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EDUCATION

Harvard Medical School and Massachusetts General Hospital

Postdoctoral Fellowship, Center for Engineering in Medicine, July 2003-August 2005

Advisor: Prof. Mehmet Toner (NAE)

Massachusetts Institute of Technology

Ph.D. in Materials Science and Engineering, June 2003

Advisor: Prof. Karen Gleason (NAE)

Johns Hopkins University

B.S. in Chemical Engineering, May 1999. General and Departmental Honors.

ACADEMIC APPOINTMENTS

July 2015 – present	Professor of Chemical Engineering Northeastern University
August 2013 – present	Founding Director Michael J. and Ann Sherman Center for Engineering Entrepreneurship Education Northeastern University (Click here for description of this role.)
February 2014 – present	Visiting Scientist Eli and Edythe L. Broad Institute of Harvard and MIT
January 2013 – August 2013	Visiting Scientist Children's Hospital Boston (Sabbatical leave at laboratory of Prof. George Daley)
July 2011 – present	Faculty Fellow Barnett Institute of Chemical and Biological Analysis Northeastern University
July 2011 – June 2015	Associate Professor (with Tenure) of Chemical Engineering Northeastern University
August 2005 – present	Scientific Investigator (Courtesy Appointment) Center for Engineering in Medicine Massachusetts General Hospital and Shriners Burns Hospital

July 2011 – December 2014	Associate Professor (Secondary Appointment) Department of Mechanical & Industrial Engineering Northeastern University
August 2005 – June 2011	Assistant Professor of Chemical Engineering Northeastern University
January 2010 – May 2011	Assistant Professor (Secondary Appointment) Department of Mechanical Engineering Northeastern University
July 2003 – August 2005	Postdoctoral Fellow Center for Engineering in Medicine Harvard Medical School, Massachusetts General Hospital, and Shriners Hospital for Children
September 1999 – May 2003	Graduate Research Assistant Massachusetts Institute of Technology
June 1998 – July 1998	Research Assistant Austrian Energy and Environment, Graz, Austria

ADMINISTRATIVE APPOINTMENTS

Jan 2012 – August 2012	Acting Chair Department of Chemical Engineering Northeastern University (Click here for accomplishments as Acting Chair)
August 2011 – Dec 2011	Associate Department Chair Department of Chemical Engineering Northeastern University

ENTREPRENEURIAL ACTIVITY

February 2012 – present	Co-Founder and Chief Scientific Advisor Quad Technologies, Inc.
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- Company founded to commercialize innovative coating capable of selective cell capture and release under mild conditions. Applications in cell therapy manufacturing for purification and expansion.
- MagCloudz Streptavidin product launched in November 2015.
- 2016: Quad Technologies named one of the top 3 emerging companies by BioProcess International.

- 2013: Quad Technologies was among 26 finalists from over 1,200 participating startups worldwide and CASIS cash prize recipient in MassChallenge, the world's largest startup accelerator competition.
- Series A funding round closed in August 2015.
- Company currently employs nine full-time personnel.

May 2013 – Dec 2013

Entrepreneur-in-Residence
Oxford Bioscience Partners

Role: Provided scientific, technological, and market input to General Partners of this venture firm on new investment opportunities in the U.S. and abroad.

