THE UNIVERSITY OF TEXAS AT AUSTIN
Cockrell School of Engineering
Standard Resume

FULL NAME: Aaron B. Baker **TITLE:** Associate Professor
DEPARTMENT: Biomedical Engineering
EID: ab39486

EDUCATION:

2010 Postdoctoral Fellow/Associate, Center for Biomedical Engineering, Massachusetts Institute of Technology, Cambridge, MA
2006 Ph.D. in Medical Engineering and Medical Physics, Massachusetts Institute of Technology-Harvard Medical School, Cambridge, MA
2002 S.M. in Biological Engineering, Massachusetts Institute of Technology, Cambridge, MA
1999 M.S.E. in Bioengineering, University of Washington, Seattle, WA
1999 B.S.E. in Bioengineering, University of Washington, Seattle, WA

CURRENT AND PREVIOUS ACADEMIC POSITIONS:

2015-pres. Associate Professor and Fellow of the Marion E. Forsman Centennial Professorship in Engineering, Department of Biomedical Engineering, University of Texas at Austin, Austin, TX
2010-2015 Assistant Professor, Department of Biomedical Engineering, University of Texas at Austin, Austin, TX

OTHER PROFESSIONAL EXPERIENCE:

2012-2014 Associate Scientific Advisor, *Science Translational Medicine*
2010-pres. Peer Reviewer for *Annals of Biomedical Engineering, Acta Biomaterialia, Atherosclerosis, Biomaterials, Circulation, Circulation Research, Journal of Mechanics in Medicine and Biology, Journal of Biomedical Materials Research, Journal of Molecular and Cellular Cardiology, Journal of Vascular Research, Lab-on-a-Chip, Proceedings of the National Academy of Sciences, Scientific Reports, Vascular Medicine, Nature Methods.*
2006-2010 Postdoctoral Fellow/Associate, Biomedical Engineering Center, Massachusetts Institute of Technology, Cambridge, MA
1999-2000 Associated Western Universities Intern at the Pacific Northwest National Laboratories (PNNL), Richland WA
1998-1999 Graduate Research Fellow, University of Washington, Seattle, WA

HONORS AND AWARDS:

- Moncrief Grand Challenge Award Winner, Institute for Computational Engineering and Sciences, UT Austin, 2015
- Selected as a one of twenty leading new investigators for the Frontiers in Bioengineering Workshop held at the Georgia Institute of Technology, 2013
- NIH Director's New Innovator Award, National Institutes of Health, 2011
- Nominated as Leading Texas Innovator by the Academy of Medicine, Engineering and Science of Texas (TAMEST), 2011
- 1st Place Award Panhellenic Cardiology, Greece, 2010
- National Scientist Development Grant, American Heart Association, 2010

- 1st Place, Abstract Working Group Award at the European Society of Cardiology, Barcelona, Spain, 2009
- Philip Morris Postdoctoral Research Fellowship, 2007-2009
- Abstract Award at the Annual Conference of the Atherosclerosis Association of Northern Greece, Thessaloniki, Greece, 2009
- Led one of the top 5 teams in the biotechnology track of MIT 100K Business Plan Competition (out of a total of 232 teams), interim CEO for NeoCore Therapeutics, Inc., 2008
- Outstanding Abstract Award at the European Society of Cardiology, Munich, Germany, 2008
- 2nd Place Award in the Merck-BMES Poster Session, Cambridge, MA, 2007
- Whitaker Foundation Graduate Fellowship, 1998 – 2004
- Associated Western Universities Internship, 1999
- Outstanding Poster Award, Undergraduate Research Symposium, University of Washington, 1997
- Mary Gates Research Scholarship, 1997
- Howard Hughes Research Fellowship, 1996

Student Awards (Univ. of Texas):

- Collin Johnson, LifeTechnologies Award for Excellence in Public Health, Nutrition, or Biomedical Sciences Research ($500), UT Austin College of Natural Sciences, 2012
- Collin Johnson, College of Natural Sciences (CNS) Travel Grant ($500) to attend the Atherosclerosis, Thrombosis and Vascular Biology conference in Chicago, IL, 2012
- Collin Johnson, Health Sciences Fellowship from the American Heart Association ($4,000 in summer salary support), 2013
- Collin Johnson, College of Natural Sciences (CNS) Award for Excellence in Public Health, Nutrition, or Biomedical Sciences Research ($500), UT Austin College of Natural Sciences, 2014
- Peter Voyvodic, David Bruton, Jr. Graduate School Fellowship, 2013
- Peter Voyvodic, Best Poster Award from the Cardiovascular Biomaterials Special Interest Group of the Society for Biomaterials, 2014
- Gunjan Singh, Unrestricted Endowed Presidential Scholarship, 2013
- Gunjan Singh, first prize ($300) in the Intellectual Entrepreneurship Pre–Graduate School Internship Poster Competition, 2013
- Somali Chaterji, Atherosclerosis, Thrombosis and Vascular Biology Travel Award for Young Investigators, American Heart Association, 2013
- Anthony Monteforte, University of Texas at Austin Graduate School Fellowship
- Anthony Monteforte, Cockrell School of Engineering Doctoral Fellowship
- Anthony Monteforte, Poster Competition Finalist ($100), Biomaterials Day, Society for Biomaterials Regional Conference, 2014
- Subhamoy Das, Poster Competition Winner ($500), Biomaterials Day, Society for Biomaterials Regional Conference, 2014
- Subhamoy Das, Travel Award ($400), Biomedical Engineering Society Conference, 2014
- Subhamoy Das, Travel Award ($500), Atherosclerosis, Thrombosis and Vascular Biology Travel Award, American Heart Association Conference, 2014
- Adrianne Shearer, National Science Foundation Graduate Fellowship
- Andrew Sligar, UT Engineering Fellowship ($36,000), 2015
- Victoria Le, American Heart Association Graduate Fellowship, 2017 – Present
- Victoria Le, Graduate Dean's Prestigious Fellowship Supplement, 2017

- Jason Lee, Travel Award ($500), North American Vascular Biology Organization (NAVBO) Vascular Biology Conference, 2017
- Daniel Chavarria, National Science Foundation Graduate Fellowship, 2019
- Emily Yang, 1st Place, Science in Plain English Competition, 2019

MEMBERSHIP IN PROFESSIONAL AND HONORARY SOCIETIES:

- American Chemical Society, 2016 – Present
- International Society for Stem Cell Research, 2015 – Present
- Wound Healing Society, 2014 – Present
- American Association for Cancer Research (AACR), 2014 – Present
- Society for Biomaterials, 2013 – Present
- American Association for the Advancement of Science, 2011 – Present
- American Society for Mechanical Engineers, 2011 – Present
- Biomedical Engineering Society, 2010 – Present
- American Society for Biochemistry and Molecular Biology, 2010 – Present
- American Heart Association, 2006 – Present
- American Society for Cell Biology, 2006 – Present
- Sigma Xi, 2006 – Present

UNIVERSITY COMMITTEE ASSIGNMENTS:

Department

- Undergraduate Curriculum Committee, Chair, 2015 – Present
- Undergraduate Curriculum Committee, Member, 2010 – Present
- Graduate Admissions Committee, Member, 2010 – 2017
- UT BME Liaison for Medical Device Action Group, 2010 – 2014
- UT BME Graduate Studies Council Executive Committee, 2011 – 2015
- UT BME Strategic Planning Committee, 2014
- UT BME Grant Review Committee for Texas 4000 Foundation Seed Grants, 2014
- Qualifier Coordinating Committee, 2012 – 2013
- UT BME Grant Review Committee for Texas 4000 Foundation Seed Grants, 2012
- Hiring Committee for Assistant Director Position, 2011
- Chair of the BME Staff Excellence Committee, 2011

Cockrell School of Engineering

- Blue Ribbon Committee on Unified First Year Engineering Curriculum for the Cockrell School of Engineering, 2016 – 2017
- CSE Equal Opportunity in Engineering Committee, 2014 – Present
- CSE Accreditation and Assessment Committee, 2011 – 2014
- Department Chair Review Committee, 2013

College of Natural Sciences

- CNS Catalyst Grant Review Committee, 2017

Dell Medical School

- Full Member, Quantitative Research Program, LIVESTRONG Cancer Institutes, 2017 – Present

University

- Animal Resources Center Faculty Advisory Committee, 2016 – Present

- Reviewer, Undergraduate Research Fellowship (URF) Program, 2014 – Present
- University Internal Review Committee for Johnson & Johnson Women in STEM2D Program, 2019

PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES:

