering Society Annual Fall Meeting*, October 2009; Pittsburgh, PA (talk)
34. Kinahan, M.E., E. Filippidi, S. Farboodmanesh, S. Köster, H.M. Evans, T. Pfohl, J. Chen, D.L. Kaplan, and J.Y. Wong. "Multi-scale approaches to silk fiber scaffold design for tissue engineering applications," *Biomedical Engineering Society Fall Meeting*, October 2009, Pittsburgh PA (talk)
35. Isenberg, B.C., P.A. DiMilla, M.L. Walker, S. Kim, and J.Y. Wong. "Durotaxis of vascular smooth muscle cells is a function of substrate stiffness gradient strength," *BMES Annual Fall Meeting*, October 2009, Pittsburgh PA. (poster)
36. Williams, C., X.Q. Brown, E. Bartolak-Suki, H. Ma, A. Chilkoti, and J.Y. Wong. “Controlling vascular smooth muscle cell morphology, organization, and phenotype using micropatterned substrates.” *Biomedical Engineering Society Annual Fall Meeting*, October 2009, Pittsburgh, PA (talk)
37. Williams, C., X.Q. Brown, E. Bartolak-Suki, H. Ma, A. Chilkoti, and J.Y. Wong. “The effects of micropatterning on protein expression in vascular smooth muscle cells.” *Gordon Research Conference: Biomaterials: Biocompatibility/Tissue Engineering*, July 2009, Holderness, NH (poster)
38. Michelle E. Kinahan, Emmanouela Filippidi, Sarah Köster, Heather M. Evans, Thomas Pfohl, David L. Kaplan, Joyce Y. Wong. "Tunable silk fibers: mimicking natural silkworm processing with microfluidics," *Gordon Research Conference for the Physics and Chemistry of Microfluidics*, June 2009, Lucca Italy (poster)
39. Olga Sazonova, Celeste M. Rich, Kristen L. Lee, Joyce Y Wong, and Matthew A Nugent. “Matrix mechanics and cell density modulate integrin and syndecan gene expression in vascular smooth muscle cells,” *Biophysical Society Annual Meeting*, March 2009, Boston MA
40. Matthew L. Walker, David House, Margrit Betke, and Joyce Y. Wong. “Using Automated Cell Tracking Software to Quantifying Durokinesis and Durotaxis in Real Time,” *Biophysical Society Annual Meeting*, March 2009, Boston MA.

41. Olga Sazonova, Matthew A Nugent, and Joyce Y Wong. "Methods for investigating integrin-matrix interactions as a function of matrix mechanics and composition." *Experimental Biology*, April 2008, San Diego, CA
42. Robert Gyurko, Sarah Courtney, Alpdogan Kantarci and Joyce Y. Wong. "Induction of osteoclast differentiation with RANKL-releasing microspheres." *International Association for Dental Research*, July 2008, Toronto, CANADA
43. C. Williams, J. Liao, E.M. Joyce, J.B. Leach, Michael S. Sacks, and J.Y. Wong. "Structural and Mechanical Properties of Decellularized Rabbit Carotid Arteries." *13th Annual Institute of Biological Engineering (IBE) Conference*, Chapel Hill, North Carolina, March 6-9, 2008
44. Wynter J. Duncanson, Michael A. Figa, Kevin Hallock, Samuel Zalipsky, James A. Hamilton and Joyce Y. Wong, "Tethered architecture improves PLA colloid targeting," *Colloidal, Macromolecular & Polyelectrolyte Solutions- Gordon Research Conference*, Feb 2008 (poster); WJD: Recipient of Carl Storm Underrepresented Minority Fellowship
45. Brett C. Isenberg, Yukiko Tsuda, Corin Williams, Michelle Kinahan, Rajiv Jesudason, Bela Suki, Tatsuya Shimizu, Teruo Okano, Joyce Y. Wong. "Cell sheets with defined structural organization for arterial tissue engineering," *Tissue Engineering International & Regenerative Medicine Society Asia-Pacific Chapter Meeting 2007 (TERMIS-AP 2007)*, Tokyo, JAPAN
46. W.J. Duncanson, R.C. Cleveland, and J.Y. Wong, "Development of a Method to Quantify Ultrasound Contrast Agent Performance of Individual Microparticles," *MRS Fall Meeting, poster*, Boston, MA, November 2007
47. B.C. Isenberg, E. Lee, M.E. Kinahan, R. Jesudason, P.J. Stone, B. Suki, and J.Y. Wong, "Structural and Mechanical Properties of Organized Cell Sheets for Arterial Tissue Engineering," *BMES Annual Fall Meeting*, Los Angeles, CA, September 2007
48. C. Williams, E.M. Joyce, J.B. Leach, M.S. Sacks, J. Liao and J.Y. Wong, "Structural Properties Of Extracellular Matrix In Decellularized Rabbit Carotid Arteries," *BMES Fall Meeting*, poster, Los Angeles, CA, September 2007
49. X.Q. Brown, E. Bartolak-Suki, M.L. Walker, V.M. Weaver, and J.Y. Wong, "Substrate Stiffness Enhances the Stimulatory Effect of PDGF on VSMC," *BMES Fall Meeting*, poster, Los Angeles, CA, September 2007
50. E. Bartolak-Suki, X.Q. Brown, and J.Y. Wong "Substrate stiffness influences metabolism of MMPs and collagens by vascular smooth muscle cells," *BMES Annual Fall Meeting*, poster, Los Angeles, CA, September 2007
51. BC Isenberg*, PA DiMilla*, M Walker, SY Kim, JY Wong, "Vascular smooth muscle cell durotaxis depends on substrate stiffness gradient strength", *Vascular Matrix Biology and Bioengineering Workshop* poster, Whistler, British Columbia, CANADA, March 2007.
(* denotes equal contribution)