AWARDS AND HONORS

- 2016 **Fellow, American Institute for Medical and Biological Engineering (AIMBE)**
(The AIMBE College of Fellows is comprised of the top 2 percent of the most accomplished leaders in the field of Medical and Biological Engineering.)
- 2013-16 Features Panel Member, *Analytical Chemistry*
(This advisory group suggests authors and topics for featured and review articles that the journal publishes. Membership is by invitation from the Editor-in-Chief.)
- 2014 Invited Attendee, Arab-American Frontiers of Science, Engineering, and Medicine Symposium organized by the U.S. National Academy of Science and The Research Council of the Sultanate of Oman
(23 U.S. attendees to this meeting were chosen via a competitive process from a nationwide pool.)
- 2014 Invited Attendee, Frontiers of Engineering Education Symposium organized by the U.S. National Academy of Engineering
(77 engineering faculty were chosen to attend this annual meeting via a competitive process from a nationwide pool.)
- 2014 Northeastern University College of Engineering Faculty Fellow
(Among inaugural class of 8 Associate Professors recognized by the Dean of Engineering for outstanding achievement and leadership).
- 2010 Emerging investigator, *Lab on a Chip* special issue
(Selected for inclusion following a global competition for special issue published in August 2010.)
- 2009 Søren Buus Outstanding Research Award, College of Engineering, Northeastern University
(Awarded annually to individuals selected by College committee upon nomination based on external letters obtained by nominator and research record).
- 2008 **National Science Foundation Faculty Early Career Development (CAREER) Award**
- 2003 Elected to Sigma Xi, Full Member, Massachusetts Institute of Technology Chapter
- 1999 Presidential Fellowship, Massachusetts Institute of Technology

(Special recognition via stipend supplement for selected outstanding incoming graduate students).

- 1999 Loy Wilkinson Award for academic excellence, leadership, and service in Chemical Engineering, Johns Hopkins University
(Awarded annually to a graduating senior based on departmental faculty vote).
- 1997 Elected to Tau Beta Pi, Johns Hopkins University Chapter

SCHOLARSHIP AND RESEARCH

PUBLICATIONS

Publication Record Summary

'h' index: 23 (as of February 15, 2017 via ISI Web of Science)

Peer-Reviewed Journal Articles

For list below: * denotes corresponding author; † NU graduate student; ‡ NU undergraduate student; § high school student from NU's Young Scholars Program; † high school teacher from NU's Research Experience for Teachers Program.

[2014 Five-Year Impact Factor of Journal]; {Number of times cited as of June 10, 2016}

Published

1. D.I. Walsh,† D.S. Kong, S.K. Murthy, and P.A. Carr. "Enabling Microfluidics: From Clean Rooms to Makerspaces," *Trends in Biotechnology* **2017** (in press). [Impact Factor: 12.05]. {Times cited: 0}.
2. D.I. Walsh,† S.K. Murthy, and A. Russom. "Ultra-High-Throughput Sample Preparation System for Lymphocyte Immunophenotyping Point-of-Care Diagnostics," *Journal of Laboratory Automation* **2016**, 21, 706-712. **Cover article; featured among top 10 articles of 2016** by the Society for Laboratory Automation and Screening. [Impact Factor: 1.60]. {Times cited: 0}.
3. D. Bavli, E. Ezra, D. Kitsberg, M. Vosk-Artzi, S.K. Murthy, and Y. Nahmias. "One Step Antibody-Mediated Isolation and Patterning of Multiple Cell Types in Microfluidic Devices," *Biomicrofluidics* **2016**, 10, 024112. [Impact Factor: 3.46]. {Times cited: 0}.
4. C.H. do Prado, T. Narahari,† F.H. Holland, H-N. Lee, S.K. Murthy, and H.C. Brenhouse. "Effects of Early Adolescent Environmental Enrichment on Cognitive Dysfunction, Prefrontal Cortex Development, and Inflammatory Cytokines After Early Life Stress," *Developmental Psychobiology* **2016**, 58, 482-491. [Impact Factor: 3.38]. {Times cited: 0}.
5. L. Calvier, E. Legchenko, L. Grimm, H. Sallmon, A. Hatch,† B. D. Plouffe, C. Schroeder, J. Bauersachs, S. K. Murthy, G. Hansmann. "Galectin-3 and Aldosterone as Potential Tandem