Editorial Boards

- Associate Scientific Advisor, *Science Translational Medicine*, 2012 – 2014

Professional Society/Conference Organization

- Abstract Review, Biomedical Engineering Society Conference, 2019
- Abstract Reviewer, Society for Biomaterials Conference, 2019
- Session Chair, Society for Biomaterials Conference, 2018
- Abstract Reviewer, Society for Biomaterials Conference, 2017
- Track Chair, Tissue Engineering Track, Biomedical Engineering Society Conference, 2017
- Session Chair, Vascular Tissue Engineering, NAVBO Vascular Biology Conference, 2017
- Organizing Chair, Southwest Regional Biomaterial's Day Conference, Society for Biomaterials, 2017
- Session Chair, Biomedical Engineering Society Conference: Mechanobiology of Cell Adhesion II Session, 2016
- Vice Chair, Cardiovascular Biomaterials Special Interest Group of Society for Biomaterials, 2014 – Present
- Abstract Reviewer, Biomedical Engineering Society Conference, 2014
- Abstract Reviewer, Society for Biomaterials Conference, 2014
- Session Chair, Biomedical Engineering Society Conference: Biomaterials Track, Therapeutic and Theranostic Biomaterials Session, 2014
- Session Chair, Biomedical Engineering Society Conference: Cardiovascular Biomechanics Poster Presentation Session, 2014
- Session Chair, Biomedical Engineering Society Conference: Heart Valves and Stents Poster Presentation Session, 2014
- Poster Professor, American Heart Association Scientific Sessions, 2013
- Program Chair, Southern Biomedical Engineering Society Conference: Cell and Tissue Engineering/Cell Adhesion and Biomechanics Track, 2012
- Abstract Reviewer, Southern Biomedical Engineering Society Conference, 2012

Review Committees

- NIH Grant Review Panel for ZRG1 BST-R (02) Bioengineering Sciences and Technologies (BST) Study Section, 2019
- Reviewer for the National Fellowship Committee for Graduate Women in Science, 2019
- Department of Defense, Congressionally Directed Medical Research Program Grant Review Panel, 2019
- Department of Defense, Congressionally Directed Medical Research Program Pre-Application Grant Review Panel, 2019
- Veterans Association Grant Review Panel for Regenerative Rehabilitation, 2019
- NIH Grant Review Panel for Cellular and Molecular Technologies (CMT) Study Section, 2019
- Department of Defense, Congressionally Directed Medical Research Program Grant Review Panel, 2018
- Department of Defense, Congressionally Directed Medical Research Program Pre-Application Grant Review Panel, 2018

- NIH Review Panel for the Arthritis, Connective Tissue and Skin Study Section (ACTS) Study Section, 2018
- NIH Review Panel for the Atherosclerosis and Inflammation of the Cardiovascular System (AICS) Study Section, 2018
- NIH Review Panel for the NIH Support for Conferences and Scientific Meetings (Parent R13) program, 2017
- Department of Defense, Congressionally Directed Medical Research Program Grant Review Panel, 2017
- NIH Review Panel for the Molecular and Cellular Analysis Technology Development for Cancer Research Program (RFA-CA-16-002), 2017
- Grant Reviewer for ETH Zurich Research Commission, 2017
- Thesis Reviewer for Doctoral Students of the Engineering of Industrial Products and Processes program, University of Naples Federico II, Italy, 2017
- Grant Reviewer for University of Nebraska internal grant program, 2017
- Department of Defense, Congressionally Directed Medical Research Program Grant Review Panel, 2015
- American Heart Association Bioengineering/Biosciences Grant Review Panels (two per year), 2013 – Present
- NIH Review Panel for Vascular Interventions/Innovations and Therapeutic Advances (VITA) Program (BAA-NHLBI-CSV-HV-2013-02-JS), 2012
- Grant Reviewer for the Small Business Innovation Research (SBIR) Program for the South Carolina Experimental Program to Stimulate Competitive Research and Institutional Development Awards (EPSCoR/IDeA), 2012
- Journal Peer Review: *Annals of Biomedical Engineering, Acta Biomaterialia, Atherosclerosis, Biomaterials, Circulation, Circulation Research, Journal of Mechanics in Medicine and Biology, Journal of Biomedical Materials Research, Journal of Molecular and Cellular Cardiology, Journal of Vascular Research, Lab-on-a-Chip, Proceedings of the National Academy of Sciences, Scientific Reports.*

COMMUNITY ACTIVITIES/PUBLIC SERVICE:

- Baker AB, faculty mentor at the Women in Biomedical Engineering (WMBE) annual mentoring lunch (SP2015)
- Baker AB, Graduate and Industry Networking (GAIN) event hosted by the Graduate Engineering Council, Judge for Poster Session (SP2014)
- Baker AB, UT BME Graduate Undergraduate Research Union, Judge for Poster Session (SP2013)
- Baker AB, speaker for the Graduate Engineering Council's Lecture Series for graduate students applying to faculty positions (SP2012)
- Baker AB, speaker to new faculty at the Cockrell School of Engineering Orientation (F2012)
- Baker AB, speaker at the TriBeta Biology student honors society (F2012)
- Baker AB, panel speaker at Texas 4000 Cancer Speaker Series (F2012)
- Baker AB, speaker at Texas 4000 Foundation student meeting (F2012)
- Baker AB, speaker at T32 grant seminar for graduate students considering a postdoctoral position (F2012)
- Baker AB, speaker to parents at the UT Family Weekend (F2011)

- Baker AB, speaker for the Graduate Engineering Council's Lecture Series for graduate students applying to faculty positions (SP2011)
- Baker AB, speaker for the Graduate Engineering Council's Lecture Series for graduate students applying to faculty positions (F2011)
- Baker AB, speaker to new faculty at the Cockrell School of Engineering Orientation (F2011)
- Baker AB, speaker at symposium for research collaboration with Dell Children's Medical Center (SP2011)
- Baker AB, speaker at the Beta Mu Epsilon Honor Society meeting (F2010)
- Baker AB, panel speaker at a Graduate/Undergraduate Research Union (GURU) Pre-Graduate Lunch event (F2010)

PUBLICATIONS:

A. Refereed Archival Journal Publications

Under Review/Revision

1. Spencer A, Sligar AD, Chavarria D, Lee J, Choksi D, Patil N, Lee H, Veith AP, Dunn AK, and Baker AB. Biomechanical Regulation of Breast Cancer Metastasis and Progression (*under review/revision*).

Published

1. Lee J, Henderson K, Ochoa M, Maceda P, Yoon E, Samarneh L, Veith A, Wong M, Dunn AK, and Baker AB. Mechanobiological Conditioning of Mesenchymal Stem Cells Enhances Therapeutic Angiogenesis by Inducing a Hybrid Pericyte-Endothelial Phenotype (Preprint; *https://www.biorxiv.org/content/early/2018/12/05/487710.full.pdf+html*).
2. Lee J, Ochoa M, Henderson K, Maceda P, Yoon E, Samarneh L, Wong M, and Baker AB. High Throughput Mechanobiological Screens For Enhancing Pluripotency Markers in Mouse Embryonic Fibroblasts (Preprint; *https://www.biorxiv.org/content/early/2018/11/29/480517.full.pdf+html*).
3. Sligar AD*, Howe G*, Goldman J, Felli P, Karanam V, Smalling RW, and Baker AB. Preclinical Model of Hind Limb Ischemia in Diabetic Rabbits. *Journal of Visualized Experiments*, 148, 2019.
4. Patil N, Le C, Sligar AD, Mei L, Chavarria, Yang EY, and Baker AB. Algal Polysaccharides as Therapeutic Agents for Atherosclerosis. *Frontiers in Cardiovascular Medicine*, 5, 153, 2018.
5. Veith AP, Henderson K, Spencer A, Sligar AD, and Baker AB. Therapeutic Strategies for Enhancing Angiogenesis in Wound Healing. *Adv Drug Deliv Rev*, 2018 (IF = 15.606).
6. Pottera S, Graves J, Drach B, Leahy T, Hammel C, Feng A, Baker AB, and Sacks MS, A Novel Small-Specimen Planar Biaxial Testing System with Full In-Plane Deformation Control. *J Biomech Eng*, 140 (5), 2018 (IF = 2.057).
7. Le C, Lee J, Chaterji S, Spencer A, Liu YL, Kim P, Yeh HC, Kim DH and Baker AB. Syndecan-1 in Mechanosensing of Nanotopological Cues in Engineered Materials. *Biomaterials*, 2018 (IF = 8.402).