52. W.J. Duncanson, K. Oum, M.A. Wheatley, and J.Y. Wong, "Development and Characterization of Novel Targeted Lipid-Polymer Microcapsules," *Society for Biomaterials Annual Meeting*, Pittsburgh, PA, April 2006
53. J.B. Leach, S. Koester, T. Pfohl, and J.Y. Wong, "A Visual and Quantitative Analysis of Collagen Self-Assembly Under Microfluidic Hydrodynamic Flow," *Society for Biomaterials Annual Meeting*, Pittsburgh, PA, April 2006
54. S. Koester, JB Leach, T. Pfohl, and J.Y. Wong, "Visualization of flow-aligned type I collagen self-assembly in tunable pH-gradient," *Biophysical Society Annual Meeting*, Salt Lake City, UT, Feb 2006
55. Brown, X.Q., R. Arjoon, and J.Y. Wong, "Substrate Stiffness Modulates Vascular Smooth Muscle Cell Response to PDGF: Involvement of Lipid Rafts", *American Society for Cell Biology 45th annual meeting*, San Francisco CA, Dec 2005, poster
56. J. B. Leach, J. L. Leight, K. R. Johnson, N. Zahir, M. J. Paszek, A. Sieminski, L. Spirio, J. Y. Wong, V. M. Weaver, "Engineered 3D Models to Study Force-Dependent Mammary Morphogenesis and Malignancy," *American Society for Cell Biology 45th annual meeting*, San Francisco CA, December 2005, poster
57. Leach, J.B., S. Koester, T. Pfohl, and J.Y. Wong, "Microaligned collagen matrices: Biomimetic microstructured materials from natural biopolymers," *AICHE (American Institute of Chemical Engineers) Fall Meeting*, Nov 2005
58. Leach, J.B., S. Koester, T. Pfohl, and J.Y. Wong, "Microaligned collagen matrices: Biomimetic microstructured materials from natural biopolymers," *BMES Fall Meeting*, Sept 2005, Baltimore, MD
59. Williams, C., X. Brown, H. Ma, A. Chilkoti, and J.Y. Wong, "Critical Constraints: Regaining Vascular Smooth Muscle Contractility via Microtopographical Cues," *BMES Fall Meeting*, Sept 2005, Baltimore, MD
60. Sarkar, S., J.B. Leach, J.Y. Wong, and T. Desai, "Fabrication of a Highly Organized 3-D Tissue Construct for Vascular Tissue Engineering," *BMES Fall Meeting*, Sept 2005, Baltimore, MD
61. Jacot, J. and J.Y. Wong, "An endothelial injury front stimulates smooth muscle cell proliferation in highly localized regions," *BMES Fall Meeting*, Sept 2005, Baltimore, MD
62. Jacot, J., J.L. Jackel, S.F. Koester, and J.Y. Wong, "A photolithographic method for patterning soft polyacrylamide to enhance smooth muscle cell elongation," *AVS Science & Technology Fall Meeting*, Boston MA, November 2005
63. K.A. Burridge, M. Figa, and J.Y. Wong, "Micropatterned Substrate Screening under Shear Flow: Direct Comparison of Receptor-Ligand Binding," *Gordon Research Conference, Organic Thin Films*, July 10-15, 2005, Newport, RI, poster.