- Biomarkers in Pulmonary Arterial Hypertension,” *Heart* **2016**, 102, 390-396. [Impact Factor: 4.78]. {Times cited: 1}. ****Editor’s Choice.****
6. A.E. Adeniran-Catlett,[†] E. Beguin,[‡] F.K. Bozal,[‡] and S.K.Murthy*. “Suspension Based Differentiation of Adult Mesenchymal Stem Cells Toward Chondrogenic Lineage,” *Connective Tissue Research* **2016**, 57, 466-475. [Impact Factor: 1.89]. {Times cited: 0}.
 7. A.E. Adeniran-Catlett,[†] L.D. Weinstock,[‡] E. Beguin,[‡] F.K. Bozal,[‡] A.T. Caraballo,[‡] and S.K.Murthy*. “Accelerated Adipogenic Differentiation of hMSCs in a Microfluidic Shear Stimulation Platform,” *Biotechnology Progress* **2016**, 32, 440-446. [Impact Factor: 2.27]. {Times cited: 0}.
 8. S. Hosis,[†] S.K.Murthy, and A.N. Koppes. “Microfluidic Sample Preparation for Single Cell Analysis,” *Analytical Chemistry* **2016**, 88, 354-380 (invited review article). [Impact Factor: 5.79]. {Times cited: 1}.
 9. Y-C. Wang, J.W. Stein, C.L. Lynch, H.T. Tran, C-Y. Lee, R. Coleman, A. Hatch,[†] V.G. Antontsev,[‡] H.S. Chy, C. O’Brien, S.K. Murthy, A.L. Laslett, S.E. Peterson, J.F. Loring. “Glycosyltransferase ST6GAL1 Regulates Pluripotency in Human Pluripotent Stem Cells,” *Scientific Reports* **2015**, 5, 13317. [Impact Factor: 5.60]. {Times cited: 0}.
 10. S. Kreimer, A.M. Belov, I. Ghiran, S.K. Murthy, D.A. Frank, and A.R. Ivanov. “Mass-Spectrometry-Based Molecular Characterization of Extracellular Vesicles: Lipidomics and Proteomics,” *Journal of Proteome Research* **2015**, 14, 2367-2384. [Impact Factor: 4.48]. {Times cited: 0}.
 11. D.I. Walsh,[†] M.L. Lalli, J. M. Kassas,[‡] A.R. Asthagiri, and S.K. Murthy*. “Cell Chemotaxis on Paper for Diagnostics,” *Analytical Chemistry* **2015**, 87, 5505-5510. [Impact Factor: 5.79]. {Times cited: 2}.
 12. S. Li, B.D. Plouffe, A.M. Belov, S. Ray, X. Wang, S.K. Murthy, B.L. Karger, and A.R. Ivanov. “An Integrated Platform for Isolation, Processing and Proteomic Profiling of Rare Cells in Whole Blood,” *Molecular and Cellular Proteomics* **2015**, 14, 1672-1683. **Cover Article**. [Impact Factor: 6.56]. {Times cited: 5}.
 13. M.F. Diaz, N. Li, H.J. Lee, L. Adamo, S.M. Evans, H.E. Wiley, N. Arora, Y. Torisawa, D.A. Vickers,[†] S.A. Morris, O. Naveiras, S.K. Murthy, D. E. Ingber, G.Q. Daley, G. Garcia-Cardena, P.L. Wenzel. “Biomechanical Forces Promote Blood Development through Prostaglandin E₂ and the cAMP-PKA Signaling Axis,” *Journal of Experimental Medicine* **2015**, 212, 665-680. [Impact Factor: 13.24]. {Times cited: 1}.
 14. T. Narahari,[†] D. Dendukuri, and S.K. Murthy*. “Tunable Electrophoretic Separations Using a Scalable, Fabric-Based Platform,” *Analytical Chemistry* **2015**, 87, 2480-2487. [Impact Factor: 5.79]. {Times cited: 0}.