8. Hsieh P-L, Rybalko V, Baker AB, Suggs LJ, Farrar RP. Recruitment and therapeutic application of macrophages in skeletal muscles following hind-limb ischemia. *Journal of Vascular Surgery*, 67(6):1908-1920, 2018 (IF = 3.454).
9. Henderson K, Sligar AD, Le V, Lee J, Baker AB. Biomechanical Regulation of Mesenchymal Stem Cells for Cardiovascular Tissue Engineering. *Adv Healthc Mater,* 2017 (in press; IF = 6.27).
10. Monteforte A, Lam B, Sherman M, Henderson K, Sligar AD, Spencer A, Tang B, Dunn AK and Baker AB. Glioblastoma Exosomes for Therapeutic Angiogenesis in Peripheral Ischemia, *Tissue Engineering, Part A*, 2017 (IF = 3.485).
11. Das S, Baker AB. Biomaterials and Nanotherapeutics for Enhancing Skin Wound Healing. *Front Bioeng Biotechnol* 4:82, eCollection, 2016.
12. Das S, Majid M, Baker AB. Syndecan-4 Enhances PDGF-BB Activity in Diabetic Wound Healing. *Acta Biomater* 15;42:56-65, 2016 (IF = 6.025).
13. Das S, Singh G, Majid M, Sherman MB, Mukhopadhyay S, Wright CS, Martin PE, Dunn AK and Baker AB. Syndesome Therapeutics for Enhancing Wound Healing in Diabetes. *Adv Healthc Mater* 5(17):2248-60*,* 2016 (IF = 6.27).
14. Monteforte AJ, Lam B, Das S, Mukhopadhyay S, Wright CS, Martin PE, Dunn AK, Baker AB. Glypican-1 nanoliposomes for potentiating growth factor activity in therapeutic angiogenesis. *Biomaterials* 94:45-56, 2016 (IF = 8.557).
15. Indolfi L, Ligorio M, Ting DT, Xega K, Tzafriri AR, Bersani F, Aceto N, Thapar V, Fuchs BC, Deshpande V, Baker AB, Ferrone CR, Haber DA, Langer R, Clark JW, Edelman ER. A tunable delivery platform to provide local chemotherapy for pancreatic ductal adenocarcinoma. *Biomaterials* 93:71-82, 2016 (IF = 8.557).
16. Das S, Monteforte AJ, Singh G, Majid M, Sherman MB, Dunn AK and Baker AB. Syndecan-4 Enhances Therapeutic Angiogenesis after Hind Limb Ischemia in Mice with Type 2 Diabetes. *Adv Healthc Mater* 5(9):1008-13, 2016 (IF = 6.27).
17. Spencer A, Baker AB. High Throughput Label Free Measurement of Cancer Cell Adhesion Kinetics Under Hemodynamic Flow. *Scientific Reports* 6, doi:10.1038/srep19854, 2016 (IF = 5.578).
18. Spencer A, Spruell C, Nandi S, Wong M, Creixell M, Baker AB. A high-throughput mechanofluidic screening platform for investigating tumor cell adhesion during metastasis. *Lab on a Chip* 16(1):142-152, 2015 (IF = 6.115).
19. Tu C, Das S, Baker AB, Zoldan J, Suggs LJ. Nanoscale strategies: treatment for peripheral vascular disease and critical limb ischemia. *ACS Nano* 9(4):3436-52, 2015 (IF = 12.881).
20. Le V, Johnson CG, Lee J, Baker AB. Murine Model of Femoral Artery Wire Injury with Implantation of a Perivascular Drug Delivery Patch. *Journal of Visualized Experiments* 96, 2015 (IF = 1.325).
21. Lee J, Baker AB. Computational Simulation of Fluid Flow within a Device for Applying Biaxial Strain to Cultured Cells. *Journal of Biomechanical Engineering* 137(5):051006*,* 2015 (IF = 2.085).
22. Voyvodic P, Min D, Liu R, Williams E, Chitalia V, Dunn A, Baker AB: Loss of Syndecan-1 Induces a Pro-Inflammatory Phenotype in Endothelial Cells with a Dysregulated Response

to Atheroprotective Flow. *Journal of Biological Chemistry* 289(14):9547-59, 2014 (IF = 4.651).

23. Chaterji S, Lam C, Ho D, Gaddam N, Baker AB: Syndecan-1 Regulates Vascular Smooth Muscle Cell Phenotype. *PLoS One* 25;9(2):e89824, 2014 (IF = 3.730).
24. Chaterji S, Kim P, Choe SH, Tsui JH, Ho DS, Baker AB, Kim DH: Synergistic Effects of Matrix Nanotopography and Stiffness on Vascular Smooth Muscle Cell Function. *Tissue Engineering, Part A*, 2014 (IF = 4.64).
25. Das S, Singh G, Baker AB: Overcoming Disease-Induced Growth Factor Resistance in Therapeutic Angiogenesis Using Recombinant Co-Receptors Delivered by a Liposomal System. *Biomaterials*, 35(1):196-205, 2014 (IF = 7.604).
26. Koskinas K, Chatzizisis Y, Papafaklis M, Coskun A, Baker AB, Jarolim P, Antoniadis A, Edelman E, Stone P, Feldman C: Synergistic Effect of Local Endothelial Shear Stress and Systemic Hypercholesterolemia on Coronary Atherosclerotic Plaque Progression and Composition in Pigs. *International Journal of Cardiology*, 169(6):394-401, 2013 (IF = 5.509).
27. Lee J, Wong M, Smith Q, Baker AB: A novel system for studying mechanical strain waveform-dependent responses in vascular smooth muscle cells. *Lab on a Chip*, 13(23):4573-82, 2013 (IF = 6.115).
28. Koskinas KC, Sukhova GK, Baker AB, Papafaklis MI, Chatzizisis YS, Coskun AU, Quillard T, Jonas M, Maynard C, Antoniadis AP, Shi P, Libby P, Edelman ER, Feldman CL, Stone PH: Thin-Capped Atheromata with Reduced Collagen Content in Pigs develop in Coronary Arterial Regions Exposed to Persistently Low Endothelial Shear Stress. *Arteriosclerosis, Thrombosis, and Vascular Biology*, 33(7):1494-504, 2013 (IF = 6.368).
29. Spruell C, Baker AB: Analysis of a High-Throughput Cone-and-Plate Apparatus for the Application of Defined Spatiotemporal Flow to Cultured Cells. *Biotechnology and Bioengineering*, 110(6):1782-93, 2013 (IF = 3.946).
30. Voyvodic P, Min D, Baker AB: A Multichannel Dampened Flow System for Studies on Shear Stress-Mediated Mechanotransduction. *Lab on a Chip* 12(18):3322-30, 2012 (IF = 6.620).
31. Indolfi L, Baker AB, Edelman ER: The Role of Scaffold Microarchitecture in the Regulation of Endothelial Cell-Mediated Immunomodulation. *Biomaterials* 33(29):7019-27, 2012 (IF = 7.882).
32. Baker AB, Gibson W, Kolachalama VB, Golumb M, Indolfi L, Spruell C, Zcharia E, Vlodavsky I, Edelman ER: Heparanase Regulates the Thrombosis in Vascular Injury and Stenting. *Journal of American College of Cardiology* 59(17):1551-60, 2012 (IF = 14.292).
33. Jang E, Abawadi H, Watkins M, Edelman ER, Baker AB: Syndecan-4 Proteoliposomes Enhance FGF-2 Induced Proliferation, Migration and Neovascularization of Ischemic Muscle. *Proceedings of the National Academy of Science* USA Jan 31;109(5):1679-84, 2012 (IF = 9.771).
34. Franses JW, Baker AB, Chitalia VC, Edelman ER: Stromal Endothelial Cells Directly Regulate Cancer Phenotype. *Science: Translational Medicine* 3(66):66ra5, 2011 (IF = 3.511).
35. Chatzizisis YS*, Baker AB*, Beigel R, Jonas M, M, Coskun AU, Stone BV, Maynard C, Gerrity RG, Feldman CL, Stone PH, and Edelman ER: Augmented expression and activity

of extracellular matrix-degrading enzymes in regions of low endothelial shear stress colocalize with coronary atheromata with thin fibrous caps in pigs. *Circulation* 123(6):621-30, 2011 (IF = 14.595).

36. Shazly TZ, Baker AB, Naber J, Bon A, Edelman ER: Doping with DOPA enhances the wet adhesion of hydrogel-based surgical sealants. *Journal of Biomedical Materials Research A* 95(4):1159-69, 2010 (IF = 3.044).
37. Baker AB, Chatzizisis YS, Beigel R, Jonas M, Stone BV, Coskun AU, Maynard C, Rogers C, Feldman CL, Stone PH and Edelman ER: Regulation of heparanase expression in coronary artery disease in diabetic, hyperlipidemic swine. *Atherosclerosis* 213(2):436-42, 2010 (IF = 4.086).
38. Koskinas KC, Feldman CL, Chatzizisis YS, Coskun AU, Jonas M, Maynard C, Baker AB, Edelman ER and Stone PH. Natural History of Experimental Coronary Atherosclerosis and Vascular Remodeling In Relation to Endothelial Shear Stress: A Serial, In-Vivo Intravascular Ultrasound Study. *Circulation* 121(19):2092-101, 2010 (IF = 14.595).
39. Koskinas KC, Chatzizisis YS, Baker AB, Edelman ER, Stone PH and Feldman CL: The role of low endothelial shear stress in the conversion of atherosclerotic lesions from stable to unstable plaque. *Current Opinion in Cardiology* 24(6):580-90, 2009 (IF = 2.736).
40. Artzi N, Shazly TZ, Baker AB, Bon A, Edelman ER. Aldehyde-Amine Chemistry Enables Modulated Biosealants with Tissue-Specific Adhesion. *Advanced Materials* 21, 3399–3403, 2009 (IF = 10.880).
41. Mobine HR, Baker AB, Wang L, Wakimoto H, Jacobsen KC, Seidman CE, Seidman JG, and Edelman ER: Pheochromocytoma-Induced Cardiomyopathy is Modulated by the Synergistic Effects of Cell-Secreted Factors. *Circulation: Heart Failure* 2:121-128, 2009 (IF = 4.315).
42. Baker AB, Groothuis A, Jonas M, Ettenson DS, Shazly T, Zcharia E, Vlodavsky I, Seifert P and Edelman ER: Heparanase Alters Arterial Structure, Mechanics and Repair Following Endovascular Stenting in Mice. *Circulation Research* 104(3):380-7, 2009 (IF = 9.504).
43. Chatzizisis YS, Jonas M, Beigel R, Coskun AU, Baker AB, Stone BV, Maynard C, Gerrity RG, Daley W, Edelman ER, Feldman CL, Stone PH: Attenuation of inflammation and expansive remodeling by Valsartan alone or in combination with Simvastatin in high-risk coronary atherosclerotic plaques. *Atherosclerosis* 203(2):387-394, 2009 (IF = 4.086).
44. Baker AB, Ettenson DS, Jonas M, Nugent MA, Iozzo RV, Edelman ER: Endothelial cells provide feedback control for vascular remodeling through a mechanosensitive autocrine TGF-beta signaling pathway. *Circulation Research* 103(3):289-97, 2008 (IF = 9.504).
45. Jonas M, Edelman ER, Groothuis A, Baker AB, Seifert P, and Roger C: Vascular neointimal formation and signaling pathway activation in response to stent injury in insulin-resistant and diabetic animals. *Circulation Research* 97(7):725-733, 2005 (IF = 9.504).
46. Sanders JE, Baker AB, and Golledge SL: Control of in vivo microvessel ingrowth by modulation of biomaterial local architecture and chemistry. *Journal of Biomedical Materials Research* 60(1):36-43, 2002 (IF = 3.044).
47. Baker AB and Sanders JE: Angiogenesis stimulated by mechanical loading. *Microvascular Research*, 60(2):177-181, 2000 (IF = 2.390).