64. X.Q. Brown and J.Y. Wong, (December, 2004) "Substrate Stiffness Enhances the Stimulatory Effect of PDGF on VSMC," *American Society for Cell Biology 44th annual meeting*, Washington DC
65. C. Williams, X.Q. Brown and J.Y. Wong, (October, 2004) "Controlling Vascular Smooth Muscle Cell Phenotype Through Substrate Topography", *BEACON Bionanotechnology Symposium and Fair*, Hartford, CT.
66. C. Williams, X.Q. Brown and J.Y. Wong, (October, 2004) "Controlling Vascular Smooth Muscle Cell Phenotype Through Substrate Topography", *North East Smooth Muscle Society 12th annual meeting*, Worcester, MA.
67. X.Q. Brown, M. Dadhania and J.Y. Wong, (October, 2004) "Vessel Stiffness Is a Modulator of VSMC Behavior", *North East Smooth Muscle Society 12th Annual Meeting*, Worcester MA
68. X.Q. Brown, K. Ookawa, and J.Y. Wong (November 2004) "Evaluation of PDMS as a Model Substrate to Investigate Effects of Substrate Compliance on Cell Behavior: Interplay of Surface Chemistry and Substrate Mechanics," *AVS Science & Technology*, Anaheim, CA.
69. J.B. Leach and J.Y. Wong (November 2004) "Crosslinked Elastin Biomaterials for Vascular Tissue Engineering." (Poster) *AVS Science & Technology*, Anaheim, CA.
70. K.A. Burridge, M.A. Figa, and J.Y. Wong (November 2004) "Micropatterned Substrate Screening under Shear Flow (MiSSUS): Direct Comparison of Receptor-ligand Binding," (Poster) *AVS Science & Technology*, Anaheim, CA.
71. J.B. Leach and J.Y. Wong (November 2004) "Crosslinked Alpha-Elastin Hydrogel Biomaterials as Mimics of the Elastomeric and Biofunctional Properties of Native Vascular Tissue." *American Institute of Chemical Engineers (AIChE)*, Austin, TX.
72. A. Engler, L. Richert, J. Wong, C. Picart, and D. Discher (October 2004) "Elasticity of Tissues, Gels, and Multilayer Films: Correlating Substrate Stiffness and Cell Adhesion," *Biomedical Engineering Society*, Philadelphia, PA.
73. K.A. Burridge, M.A. Figa, and J.Y. Wong (October 2004) "Micropatterned Substrate Screening under Shear Flow: Direct Comparison of Receptor-Ligand Binding," *Biomedical Engineering Society*, poster, Philadelphia, PA.
74. S. Dianis, J. Jacot, and J.Y. Wong (October 2004) "A Simple Microindentation System for Measuring Soft, Thin Hydrogels and Tissues," *Biomedical Engineering Society*, Philadelphia, PA.
75. J. Leach and J.Y. Wong (October 2004) "Alpha-Elastin Scaffolds to Mimic the Elastomeric and Biofunctional Properties of Vascular Tissue," *Biomedical Engineering Society*, Philadelphia, PA.
76. J. Leach, J. Wolinsky, and J.Y. Wong (July 2004) "Crosslinked Elastin Biomaterials for Vascular Tissue Engineering," *Elastin 2004*, poster, University of Manchester, Manchester, ENGLAND.