15. B.D. Plouffe, S.K. Murthy, and L.H. Lewis. “Fundamentals and Application of Magnetic Particles in Cell Isolation and Enrichment,” *Reports on Progress in Physics* **2015**, 78, 016601 (invited review article). [Impact Factor: 17.24]. {Times cited: 6}.
16. R. Lin, A. Hatch,[†] V.G. Antontsev,[‡] S.K. Murthy, and J.M. Melero-Martin. “Microfluidic Capture of Endothelial Colony-Forming Cells from Human Adult Peripheral Blood: Phenotypic and Functional Validation In Vivo,” *Tissue Engineering Part C – Methods* **2015**, 21, 274-283. [Impact Factor: 4.45]. {Times cited: 2}.
17. B.D. Plouffe and S.K. Murthy*. “Perspective on Microfluidic Cell Separation: A Solved Problem?” *Analytical Chemistry* **2014**, 86, 11481–11488 (invited Perspective Article). [Impact Factor: 5.79]. {Times cited: 6}.
18. J. Sun, G.L. Zhang, S. Li, A.R. Ivanov, D. Fenyo, F. Lisacek, S.K. Murthy, B.L. Karger, and V. Brusic. “Pathway Analysis and Transcriptomics Improve Protein Identification by Shotgun Proteomics from Samples Comprising Small Numbers of Cells: A Benchmarking Study.” *BMC Genomics* **2014**, 15, S1. [Impact Factor: 4.36]. {Times cited: 1}.
19. B. Zhu, Y. Nahmias, M.L. Yarmush, and S.K. Murthy*. “Microfluidic Isolation of CD34+ Skin Cells Enables Regeneration of Hair and Sebaceous Glands In Vivo,” *Stem Cells Translational Medicine* **2014**, 3, 1354-1362. **Cover Article**. [Impact Factor: 5.71 (new journal)]. {Times cited: 3}.
20. D.I. Walsh,[†] G.J. Sommer, U.Y. Schaff, P.S. Hahn, G.J. Jaffe, and S.K. Murthy*, “A Centrifugal Fluidic Immunoassay for Ocular Diagnostics with an Enzymatically Hydrolyzed Fluorogenic Substrate,” *Lab on a Chip* **2014**, 14, 2673-2680. [Impact Factor: 5.78]. {Times cited: 4}.
21. B. Zhang, C. Peticone, S.K. Murthy, and M. Radisic, “A Standalone Perfusion Platform for Drug Testing and Target Validation in Micro-Vessel Networks,” *Biomicrofluidics* **2013**, 7, 044125. [Impact Factor: 3.46]. {Times cited: 5}.
22. N. Pestana,[†] L. Mortensen, J. Runnels, D.A.L. Vickers,[†] S.K. Murthy, C.P. Lin, and M. Niedre, “Improved Diffuse Fluorescence Flow Cytometer Prototype for High Sensitivity Detection of Rare Circulating Cells In Vivo,” *Journal of Biomedical Optics* **2013**, 18, 077002. [Impact Factor: 2.93]. {Times cited: 1}.
23. D.A.L. Vickers,[†] E. J. Chory,[‡] M.C. Harless,[‡] and S.K. Murthy*, “p38 Signaling and Receptor Recycling Events in a Microfluidic Endothelial Cell Adhesion Assay,” *PLoS One* **2013**, 8, e65828. [Impact Factor: 3.70]. {Times cited: 1}.
24. N. Pestana,[†] D. Walsh,[†] A. Hatch,[†] P. Hahn, G. J. Jaffe, S.K. Murthy, and M. Niedre, “A Dedicated Low-Cost Fluorescence Microfluidic Device Reader for Point-of-Care Ocular Diagnostics,” *Journal of Medical Devices* **2013**, 7, 024501. [Impact Factor: N/A; new journal]. {Times cited: 0}.