48. Sanders JE, Zachariah SG, Baker AB, Greve JM, and Clinton C: Effects of changes in cadence, prosthetic componentry, and time on interface pressures and shear stresses of three trans-tibial amputees. *Clinical Biomechanics*, 15(9):684-694, 2000 (IF = 2.036).
49. Gerber MA, Schmidt AJ, Delegard CH, Silvers KL, Baker AB, Gano SR, and Thornton BM. Evaluation of the Magnesium Hydroxide Treatment Process for Stabilizing PFP Plutonium/Nitric Acid Solutions. PNNL-13330, Pacific Northwest National Laboratory, Richland, WA, 2000.
50. Baker AB and Sanders JE. Fluid mechanics analysis of a spring-loaded jet injector. *IEEE Transactions on Biomedical Engineering* 46(2):235-42, 1999 (IF = 1.782).
51. Sanders JE, Zachariah SG, Greve JM, Baker AB, and Clinton C: Interface mechanics in lower-limb prosthetics: Experimental measurements and finite element modeling. *Rehabilitation R&D Progress Reports*, pp. 28-29, 1997.

* indicates co-first authorship.

B. Refereed Conference Proceedings

1. Lee J, Henderson K, Armenta-Ochoa M, Veith A, Maceda P, Yoon E, Samarneh L, Wong M, Dunn AK, and Baker AB. Biomechanical Regulation of Stem Cell Differentiation for Vascularized Tissue Regeneration (invited talk). Gulf Coast Vascular Research Consortium, 2019.
2. Mei L, Le V, Voyvodic, Zhao C, Busch D, Stachowiak J, and Baker AB. Mechanical Tension in Syndecan-1 is Regulated by Fluidic Shear Stress and Extracellular Mechanical Cues. Gulf Coast Vascular Research Consortium, 2019.
3. Takematsu E, Chen PC, Srinath S, Sherman M, Stachowiak J, Dunn AK, and Baker AB. Transmembrane SCF with Nanocarriers Enhances Revascularization in Ischemia and Induces CD34-/CD133+ Endothelial Progenitor Cells. Gulf Coast Vascular Research Consortium, 2019.
4. Henderson K, Alsup A, Martinez F, and Baker AB. Biomechanical regulation of adipose-derived stem cell differentiation for myocardial ischemia therapy. Gulf Coast Vascular Research Consortium, 2019.
5. Patil N, Gomez-Hernandez A, Feng X, Zhang F, Tunnell J, Linhardt RJ, and Baker AB. Oral Rhamnan Sulfate Reduces Plasma Cholesterol and Atherosclerotic Plaque Formation in ApoE-/- Mice. Gulf Coast Vascular Research Consortium, 2019.
6. Sligar AD, Lee J, Henderson K, Maceda P, Armenta-Ochoa M, Yoon E, Samarneh L, Veith A, Wong M, Dunn AK, and Baker AB. Combined Mechanical and Pharmacological Conditioning for Enhancing Vascular Regeneration Induced by Mesenchymal Stem Cells. Vascular Biology Conference, 2019.
7. Sligar AD, Lee J, Karanam V, Deb C, Le V, and Baker AB. Shear Stress Meditated Enhancement of Vascular Phenotypes in Human Mesenchymal Stem Cells. Vascular Biology Conference, 2019.
8. Sligar AD, Howe G, Goldman J, Felli P, Gomez-Hernandez A, Karanam V, Smalling RW, and Baker AB. Development of an Advanced Injectable Therapy for Peripheral Ischemia. Vascular Biology Conference, 2019.

9. Takematsu E, Spencer A, Auster J, Chen PC, Graham A, Martin P, and Baker AB. Genome Wide Analysis of Gene Expression Changes in Skin from Patients with Type 2 Diabetes. Vascular Biology Conference, 2019.
10. Takematsu E, Auster J, Singh A, Chen PC, Canga S, Srinath S, DeGroot A, Sherman M, Stachowiak J, Dunn AK, and Baker AB. Transmembrane SCF with Nanocarriers Enhances Revascularization in Ischemia and Induces CD34-/CD133+ Endothelial Progenitor Cells. Vascular Biology Conference, 2019.
11. Mei L, Le V, Voyvodic, Zhao C, Busch D, Stachowiak J, and Baker AB. Mechanical Tension in Syndecan-1 is Regulated by Extracellular Mechanical Cues and Fluidic Shear Stress. Vascular Biology Conference, 2019.
12. Mudloff J, Chavarria D, Baker AB. Effects of Cyclic Mechanical Stretch on MDA-MB-231 Breast Cancer Cell Behavior. BUILDing SCHOLARS Symposium, 2019.
13. Mudloff J, Chavarria D, Baker AB. Effects of Cyclic Mechanical Stretch on MDA-MB-231 Breast Cancer Cell Behavior. Biomedical Engineering Society, 2019 (submitted).
14. Hossain SS, Chavarria D, Baker AB, and Hughes TJR. Patient-specific Analysis Predicts Preferential Accumulation Of VCAM-1 Targeted Nanoparticles Near Atherosclerotic Plaque. AHA Scientific Sessions, 2019.
15. Sligar AD, Howe G, Goldman J, Felli P, Gomez-Hernandez A, Karanam V, Smalling RW, and Baker AB. Development of an Advanced Injectable Therapy for Ischemic Vascular Disease. AHA Scientific Sessions, 2019.
16. Sligar AD, Lee J, Ochoa M, Maceda P, Yoon E, Samarneh L, Wong M, and Baker AB. Mechanical Loading Primes the Development of Pluripotency in Mouse Embryonic Fibroblasts. AHA Scientific Sessions, 2019.
17. Sligar AD, Lee J, Henderson K, Maceda P, Armenta-Ochoa M, Yoon E, Samarneh L, Veith A, Wong M, Dunn AK, and Baker AB. Combined Mechanotransduction And Pharmacological Conditioning For Improved Therapeutic Angiogenesis Of Mesenchymal Stem Cells. AHA Scientific Sessions, 2019.
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21. Yang E, Patil N, Baker AB. Marine Polysaccharides as Novel Therapeutics for Atherosclerosis. National Conference on Undergraduate Research, 2019.
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26. Henderson K, Alsup A, Martinez F, and Baker AB. Biomechanical Regulation of Human Adipose-Derived Stem Cell Differentiation for Cardiac Muscle Regeneration. International Society for Stem Cell Research Conference, 2019.

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32. Henderson K, Pattie N and Baker AB. Biomechanical Regulation of Adipose-Derived Stem Cells Differentiation into Cardiomyocytes. Biomedical Engineering Society Conference, 2018.

33. Veith A, Li X, Lee J, Luan L, Armenta-Ochoa M, Xie C and Baker AB. Flexible Regenerative Nanoelectronics for Advanced Peripheral Neural Interfaces. Biomedical Engineering Society Conference, 2018.

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35. Garcia GA, Spencer A, Baker AB. Mechanical Strain Increases Yap/Taz Nuclear Localization and Chemoresistance in Breast Cancer Cells. Mayo Clinic Symposium:

Scientific Innovation Through Diverse Perspective, 2018.

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53. Monteforte AJ, Lam B, Das S, Mukhopadhyay S, Wright CS, Martin PE, Dunn AK, Baker AB. Glypisomes, a novel construct for enhancing angiogenic response to delivered growth factors, 10th World Biomaterials Congress, 2016 (podium talk).