77. J. Jacot, S. Dianis, and J.Y. Wong (June 2004) “Substrate Mechanics and VSMC Functional Phenotype,” *Gordon Research Conference: Signal Transduction by Engineered Extracellular Matrices*, poster, Bates College, Lewiston, ME.
78. S. Sarkar, P. Rourke, T.A. Desai, and J.Y. Wong (May 2004) “Vascular Tissue Engineering: Effect of Scaffold Microtopography on Vascular Smooth Muscle Cell Response,” *Society for Biomaterials*, Sydney, AUSTRALIA.
79. K.A. Burridge, M.A. Figa, and J.Y. Wong (Feb 2004) “Microfluidic Patterning of Lipid Bilayers for High-Throughput Screening of Targeted Drug Delivery Carrier Surface Properties,” *New England Pharmacology Meeting*, poster, Portland, ME.
80. J.Y. Wong (December 2003) “Bioengineered Polymeric Substrata to Probe Vascular Smooth Muscle Cell Behavior,” *Materials Research Society*, Boston, MA.
81. S. Sarkar, P. Rourke, T.A. Desai, and J.Y. Wong (December 2003) “Vascular Tissue Engineering: Effects of Scaffold Architecture on Smooth Muscle Cell Response,” *Materials Research Society*, Boston, MA.
82. K.A. Burridge, S. Zalipsky, and J.Y. Wong (October 2003) “Effect of polyethylene glycol tether length on targeted binding to lipid bilayers under flow,” *Biomedical Engineering Society*, Nashville, TN.
83. S. Sarkar, P. Rourke, T.A. Desai, and J.Y. Wong (October 2003) “Effects of Smooth Muscle Cell Orientation on Tissue Construct Properties,” *Biomedical Engineering Society*, Nashville, TN.
84. X. Q. Brown, K. Ookawa-Chinzei, and J.Y. Wong (October 2003) “Modulation of VSMC Behavior by Tuning Substrate Compliance,” *Biomedical Engineering Society*, Nashville, TN.
85. X.Q. Brown, C.T. Brown, and J.Y. Wong (July 2003) “Functional study of the Fibronectin KNEED Sequence,” *17th Symposium of the Protein Society*, Boston, MA.
86. S.K. Kim, N. Zaari, P. Rajagopalan, and J.Y. Wong (July 2003) “Microgradient mechanically-compliant polyacrylamide gels to probe cell response,” *poster at Gordon Research Conference in Biomaterials and Biocompatibility*, Tilton, NH.
87. N. Zaari, P. Rajagopalan, S.K. Kim, and J.Y. Wong (March 2003) “Microgradient mechanically-compliant polyacrylamide gels to probe cell response,” *American Chemical Society, Division of Polymer Science*, New Orleans, LA.
88. C.T. Brown, Z. Weng, H. Zhang, and J. Y. Wong (October 2002) “Mutational Analysis Verifies That "KNEED" Sequence of Fibronectin Participates in Cell-Substrate Interactions,” *IEEE Engineering in Medicine and Biology Society – Biomedical Engineering Society (EMBS-BMES)*, Houston, TX.
89. P. Rajagopalan, W. A. Marganski, M. Dembo, and J. Y. Wong (October 2002) “Traction Stresses and Motility of Fibroblasts Are Different on RGD- and Fibronectin-Modified Elastic Substrata,” *IEEE Engineering in Medicine and Biology Society – Biomedical Engineering Society (EMBS-BMES)*, Houston, TX.

90. C.T. Brown, Z. Weng, H. Zhang, and J. Y. Wong (August 2002) “Mutational analysis verifies that “kneed” sequence of fibronectin participates in cell-substrate interactions,” *American Chemical Society, Division of Polymer Chemistry*, Boston, MA.
91. P. Rajagopalan, W. A. Marganski, M. Dembo, and J. Y. Wong (August 2002) “Interaction of fibroblasts with fibronectin- and RGD-modified polyacrylamide hydrogels,” *American Chemical Society, Division of Polymer Chemistry*, Boston, MA.
92. C.T. Brown, S. Kim, S. Moll, Z. Weng, and J.Y. Wong, (April 2002) “Novel fibronectin peptides for cell-substrate interactions: A combined bioinformatics and cell-culture approach.” *Society for Biomaterials*, Tampa, FL.
93. C. Gaudet, M. Hennessy, W. Marganski, M. Dembo, J.Y. Wong, (April 2002). “Effect of collagen concentration on cell-generated traction stresses.” *Society for Biomaterials*, Tampa, FL.
94. Rajagopalan, P., W.A. Marganski, M. Dembo, and J.Y. Wong (November 2001). “Cell morphology and traction for fibroblast cells on fibronectin versus RGD modified hydrogels.” *Materials Research Society*, Boston, MA.
95. Hennessy, M., W.A. Marganski, M. Dembo, and J.Y. Wong (October 2001). “Effect of substrate adhesivity on cell-generated traction stresses.” *Biomedical Engineering Society*, Raleigh-Durham, NC.
96. S. Kim, S. Moll, Z. Weng, and J.Y. Wong (October 2001). “Fibronectin fragments decrease fibroblasts spreading: Identification of peptides by Bioinformatics.” *Biomedical Engineering Society*, Raleigh-Durham, NC.
97. J.Y. Wong (October 2001). “Effect of polymer tether length on receptor-ligand bond formation.” *Biomedical Engineering Society*, Raleigh-Durham, NC.
98. Moll, S. K., S. K. Kim, Z. Weng and J. Y. Wong (June 2001). “Fibronectin fragments decrease fibroblast spreading: Identification of target peptides by sequent alignment analysis.” *Controlled Release Society*, San Diego, CA.
*paper selected as poster pick and given time for a short talk in Biorecognition Track (all contributed papers are posters)
99. Hennessy, M., W. Marganski, M. Dembo and J. Y. Wong (April 2001). “Elastic substratum method to determine effects of cell-substrate adhesivity on cell-generated traction stress.” *American Chemical Society, Division of Colloid and Surface Science*, San Diego, CA.
*student received top poster award in Division of Colloid and Surface Science
100. Hennessy, M., W. Marganski, M. Dembo and J. Wong (February 2001). “Effect of adhesive ligand density on cell-generated traction stresses.” *Biophysical Society*, Boston, MA.
101. Wong, J. and M. Hennessy (2000). “Cell response to surface-modified hydrogel substrates.” *Biomedical Engineering Society*, Seattle, WA.
102. Wong, J., T. Kuhl, J. Israelachvili, N. Mullah, S. Zalipsky, et al. (1999). “Direct measurement of a tethered ligand-receptor interaction potential.” *Biophysical Society*, Baltimore, MD.