25. B. Zhu, J. Smith, M.L. Yarmush, Y. Nahmias, B.J. Kirby, and S.K. Murthy*, “Microfluidic Enrichment of Mouse Epidermal Stem Cells and Validation of Stem Cell Proliferation In Vitro,” *Tissue Engineering Part C – Methods* **2013**, 19, 765-773. [Impact Factor: 4.45]. {Times cited: 11}.
26. V. Tandon, B. Zhang, M. Radisic, and S.K. Murthy*, “Generation of Tissue Constructs for Cardiovascular Regenerative Medicine: From Cell Procurement to Scaffold Design,” *Biotechnology Advances* **2013**, 31, 722-735 (invited review article). [Impact Factor: 11.89]. {Times cited: 12}.
27. B. Zhu and S.K. Murthy*, “Stem Cell Separation Technologies,” *Current Opinion in Chemical Engineering* **2013**, 2, 3-7 (invited review article). [Impact Factor: N/A; new journal]. {Times cited: 7}.
28. D.A.L. Vickers,[†] E. J. Chory,[‡] and S.K. Murthy*, “Separation of Two Phenotypically Similar Cell Types via a Single Common Marker in Microfluidic Channels,” *Lab on a Chip* **2012**, 12, 3399-3407. [Impact Factor: 5.78]. {Times cited: 9}.
29. D.A.L. Vickers,[†] M. Kulik, M. Hincapie, W.S. Hancock, S. Dalton, and S.K. Murthy*, “Lectin-Functionalized Microchannels for Characterizing Pluripotent Cells and Early Differentiation,” *Biomicrofluidics* **2012**, 6, 024122. [Impact Factor: 3.46]. {Times cited: 8}.
30. B. Zhang, J.V. Green,[†] S.K. Murthy*, and M. Radisic, “Label-Free Enrichment of Functional Cardiomyocytes Using Microfluidic Deterministic Lateral Flow Displacement,” *PLoS One* **2012**, 7, e37619. [Impact Factor: 3.70]. {Times cited: 14}.
31. A. Hatch,[†] D. M. Pesko,[‡] and S.K. Murthy*, “Tag-Free Microfluidic Separation of Cells Against Multiple Markers,” *Analytical Chemistry* **2012**, 84, 4618-4621. [Impact Factor: 5.79]. {Times cited: 16}.
32. E. Zettergren, D.A.L. Vickers,[†] J. Runnels, S.K. Murthy, C.P. Lin, and M. Niedre, “Instrument for Fluorescence Sensing of Circulating Cells with Diffuse Light in Mice *In Vivo*,” *Journal of Biomedical Optics* **2012**, 17, 037001. [Impact Factor: 2.93]. {Times cited: 6}.
33. B.D. Plouffe,[†] M. Mahalanabis, L.H. Lewis, C.M. Klapperich, and S.K. Murthy*, “Clinically Relevant Microfluidic Magnetophoretic Isolation of Rare-Cell Populations for Diagnostic and Therapeutic Monitoring Applications,” *Analytical Chemistry* **2012**, 84, 1336-1344. [Impact Factor: 5.79]. {Times cited: 31}. ****Featured in Chemical & Engineering News.****
34. G. Hansmann, B.D. Plouffe,[†] A. Hatch,[†] A. von Gise, H. Sallmon, R.T. Zamanian, and S.K. Murthy*, “Design, Validation, and Clinical Application of an Endothelial Progenitor Cell Microfluidic Capture Chip in Patients with Pulmonary Arterial Hypertension,” *Journal of Molecular Medicine* **2011**, 89, 971-983. [Impact Factor: 5.11]. {Times cited: 16}. ****Featured in editorial article in this issue of the journal. ****