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57. Das S, Singh G, Monteforte AJ, Martinez ME, Wright C, Martin P, Dunn AK, Baker AB. A Syndecan-4 Based Therapeutic for Effective Revascularization in Peripheral Ischemia in Diabetes. Atherosclerosis, Thrombosis and Vascular Biology Conference, 2015.

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82. Lee J, Wong M, Smith Q, and Baker AB, Graduate and Industry Networking (GAIN) Conference, UT Austin, 2014.
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88. Voyvodic PL, Min D, Liu R, Williams E, Baker AB. Syndecan-1 Regulates Mechanotransduction Pathways in Endothelial Cells in Response to Shear Stress. Frontiers in Bioengineering Workshop, Georgia Institute of Technology, 2013.
89. Indolfi L, Das S, Jang E, Albadawi H, Watkins MT, Edelman ER and Baker AB. Engineering Effective Revascularization Technologies for Ischemia in Diseased States. Massachusetts Institute of Technology (MIT) Sloan Bioinnovations Conference, 2013.
90. Baker AB, Syndecan-1 as a Mediator of Vascular Mechanobiology, Vascular Biology Symposium of Instituto do Coração, Brazil, 2013.

91. Baker AB, Syndecan-1 as a Mediator of Vascular Mechanobiology, Federacao de Sociedades de Biologia Experimental (FeSBE), Brazil, 2013.
92. Singh G, Das S, Baker AB, Analysis of the Angiogenic Pathway in a Diseased State. Intellectual Entrepreneurship Pre-Grad internship poster competition, UT Austin, 2013.
93. Singh G, Das S, Baker AB, Analysis of the Angiogenic Pathway in a Diseased State. Poster Exhibition and Engineering Research Symposium (PEERS), UT Austin, 2013.
94. Lee JD, Baker AB, Local Drug Delivery of Heparanase Inhibitors via a Perivascular Cuff. University of Texas System MD-PhD Retreat, 2013.
95. Das S, Singh G, Baker AB, Alleviation of Disrupted Growth Factor Signaling in a Diabetic Mouse Model. Biomedical Engineering Society Conference, 2013.
96. Baker AB, Reengineering Growth Factor Signaling in Ischemic Disease, Biomaterials Day, Society for Biomaterials Regional Conference, 2013.
97. Voyvodic P, Min D, Liu R, Williams E, Baker AB. Syndecan-1 Regulates Mechanotransduction Pathways in Endothelial Cells in Response to Shear Stress. Biomedical Engineering Society Conference, 2013.
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99. Lee J, Wong M, Smith Q, Baker AB. A Flexible System for Studying Mechanical Stretch Waveform-Mediated Signaling in Vascular Cells. Biomedical Engineering Society Conference, 2013.
100. Chaterji S, Kim P, Lee HJ, Gupta K, Lee J, Baker AB, and Kim DH. The combined effect of matrix stiffness and nanotopography on the regulation of vascular smooth muscle cell function. Biomedical Engineering Society Conference, 2013.
101. Singh G, Das S, Baker AB, Analysis of the Angiogenic Pathway in a Diseased State. Undergraduate Research Symposium, UT Austin, 2013.
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103. Voyvodic PL, Min D, Liu R, Williams E, Baker AB, Syndecan-1 Regulates Shear Stress-induced Mechanotransduction Pathways in Endothelial Cells, Biomedical Engineering Conference, 2012.
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106. Koskinas KC, Chatzizisis YS, Papafaklis MI, Baker AB, Coskun AU, Jonas M, Antoniadis A, Edelman ER, Feldman CL, Stone PH. Incremental effect of hypercholesterolemia on coronary plaque progression and high-risk composition despite similarly low local endothelial shear stress (ESS), European Society of Cardiology Congress, 2012.

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coronary regions of persistently low endothelial shear stress co-localize with thin cap fibroatheromata in pigs, European Society of Cardiology, 2010.

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1. Baker AB. "Role of Proteoglycans in Vascular Mechanotransduction." *Mechanosensitivity in Cells and Tissues,* Vol. 4, Eds. Kamkin A and Kiseleva I, Springer, pgs. 219-236, 2011.
2. Lee J, Mei L, Chavarria D, and Baker AB. "Emulating Biomechanical Environments in Microengineered Systems." *Biomimetic Microengineering,* Ed. Kim HJ, CRC Press (in press).
3. Veith A, Conway D, Mei L, Eskin SG, McIntire LV, and Baker AB. "Effects of Mechanical Forces on Cells and Tissues." *Biomaterials Science: An Introduction to Materials in Medicine,* Eds. Ratner BD, Hoffman AS, Schoen FK, Lemons JE, Associated Press (in press).

D. Reviews

1. Patil N, Le C, Sligar AD, Mei L, Chavarria, Yang EY, and Baker AB. Algal Polysaccharides as Therapeutic Agents for Atherosclerosis. *Frontiers in Cardiovascular Medicine*, 5, 153, 2018.
2. Veith AP, Henderson K, Spencer A, Sligar AD, and Baker AB. Therapeutic Strategies for Enhancing Angiogenesis in Wound Healing. *Adv Drug Deliv Rev*, 2018 (IF = 15.606).
3. Henderson K, Sligar AD, Le V, Lee J, Baker AB. Biomechanical Regulation of Mesenchymal Stem Cells for Cardiovascular Tissue Engineering. *Adv Healthc Mater,* 2017 (IF = 6.27).
4. Das S, Baker AB. Biomaterials and Nanotherapeutics for Enhancing Skin Wound Healing. *Front Bioeng Biotechnol* 4:82, eCollection, 2016.
5. Tu C, Das S, Baker AB, Zoldan J, Suggs LJ. Nanoscale strategies: treatment for peripheral vascular disease and critical limb ischemia. *ACS Nano* 9(4):3436-52, 2015 (IF = 12.881).
6. Konstantinos K, Chatzizisis YS, Baker AB, Edelman ER, Stone PH and Feldman CL: The role of low endothelial shear stress in the conversion of atherosclerotic lesions from stable to unstable plaque. Current Opinion in Cardiology 24(6):580-90, 2009 (IF = 2.736).

E. Editorials

1. Baker AB: Editors' Choice: TRIPpin' on a Fat Cell, Science Translational Medicine, February, February 2013 5:172ec27, 2013 (IF = 10.757).
2. Baker AB: Editors' Choice: Remaking the Brain with Stem Cells. Science Translational Medicine, January 5:168ec10, 2013 (IF = 10.757).
3. Baker AB: Editors' Choice: Warranted Wiretapping: Listening in on Cancer's Conversations. Science Translational Medicine, December 4:164ec224, 2012 (IF = 10.757).

4. Baker AB: Editors' Choice: Calling All Satellite Cells! Science Translational Medicine, November 4:160ec206, 2012 (IF = 10.757).
5. Baker AB: Editors' Choice: Come Together: Antibody Linkers to Combat Hemophilia. Science Translational Medicine, October 4:156ec186, 2012 (IF = 10.757).
6. Baker AB: Editors' Choice: Restoring Rhythm in the Broken Heart. Science Translational Medicine, September 4:152ec168, 2012 (IF = 10.757).
7. Baker AB: Editors' Choice: Cutting the Supply Lines in Cancer and Retinal Disease. Science Translational Medicine, August 4:147ec145, 2012 (IF = 10.757).
8. Baker AB: Editors' Choice: Bridging the Gap for Small-Diameter Vascular Grafts. Science Translational Medicine, July 4:144ec130, 2012 (IF = 10.757).
9. Baker AB: Editors' Choice: A New Trick of the Light: Saving the Heart from Ischemia. Science Translational Medicine, June 4:140ec111, 2012 (IF = 10.757).
10. Baker AB: Editors' Choice: Calming RAGE in Alzheimer's Disease. Science Translational Medicine, May 4:132ec75, 2012 (IF = 10.757).
11. Baker AB: Editors' Choice: To Serve and Neuro-Protect. Science Translational Medicine, May 4:136ec93, 2012 (IF = 10.757).
12. Baker AB: Editors' Choice: T-Cells Gone Bad in Heart Disease. Science Translational Medicine, April 4;4:128ec56, 2012 (IF = 10.757).
13. Baker AB: Editors' Choice: Stent Today, Gone Tomorrow. Science Translational Medicine, March 4:124ec39, 2012 (IF = 10.757).