103. Seitz, M., J. Wong, C. Park, N. Alcantar and J. Israelachvili (1998). "Tethered supported bilayers from membrane-inserting reactive lipids for direct force measurements." *American Chemical Society*, Dallas, TX.
104. Wong, J., C. Park, M. Seitz and J. Israelachvili (1997). "Structure and interaction forces between soft-supported planar lipid biomembranes." *Materials Research Society*, Boston, MA.
105. Wong, J., D. Takamoto, J. Zasadzinski and J. Israelachvili (1997). "Assembly of membranes onto photolithographic patterned substrates." *American Institute of Chemical Engineers (AIChE)*, Los Angeles, CA.
106. Wong, J., T. Kuhl and J. Israelachvili (1997). "Differences between specific and non-specific cell-cell interactions." *Biomedical Engineering Society*, San Diego, CA.
107. Wong, J., C. Park, M. Seitz and J. Israelachvili (1997). "Direct force measurements between gel-supported planar lipid bilayers." *8th International Conference on Organized Molecular Films (LB8)*, Asilomar, CA.
108. Israelachvili, J., J. Wong and T. Kuhl (1997). "Measurement and control of interaction forces between model membrane surfaces and drug delivery systems." *American Chemical Society*, San Francisco, CA.
109. Wong, J. Y., C. Park, M. Seitz and J. N. Israelachvili (1997). "Gel-supported planar lipid bilayers." *Biophysical Society*, New Orleans, LA.
110. Wong, J. Y., D. Takamoto, J. N. Israelachvili and J. A. Zasadzinski (1996). "Tethered membranes from vesicle adsorption onto patterned surfaces." *Materials Research Society*, Boston, MA.
111. Wong, J. Y., C. Park and J. N. Israelachvili (1995). "Gel-supported planar lipid bilayers." *Materials Research Society*, Boston, MA.
112. Wong, J. Y., C. Park and J. N. Israelachvili (1995). "Biomembranes on polymer cushions: Cytoskeletal models." *Gordon Conference on Complex Fluids*, New London, NH.
113. Wong, J. Y., R. Langer and D. Ingber (1994). "The effect of oxidation state of electrically conducting polymers on cell shape." *Keystone Symposia on Molecular and Cellular Biology (Biology of Physicochemical Interactions at the Cell Surface & Tissue Engineering)*, Taos, NM. *J. Cell. Biochem. Suppl.* 18C: 284.
114. Wong, J. Y., D. Ingber and R. Langer (1993). Electrically conducting polypyrrole thin films as substrates for protein adsorption and cell attachment. *American Institute of Chemical Engineers*, St. Louis, MO.
115. Wong, J. Y., D. Ingber and R. Langer (1993). Electrically conducting polymers as biomaterials. *Gordon Conference on Biocompatibility and Biomaterials*, Tilton, NH.