ORAL PRESENTATIONS:

Invited Talks

1. Baker AB. Biophysical Enhancement of Stem Cell Therapies for Ischemia, Department of Physics, Nonlinear Dynamics Seminar, Austin, TX 2018
2. Baker AB. High Throughput Platforms for Studying Cancer Mechanobiology, Livestrong Cancer Institute Retreat, Austin, TX 2017
3. Baker AB. Biomechanical Regulation of Stem Cell Differentiation for Vascularized Tissue Regeneration, University of Texas at San Antonio, San Antonio, TX 2017
4. Baker AB. The Future is Now: Innovations and Challenges in a New Era of Translational Medicine. AAAS Keynote Speaker at the AAAS Special Event Reception at the Medical Library Association Conference, Austin, TX 2015
5. Baker AB. Reengineering Growth Factor Therapies for Ischemia and Wound Healing, Science Undergraduate Research Group (SURGe), UT Austin, 2014
6. Baker AB. Reengineering Growth Factor Signaling in Ischemic Disease. Lynn W. McCraw Lecture, Department of Kinesiology and Health Education, UT Austin, 2014
7. Baker AB, Advances in Atherosclerosis Prevention and Therapies for Blood Vessel Regrowth, UT Forum, Osher Lifelong Learning Institute, 2013
8. Baker AB, Reengineering Growth Factor Signaling in Ischemic Disease, Biomaterial's Day, Society for Biomaterials Regional Conference, 2013

9. Baker AB, Syndecan-1 as a Mediator of Vascular Mechanobiology, Vascular Biology Symposium of Instituto do Coração, Brazil, 2013
10. Baker AB, Syndecan-1 as a Mediator of Vascular Mechanobiology, Federacao de Sociedades de Biologia Experimental (FeSBE), Brazil, 2013
11. Baker AB, Reengineering Growth Factor Signaling in Ischemic Disease. NIH Director's Pioneer Award Symposium, 2012
12. Voyvodic PL, Min D, Liu R, Williams E, Baker AB, Syndecan-1 Regulates Shear Stress-induced Mechanotransduction Pathways in Endothelial Cells. Biomedical Engineering Society Conference, 2012
13. Baker AB, Heparanase Mediates Arteriothrombosis Following Vascular Injury or Endovascular Stenting. Arteriosclerosis, Thrombosis, and Vascular Biology (ATVB) Scientific Sessions, 2012
14. Baker AB, Living on the Edge: Syndecan-1 as a Mediator of Vascular Mechanobiology, Institute for Cell and Molecular Biology, University of Texas at Austin, 2012
15. Voyvodic PL, Min D, Baker AB, Syndecan-1 Regulates Mechanotransduction from Shear Stress in Endothelial Cells. Southern Biomedical Engineering Conference, MD Anderson, 2012
16. Papafaklis MI, Koskinas KC, Antoniadis AP, Baker AB, Sukhova GK, Coskun AU, Takahashi S, Stone PH, Feldman CL, Edelman ER, Early inhibitory drug effect on the expression of pro-inflammatory and pro-oxidant genes in coronary regions of low endothelial shear stress: an in vivo study in diabetic hyperlipidemic juvenile swine. European Society of Cardiology Congress, 2012
17. Koskinas KC, Chatzizisis YS, Papafaklis MI, Baker AB, Coskun AU, Jonas M, Antoniadis A, Edelman ER. Feldman CL, Stone PH. Incremental effect of hypercholesterolemia on coronary plaque progression and high-risk composition despite similarly low local endothelial shear stress (ESS). European Society of Cardiology Congress, 2012
18. Antoniadis AP, Papafaklis MI, Chatzizisis YS, Sukhova GK, Baker AB, Coskun AU, Takahashi S, Edelman ER, Stone PH, Feldman CL, Adventitial inflammation is associated with thin-cap atheromas and expression of matrix-degrading enzymes and occurs in coronary regions exposed to low endothelial shear stress. European Society of Cardiology Congress, 2012
19. Baker AB, guest lecturer in BME 314: Engineering Foundations of BME, Spring Semester, 2012
20. Baker AB, guest lecturer for UGS 303: Biotechnology & World Health, Fall Semester 2012
21. Baker AB, speaker for the Graduate Engineering Council's Lecture Series for graduate students applying to faculty positions (SP2012)
22. Baker AB, speaker to new faculty at the Cockrell School of Engineering Orientation (F2012)
23. Baker AB, speaker at the TriBeta Biology student honors society (F2012)
24. Baker AB, speaker at T32 grant seminar for graduate students considering a postdoctoral position (F2012)
25. Baker AB, panel speaker at Texas 4000 Cancer Speaker Series (F2012)
26. Baker AB, speaker at Texas 4000 Foundation student meeting (F2012)

27. Baker AB, speaker at meeting for investors from Remeditex Ventures (F2012)
28. Baker AB, guest lecturer in BME 314: Engineering Foundations of BME, Spring Semester, 2011
29. Baker AB, guest lecturer for two lectures in BME 344: Biomechanics, Spring Semester, 2011
30. Baker AB, speaker to parents at the UT Family Weekend (F2011)
31. Baker AB, speaker for the Graduate Engineering Council's Lecture Series for graduate students applying to faculty positions (F2011)
32. Baker AB, speaker for the Graduate Engineering Council's Lecture Series for graduate students applying to faculty positions (SP2011)
33. Baker AB, speaker to new faculty at the Cockrell School of Engineering Orientation (F2011)
34. Baker AB, speaker at symposium for research collaboration with Dell Children's Medical Center (SP2011)
35. Baker AB, guest lecturer in BME 314: Engineering Foundations of BME, Spring Semester, 2010
36. Baker AB, speaker at the Beta Mu Epsilon Honor Society meeting (F2010)
37. Baker AB, panel speaker at a Graduate/Undergraduate Research Union (GURU) Pre-Graduate Lunch event (F2010)
38. Baker AB, Department of Biomedical Engineering, University of California, Irvine, CA, 2010
39. Baker AB, Department of Biomedical Engineering, Vanderbilt University, Nashville, TN, 2010
40. Baker AB, Department of Bioengineering, Pennsylvania State University, University Park PA, 2010
41. Baker AB, Department of Biomedical Engineering, University of Texas at Austin, Austin TX, 2010
42. Baker AB, Whitaker Cardiovascular Institute of Boston University Medical Center, Boston MA, 2010
43. Baker AB, American Heart Association Scientific Sessions, Orlando FL, 2009
44. Baker AB, Cardiovascular Division of Medicine, Brigham and Women's Hospital, Boston MA, 2009
45. Baker AB and Sanders JE, Biomedical Engineering Society (BMES), USA. Big Sky, MT, 1999

PATENTS:

1. Takematsu E and Baker AB: Transmembrane Stem Cell Factor (tm-SCF) Lipid Nanocarriers and Methods of Use thereof (Patent Application 62/657,153).
2. Lee J and Baker AB: Biochemical and Biomechanical Conditioning for Enhancing Personalized Mesenchymal Stem Cell Therapies (Disclosed to UT OTC, UT Tech ID #7115 BAK; filed for U.S. patent).

3. Das D and Baker AB: Syndecan-4 Proteoliposomes for Enhanced Cutaneous Wound Healing and Minimized Inflammatory Immune Response (Disclosed to UT Austin OTC, UT Tech ID # 6603 BAK; filed for U.S. patent).
4. Monteforte A and Baker AB: Glypican-1 Proteoliposomes as an Enhancer of Growth Factor Activity (Disclosed to UT Austin OTC, UT Tech ID #6424 BAK, filed for U.S. patent).
5. Spruell C and Baker AB: High-Throughput Cone-and-Plate Apparatus for the Application of Defined Spatiotemporal Flow to Cultured Cells (Disclosed to UT Austin OTC, UT Tech ID #6182 BAK, filed for U.S. patent).
6. Wong M and Baker AB. A High-Throughput and Flexible System for Integrating Mechanobiology with Drug Development and Toxicity Screening (Disclosed to UT Austin OTC, UT Tech ID #6114 BAK, filed for U.S patent).
7. Voyvodic P and Baker AB: A device for reducing pulsation in high throughput flow systems (Disclosed to UT Austin OTC, UT Tech ID #6051 BAK).
8. Baker AB and Edelman ER: Simultaneous Delivery of Receptors and/or Co-Receptors for Growth Factor Stability and Activity (Patent Application 12/389,765).
9. Baker AB and Sanders JE: Structures having coated indentations (Patent 6,558,422 issued May 6, 2003).

GRANTS AND CONTRACTS:

Role	Title	Agency	Portion	Grant Total	Grant Period
PI	Mechanical Conditioning of Mesenchymal Stem Cells for Enhanced Recellularized Vascular Grafts	NIH	$1,565,000	$1,565,000	4/01/18-2/28/22
PI	Glycocalyx Mimetic Polysaccharides as Therapeutics for Atherosclerosis	NIH	$430,375	$430,375	9/15/17-9/15/20
PI	Syndecan-1 in Mechanosensing of Engineered Microenvironments	NIH	$430,375	$430,375	7/15/17-7/15/20
PI	Nanodisc Therapeutics for Peripheral ischemia in Diabetes	AHA	$150,000	$150,000	1/1/17-12/31/19
PI	Development of an Advanced Injectable Therapy for Ischemic Vascular Disease	DOD CDMRP	$2,360,646	$2,360,646	9/30/16-9/30/19
PI	Flexible Regenerative Nanoelectronics for Advanced Peripheral Neural Interfaces	DOD CDMRP	$750,000	$1,495,101	9/30/16-9/30/19
PI	Design-Based Laboratory Modules for Integrative Engineering Education Incorporating The Longhorn Maker Studio Resources	UT Austin	$51,327	$51,327	10/1/16-10/1/17
PI	Nanodisc-Based Delivery of Membrane Protein Therapeutics	Welch Fnd.	$180,000	$180,000	6/1/14-5/31/17
PI	Engineering Effective Revascularization Strategies for Ischemia in Disease States	NIH	$2,314,500	$2,314,500	9/30/11-06/30/16
PI	Development of High Throughput Screening Assays for Cancer Metastasis	Texas 4000 Fnd.	$25,000	$25,000	8/01/11-8/01/12
PI	The Role of Heparanase and Syndecan-1 in Vascular Remodeling	AHA	$308,000	$308,000	1/01/10-12/31/14
Sub.	Matrix Embedded Endothelial Cells in Ischemic disease	Universita Magna Graecia-MIT	$4,034	$4,034	9/17/13-10/31/13
PI	The Role of Heparanase in Atherosclerosis and Vascular Inflammation (Undergraduate Student Research Program)	AHA	$4,000	$4,000	6/01/13-8/31/13

PI	Undergraduate Research Fellowship (Darshil Choksi)	UT Austin	$1,000	$1,000	11/1/16-8/30/16
PI	Undergraduate Research Fellowship (Marjan Majid)	UT Austin	$1,000	$1,000	2/1/15-8/30/16
PI	Undergraduate Research Fellowship (Shih-Ming Wang)	UT Austin	$1,000	$1,000	2/1/15-8/30/16
PI	Undergraduate Research Fellowship (Selena Ilbeig)	UT Austin	$1,000	$1,000	10/1/14-2/1/14
PI	Undergraduate Research Fellowship (Eun Yoon)	UT Austin	$1,000	$1,000	10/1/14-2/1/14
		Totals	**$8,578,257**	**$9,323,358**	

PH.D. SUPERVISIONS COMPLETED:

Subhamoy Das, Biomedical Engineering, 2014
Peter Voyvodic, Biomedical Engineering, 2015
Jason Lee, Biomedical Engineering, 2016
Anthony Monteforte, Biomedical Engineering, 2016
Adrianne Shearer, Biomedical Engineering, 2018

M.S. SUPERVISIONS COMPLETED:

None.

PH.D. IN PROGRESS:

A. Students admitted to candidacy

Victoria Le, Biological Sciences, 2013 – Present
Eri Takematsu, Biomedical Engineering, 2015 – Present
Kayla Henderson, Biomedical Engineering, 2015 – Present
Andrew Sligar, Biomedical Engineering, 2016 – Present
Austin Veith, Biomedical Engineering, 2016 – Present
Lei Mei, Biomedical Engineering, 2017 – Present
Nikita Patil, Biomedical Engineering, 2017 – Present
Daniel Chavarria, Biomedical Engineering, 2017 – Present
ByungGee Im, Biomedical Engineering, 2018 – Present

B. Students preparing to take Ph.D. qualifying exam

None.

M.S. IN PROGRESS

None.

OTHER GRADUATE ADVISING

Kristen Feaver, Biomedical Engineering, Faculty Mentor for NIH T32 Grant Training Program, 2013 – 2015

Thaís Girão da Silva, FeSBE Visiting Graduate Student, Laboratory for Genetics and Molecular Cardiology, Heart Institute (InCor)-University of Sao Paulo Medical School, Brazil, 2017
Sharanya Sankar, Fulbright Scholar, Research Scholar, Indian Institute of Technology, Hyderabad, India, 2017 – 2018

DISSERTATION COMMITTEES:

Rachel Sammons, Ph. D. Candidate, Biomedical Engineering, 2018
Alicia Allen, Ph. D. Candidate, Biomedical Engineering, 2018
Chengyi Tu, Ph. D. Candidate, Biomedical Engineering, 2018
Salma Ayoub, Ph. D. Candidate, Biomedical Engineering, 2018
William Zhang, Ph. D. Candidate, Biomedical Engineering, 2018
Pei-Ling Hsieh, Ph. D. Candidate, Ph. D. Kinesiology and Health Education, 2017
Jitanan Laosiripisan, Ph. D. Candidate, Kinesiology and Health Education, 2016
Zachary Imam, Ph. D. Candidate, Biomedical Engineering, 2016
Emanual Lissek, Ph. D. Candidate, Physics, 2015
Melissa Merscham, Ph. D. Candidate, Kinesiology, 2015
David Giles, Ph. D. Candidate, Biomedical Engineering, 2015
Wilton Snead, Ph. D. Candidate, Biomedical Engineering, 2014
Michael Himmelsbach. Ph. D. Candidate, Physics, 2014
Taejeong Song, Ph. D. Candidate, Kinesiology, 2014
Rachel Sammons, Ph. D. Candidate, Biomedical Engineering, 2014
Sepideh Khoshnevis, Ph.D. Candidate, Biomedical Engineering, 2014
Rachel Buchanan, Ph.D. Candidate, Biomedical Engineering, 2014
Doug Yeager, Ph.D. Candidate, Biomedical Engineering, 2013
Diane Forbes, Ph.D. Candidate, Chemical Engineering, 2013
Stephanie Steichen, Ph.D. Candidate, Biomedical Engineering, 2013
Sahar Elahi, Ph.D. Candidate, Biomedical Engineering, 2012
Laura M. Ricles, Ph.D. Candidate, Biomedical Engineering, 2012
Yue Shi, Ph.D. Candidate, Biomedical Engineering, 2011
Hieu Nguyen, Ph.D. Candidate, Biomedical Engineering, 2011
Xia Zhen, Ph.D. Candidate, Biomedical Engineering, 2011
Julie Rytlewski, Ph.D. Candidate, Biomedical Engineering, 2011
Ryan Nagao, Ph.D. Candidate, Biomedical Engineering, 2010

UNDERGRADUATE STUDENT ADVISING:

Undergraduate Student Researchers

Mudloff Joel, BUILDing Scholars REU Student, UT El Paso (SU2019)
Emily Yang, Biomedical Engineering (Spring 2018- Present)
Ali Abbaspour, Biomedical Engineering, (SP2018 – Present)
Sophia Canga (SU2017 – Present)
Po-Chih Chen (SU2017 – Present)
Kevan Patel, Biomedical Engineering (F2017-Present)
Gabriel Garcia, BUILDing Scholars REU Student, UT El Paso (SU2017)
Aditya Singh, Biomedical Engineering (F2016 – Present)
Jeff Auster, Chemical Engineering (SU2016 – Present)
Aris Maguddayao, Biomedical Engineering (SU2016 – SP2017)
Nicholas Pattie, Biomedical Engineering (SU2016 – Present)
Varsha Karanam, Chemical Engineering (SU2016 – Present)

Miguel Armenta, Biomedical Engineering (F2014 – Present)
Daniel Chavarria, BUILDing Scholars REU Student, UT El Paso (SU2016)
Shih-Ming Wang, Electrical Engineering (Spring 2015 – Present)
HooWon Lee, Biomedical Engineering (Fall 2014 – Present)
Ahmed Abdulrahman Alzahrani, UC Davis, King Abdullah University of Science and Technology (KAUST) Gifted Summer Research Program (SU2016)
Marjan Majid, Biomedical Engineering, Texas Research Experience (TREX) Student (F2014 – Present)
Krysta Amezcua, MARC Undergraduate Student Training in Academic Research (U-STAR) Award (T34) Student Fellow, UT San Antonio (SU2015)
Shreya Gupta, Indian Institute of Technology, Khorana Program, Indo-US Science and Technology Forum (SU2015)
Zhiying Zhu, REU Student (SU2015)
Chaarushena Deb, Biological Engineering, MIT (SU2015)
Darshil Choksi, Biomedical Engineering (SU2014 – Present)
Cody Heiser, Biomedical Engineering (SU2014 – Present)
Smridhi Mahajan, Biomedical Engineering (SU2014 – Present)
Selena Ilbeig, Biomedical Engineering (SU2014 – Present)
Varun Koneru, Biomedical Engineering (SP2014 – Present)
Colton Andrews, Biomedical Engineering (SP2014 – F2015)
Ameya Bhat, Biomedical Engineering (SP2014 – F2015)
Brian Lam, Biomedical Engineering (SU2013 – Present)
John Rector, Biomedical Engineering (SP2014 – Present)
Seema Nandi, Biomedical Engineering (SP2014 – Present)
Divya Rayapati, Wash. U. St. Louis (SU2014)
Aswin Ramaswami, Biomedical Engineering (F2013– Present)
Eun Yoon, Biomedical Engineering (SP2012 – Present)
Daniel Min, Biomedical Engineering (F2011 – Present)
Robert Liu, Biomedical Engineering (SP2012 – Present)
Evan Williams, Biomedical Engineering (SP2012 – Present)
Gunjan Singh, Biomedical Engineering (SP2012 – Present)
Joseffin Jansson-Edquist, Biomedical Engineering (F2013 – SP2014)
Stephanie Yarborough, Biomedical Engineering (F2012 – SP2013)
Kenneth Lee, Biomedical Engineering (F2012 – SP2013)
Vivek Sreeram, Biomedical Engineering (SP2013)
Rishi Doctor, Biomedical Engineering (SP2012 – F2013)
Seung Choe, Biomedical Engineering (SP2012 – F2013)
Quentin Smith, Biomedical Engineering (SP2013 – SP2014)
Collin Johnson, Human Biology (F2012 – SP2014)
Vidya Bondada, Human Biology (F2012 – SP2014)
Rachel (Xue) Yan, Biomedical Engineering (F2012 – SP2014)
Matthew Edward Martinez, Biomedical Engineering (SP2012 – SP2014)
Emmanuel Nunez, Biomedical Engineering (SP2012 – SP2014)
Vittoria Rossi, Human Biology, (F2012 – SP2013)
David Chimene, Biomedical Engineering, (F2012 – SP2013)
Rishi Goel, Biomedical Engineering (SP 2012), transferred to Harvard University
Christoffer Lam, Chemistry (SP2012 – F2013)
Tuan Tang, Biomedical Engineering (SP2012 – F2013)
Kimberly Pham, Biomedical Engineering (F2012 – F2013)