RESEARCH FUNDING

Current Support:

1. *HCC: Intelligent Tracking Systems that Reason about Group Behavior*
NSF IIS 0910908 (Role: co-PI; PI: M. Betke) (9/1/09 – 8/31/14)
Total Award Amount (Wong): \$528,109
2. *An integrated experimental and computational approach for designing nanoparticles for sensing rock pore structure and fluid composition in reservoir rock*
Advanced Energy Consortium (Role: multi-PI with L. Doerrler and I. Szleifer) (3/1/09 – 9/30/14)
Total Award Amount (Wong): \$ 620,935
3. *Models to predict biomedical performance*
NIH U01 UEB014976A (Role: MPI) (06/01/12-03//31/17)
Total Award Amount (Wong): \$1,063,990
4. *PESO: Engineered platforms to investigate molecular determinants of tumor metastasis to target niche sites*
NSF DMR 1235316 (Role: PI) (09/01/12-08/31/15)
Total Award Amount: \$740,000
5. *High-resolution Imaging of Oil/Water and Nanoparticle Flow in Rock*
Aramco Services Company (Role: Co-PI; PI: B. Goldberg) (12/17/2013 – 12/31/2014)
6. *A Proof-of-Concept Functionalized MR Contrast Agent for the Detection of Early Aortic Valve Calcification: Initial Development and Ex Vivo Experimental Validation*
BWH (Radiology)-BU (COE) Project Concepts at Intersection of Medical Imaging, Image Processing, and Engineering
Role: PI (2014-2016) 2 years of PhD graduate student support
7. *2014 Beckman Scholars Program*
Arnold & Mabel Beckman Foundation
06/01/2014 - 08/31/2017. (Role: Mentor; PI: Thomas D Gilmore)
Total Costs \$115,800

External Funding Raised for Gordon Research Conference (2011):

2011 Biomaterials & Tissue Engineering Gordon Research Conference

- 1) NSF: DMR Biomaterials Program and CBET Biomedical Engineering Program
Award Amount : \$8,000.00
- 2) NIH: R13 NHLBI, NIAMS, NIBIB
Award Amount: \$21,000
- 3) Genzyme
Award Amount: \$5,000
- 4) Covidien
Award Amount: \$10,000

5) Johnson and Johnson (Advanced Technologies and Regenerative Medicine, LLC)

Award Amount: \$5,000

6) Nanoink

Award Amount: \$1,500

7) Cell Press

Award Amount: \$500

Completed Research Support:

1. *Vascular Cell Phenotype on Physiologically-Relevant Bioengineered Substrata*
NIH R01 HL 072900 (Role: PI) (4/1/08 – 5/31/13)
Total Costs: \$1,625,000
2. *Coulter award*
Boston University, Coulter-BU BME Translational Partnership
(Role: co-PI; PI: A Stucchi) (7/1/12-6/30/13)
Total Award Amount: \$101,908
3. *Measuring tissue stiffness from the vibrations of microspheres*
Boston University, College of Engineering, Dean's Catalyst Award
(Role: co-PI) (5/1/12-4/30/13)
Total Award Amount: \$40,000
4. *Vascular cell phenotype on physiologically relevant bioengineered substrata (Administrative Supplement)*
NIH/NHLBI (Role: PI) (7/15/08 – 6/30/12)
Total Costs: \$410,964
5. *Development of Tissue Engineering Solutions for Pediatric Vascular Surgical Repair and Reconstruction*
The Hartwell Foundation (Role: PI) (4/1/09 – 4/30/12)
Total Costs: \$300,000
6. Boston University Center for Nanoscience and Nanobiotechnology (CNN) Nanomedicine Phase I Funding (Role: co-PI; co-PIs: V. Herrerra and N. Ruiz-Opazo)
Bi-functionalized Asymmetric (Janus) Nanoparticles for Endothelial Target-Specific Molecular Imaging and DNA/siRNA Delivery to Detect and Treat Cardiovascular Disease
Amount: \$32,500
7. NIH
Minority Supplement for Graduate Research Assistant
8. American Heart Association
The effect of vascular smooth muscle cell organization on the function of engineered tissue constructs
Predoctoral Fellowship for C. Williams (2007-2010)
9. BU-Bridge Research Grant: Methods Development Grant
Development of a high through-put, lipid biomembrane-based inhibitory small molecule screen aimed at modulating EGF binding to EGFR for cancer therapy
(PI: R. Spanjaard, BU MED) Role: co-PI (Other co-PIs: R. Georgiadis (BU/Chem))
10. National Science Foundation
"A multi-scale approach to understanding the mechanical and biochemical behavior of

tissue-engineered blood vessels”

(PI: KY Zhang; Role: Co-PI) (6/01/07-5/31/09)

11. Department of Defense Era of Hope Scholar Award (4/1/05 – 3/31/09)
A Physico-Computational Perspective of Breast Cancer Pathogenesis and Treatment Response
(PI: V.M. Weaver, U Penn; subcontract: J.Y. Wong)
Total Costs for J.Y. Wong: \$248,255
12. Dupont Corporation (2004-2006; no-cost extension)
Young Professor Award
(PI: J.Y. Wong) Total Costs: \$75,000
13. The Wallace H. Coulter Translational Partners Grant Program at Boston University
A Novel Diagnostics Tool for Early Detection of Vulnerable Plaque
(PI: JY Wong with J. Hamilton) (04/01/07-03/31/08)
14. National Institutes of Health (NHLBI) R01 HL072900-01A1 (9/01/03-8/31/07)
Bioengineered Substrata to Probe Cellular Behavior
(PI: J.Y. Wong) Total Costs: \$1,292,000
15. NIH/NHLBI R01 HL072900
Supplement: Graduate Research Assistant Award
(05/01/2005 - 08/31/2007)
Total Costs: \$112,877
16. *High-throughput gene expression profiling of vascular smooth muscle cell phenotypes associated with restenosis*
Source: MGH Microarray Expression Profiling Proposal: Supplement to NIH/NHLBI
Total Costs: \$5400
17. NASA NAG 9-1558 (12/01/03-9/30/06)
Novel Microstructures for Vascular Tissue Engineering
(PI: J.Y. Wong)
18. National Science Foundation CAREER (2005)
Research Experiences for Undergraduates Supplement
(PI: J.Y. Wong) Total Costs: \$3,000
19. National Science Foundation CAREER Supplement (Matching Funds)
(PI: J.Y. Wong) Total Costs: \$25,000
20. Boston University Special Program for Research Initiation Grants (SPRInG) Award (2004)
Development of an Integrated Experimental and Computational Platform to Probe Endothelium-induced Control of Cell Cycle and Apoptosis in Smooth Muscle
(PI: J.Y. Wong) Total Costs: \$23,500

21. ALZA Corporation Research Grant (12/1/02-12/31/04)
Peptide and Protein Delivery: Towards increasing bioavailability through enhancing specific ligand-receptor interactions
(PI: J.Y. Wong) Total Costs: \$35,000/yr
22. Whitaker Foundation Transitional Funding Award TF-02-0026 (3/1/03-2/29/04)
Hydrogel Scaffolds to Probe Vascular Smooth Muscle Cell Phenotype for Vascular Tissue Engineering (PI: J.Y. Wong) Total Costs: \$69,292
23. B.U. Community Technology Fund, Technology Development Award (2/1/03-6/30/04)
KNEED Peptide as a Potential Anti-Tumorigenic and Anti-Metastatic Agent
(PI: J.Y. Wong) Total Costs: \$62,000
24. NSF (BES) CAREER Award BES-9985338 (05/01/00-04/30/04)
Integrated Research & Educational Program in Cellular Mechanics in Biomedical Eng
(PI: J. Y. Wong) Total Costs: \$50,000/yr
Supplements (2000-2004)
Research Experience for Undergraduate Supplements (\$12,000 or \$6000/yr)
Matching Funds (\$25,000/yr)
25. Boston University Provost Innovation Award (06/01/01-05/31/02)
Polymer Tethers for Targeted Drug Delivery Systems
(PI: J. Y. Wong) Total Costs: \$25,000
26. ALZA Corporation Research Grant (11/01/01-10/31/02)
Effect of Ligand Density and Affinity on Targeted Liposome Binding
(PI: J. Y. Wong) Total Costs: \$29,000
27. Whitaker Foundation Biomedical Eng Research Grant RG-98-0506 (09/01/99-08/31/02)
Quantitative Analysis of Traction Forces of Cells on Biomaterial Scaffolds
(PI: J. Y. Wong) Total Costs: \$209,998
28. 3M Corporation, 2001
Nontenured Faculty Award
(PI: J.Y. Wong) Total Costs: \$12,000
29. 3M Corporation, 2000
Nontenured Faculty Award
(PI: J.Y. Wong) Total Costs: \$12,000