Neha Gaddam, Biomedical Engineering (SP2012 – F2013)
Neha Atyam, Biomedical Engineering (SP2012 – F2013)
Derek Ho, Biomedical Engineering (F2012 – F2013)
Alex Zhou, Biomedical Engineering (F2012 – F2013)
Benjamin Warren, B.S. 2012, Biomedical Engineering (SP2011 – SP2012)
Dominic Nguyen, B.S. 2012, Biomedical Engineering (SP2011 – SP2012)
Dienhong Tran, B.S. 2012, Biomedical Engineering (SP2011 – SP2012)
Mitchell Wong, Biomedical Engineering (F2010 – SP2014)
Christopher Spruell, B.S. 2012, Biomedical Engineering (F2010 – SP2012)

BME371 – Senior Project Design Team (2016)
Sarah Koch
Siva Manda
Amit Narawane
Lara Samarneh

BME371 – Senior Project Design Team (2015)
Sarah Poletti
Laura Strong
Evan Williams
Anum Syed

BME371 – Senior Project Design Team (2014)
Jacob Sacks
Rohan Diora
Daniyal S. Malik
Joshua Bantseev

BME371 – Senior Project Design Team (2013)
Jayvee Abella
Hyemin Kim
Shannah Leal
David Yang

BME371 – Senior Project Design Team (2012)
Howard Lin
Huy Nguyen
Mitchell Wong
Laura Fuentes

BME371 – Senior Project Design Team (2011)
Robert Chou
Shweta Kumar
Jacob McCollum
Marcela Mendoza

BME371 – Senior Project Design Team (2010)
Long Cao
Shivani Gupta

Thomas Mathews
Josh Heinrich

Keshav Poddar, Plan II Honors Mentor, (SP2011 – SP2012)
Katherine Young, Honor Thesis Mentor, (F2015 – SP2016)

MEDICAL STUDENT ADVISING:

Hao Liu, Medical Student, University of Texas Health Science Center at San Antonio (SP2011 – SP2013)

POSTDOCTORAL FELLOW/ASSOCIATE ADVISING:

Jason Lee, Ph.D., Postdoctoral Fellow (Sp2016 – Present)
Subhamoy Das, Ph.D., Postdoctoral Fellow (Sp2015 – Sp2016)
Somali Chatterji, Ph.D., Postdoctoral Fellow (F2011 – F2013)
Shuang Niu, M.D., Ph.D., Postdoctoral Fellow (F2012 – SP2013)
Mar Creixell, Ph.D., Postdoctoral Fellow (F2012 – SP2013)

ROTATION STUDENTS ADVISING:

Lei Mei, Biomedical Engineering, 2017
Nikita Patil, Biomedical Engineering, 2017
Daniel Chavarria, Biomedical Engineering, 2017
Shaun Engelmann, Biomedical Engineering, 2017
Austin Veith, Biomedical Engineering, 2016
Danyang Li, Cell and Molecular Biology, 2016
Andrew Sligar, Biomedical Engineering, 2015
Eri Takematsu, Biomedical Engineering, 2015
Kayla Henderson, Biomedical Engineering, 2015
Christopher Riley, Biological Sciences, 2013
Jonathan Lee, UT Medical Branch M.D.-Ph.D. Program, 2013

OTHER ADVISING:

Maria De La Almudena Gomez Hernandez, Ph.D., Visiting Scientist from Madrid, Spain (F2018 – Present)

TEACHING ACTIVITIES:

2010 – Present Instructor for *BME 382J. Cellular and Molecular Biomechanics* at UT Austin
2010 – Present Instructor for *BME 353. Transport Phenomena in Living Systems* at UT Austin
2015 – Present Guest lecturer for *BME 344. Biomechanics* at UT Austin
2018 Guest lecturer for NIH T32 students seminar, taught class on writing a scientific paper.
2016 Guest lecturer for NIH T32 students seminar, taught class on writing a scientific paper.
2015 Guest lecturer for *BME382J. Biomimetic Design and Engineering* at UT Austin
2013 Faculty Mentor for BME 370/BME 371 Senior Design Team
2013 Guest lecture for *BME 314. Engineering Foundations of Biomedical Engineering* at UT Austin
2012 Instructor for *BME 353. Transport Phenomena in Living Systems* at UT Austin
2012 Guest lecturer for *BME 314. Engineering Foundations of Biomedical Engineering* at UT Austin

2012 Guest lecturer for UGS 303: Biotechnology & World Health, Fall Semester 2012
2012 Advised a student group in *UGS 303: Research Methods and Originality in the Arts and Sciences* who were developing a research proposal or non-profit organization to combat sudden cardiac death in teenagers
2012 Faculty Mentor for BME 370/BME 371 Senior Design Team
2012 Judge at the Engineering Poster Exhibition hosted by the Student Engineering Council
2011 Guest lecture for two classes in *BME 377T. Biomechanics* at UT Austin
2011 Guest lecture for *BME 314. Engineering Foundations of Biomedical Engineering* at UT Austin
2011 Designed and taught a new graduate course entitled *BME 382J. Cellular and Molecular Biomechanics,* at UT Austin
2011 Faculty Mentor for BME 370/BME 371 Senior Design Team
2010 Guest lecture for *BME 314. Engineering Foundations of Biomedical Engineering* at UT Austin
2010 Faculty Mentor for BME 370/BME 371 Senior Design Team
2003 Teaching Assistant for *Biological Engineering 310: Biomechanics* taught in the Biological Engineering Department at MIT
1999 Lecturer in the University of Washington Engineered Biomaterials UWEB Course for Industrial Partners

Qualifying Exam Committees

2018 Committee member on five UT BME Doctoral Qualifying Exams
2017 Committee member on four UT BME Doctoral Qualifying Exams
2016 Committee member on eight UT BME Doctoral Qualifying Exams
2015 Committee member on four UT BME Doctoral Qualifying Exams
2014 Committee member on five UT BME Doctoral Qualifying Exams
2014 Committee member on one Interdisciplinary Doctoral Comprehensive Exam (UT Austin Kinesiology Department)
2013 Committee member on three UT BME Doctoral Qualifying Exams
2013 Committee member on two Interdisciplinary Doctoral Comprehensive Exams (UT Austin Kinesiology Department)
2012 Committee member on three UT BME Doctoral Qualifying Exams
2011 Committee member on four UT BME Doctoral Qualifying Exams

MEDIA COVERAGE:

Treatments for Treatments for Ischemia:

- https://www.technologyreview.com/s/601416/injectable-gel-generates-new-blood-vessels/
- http://www.dailytexanonline.com/2016/05/06/biomedical-engineers-receive-grant-for-regenerating-blood-vessels-0
- http://www.utexas.edu/news/2012/02/10/aaron_baker_heart_disease_treatment/
- http://www.biotechniques.com/news/New-Innovator-Aaron-Baker-Biomedical-Engineer/biotechniques-323528.html
- http://in.news.yahoo.com/breakthrough-grow-blood-vessels-heart-095951782.html
- http://www.gizmag.com/blood-vessel-regrowth-u-texas/21520/
- Work featured in the newsletters of the American Heart Association and the Texas Comptroller's Office

- http://www.bme.utexas.edu/news/982-baker-dod-grant
- http://www.bme.utexas.edu/news/1068-using-nanodiscs-to-deliver-drugs-for-ischemia-treatment

Cancer Drug Screening:
- http://www.engr.utexas.edu/features/breast-cancer-research
- http://www.bme.utexas.edu/news/318-texas-4000-presents-gift-at-annual-welcome-gathering
- http://www.engr.utexas.edu/news/releases/tx4000ride
- http://prezi.com/8mj2fft6236r/tex-talks/
- https://vimeo.com/104406945

NIH New Innovator Award:
- http://www.biotechniques.com/news/New-Innovator-Aaron-Baker-Biomedical-Engineer/biotechniques-323528.html
- http://web5.cns.utexas.edu/news/2011/09/nih-grants/
- http://www.nih.gov/news/health/sep2011/od-20.htm

NeoCore Therapeutics:
- http://www.collegemogul.com/10/20/08/NeoCore-Therapeutics-An-Alternative-Approach-To-Cancer
- http://boston.bizjournals.com/boston/stories/2008/05/26/story14.html
- http://media.www.mitsloanfifteen.com/media/storage/paper766/news/2008/04/08/News/Contestants.Pumped.Up.As.Mit.100k.Entrepreneurship.Competition.Hits.Record.Numbe-3317395.shtml

Surgical Adhesives:
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