35. B.D. Plouffe,[†] D.K. Nagesha, R.S. DiPietro, S. Sridhar, D. Heiman, S.K. Murthy, and L.H. Lewis, “Thermomagnetic Determination of Fe₃O₄ Magnetic Nanoparticle Diameters for Biomedical Applications,” *Journal of Magnetism and Magnetic Materials* **2011**, *323*, 2310-2317. [Impact Factor: 1.98]. {Times cited: 11}.
36. B.D. Plouffe,[†] L.H. Lewis, and S.K. Murthy*. “Computational Design Optimization for Microfluidic Magnetophoresis,” *Biomicrofluidics* **2011**, *5*, 013413 (invited contribution to special issue on Tissue Engineering and Regenerative Medicine). [Impact Factor: 3.46]. {Times cited: 23}.
37. D.A.L. Vickers,[†] M. Hincapie, W.S. Hancock, and S.K. Murthy*. “Lectin-Mediated Microfluidic Capture and Release of Leukemic Lymphocytes from Whole Blood,” *Biomedical Microdevices* **2011**, *13*, 565-571. [Impact Factor: 2.77]. {Times cited: 9}.
38. J.V. Green,[†] D. Sun, A. Hafezi-Moghadam, K. Lashkari, and S.K. Murthy*. “Microfluidic Pillar Array Sandwich Immunofluorescence Assay for Ocular Diagnostics,” *Biomedical Microdevices* **2011**, *13*, 573-583. [Impact Factor: 2.77]. {Times cited: 8}.
39. A. Hatch,[†] G. Hansmann, and S.K. Murthy*, “Engineered Alginate Hydrogels for Effective Microfluidic Capture and Release of Endothelial Progenitor Cells from Whole Blood,” *Langmuir* **2011**, *27*, 4257-4264. [Impact Factor: 4.54]. {Times cited: 49}.
40. R.J. Camp,[†] M. Lilies, J. Beale,[‡] N. Saedi,[†] B. Flynn, E. Moore,[‡] S.K. Murthy, and J.W. Ruberti. “Molecular Mechanochemistry: Strain-Dependent Enzymatic Cleavage of Human Type I Collagen Monomer,” *Journal of the American Chemical Society* **2011**, *133*, 4073-4078. [Impact Factor: 11.73]. {Times cited: 35}.
41. D.A.L. Vickers[†] and S.K. Murthy*. “Receptor Expression Changes as a Basis for Endothelial Cell Identification Using Microfluidic Channels,” *Lab on a Chip* **2010**, *10*, 2380-2386 (Special Issue on Emerging Investigators). [Impact Factor: 5.78]. {Times cited: 5}.
42. L. Wang,[†] S.K. Murthy, G.A. Barabino, and R.L. Carrier. “Synergic Effects of Crypt-like Topography and ECM Proteins on Intestinal Cell Behavior in Collagen Based Membranes,” *Biomaterials* **2010**, *31*, 7586-7598. [Impact Factor: 9.31]. {Times cited: 21}.
43. A.K.H. Achyuta,[†] V.S. Polikov, A.J. White, H.G. Pryce Lewis, and S.K. Murthy*. “Biocompatibility Assessment of Insulating Silicone Polymer Coatings Using an In Vitro Glial Scar Assay,” *Macromolecular Bioscience* **2010**, *10*, 872-880. [Impact Factor: 4.01]. {Times cited: 8}.
44. J.B. Leach, A.K.H. Achyuta,[†] and S.K. Murthy*. “Bridging the Divide Between Neuroprosthetic Design, Tissue engineering, and Neurobiology,” *Frontiers in Neuroengineering* **2010**, *2*, Article 18 (invited review; online journal). {Times cited: 32}.

45. A.K.H. Achyuta,[†] K.D. Stephens,[‡] H.G. Pryce Lewis, and S.K. Murthy*. “Mitigation of Reactive Human Cell Adhesion on Poly(dimethylsiloxane) by Immobilized Trypsin,” *Langmuir* **2010**, *26*, 4160-4167. [Impact Factor: 4.54]. {Times cited: 5}.
46. J.V. Green,[†] M. Radisic, and S.K. Murthy*. “Deterministic Lateral Displacement as a Means to Enrich Large Cells for Tissue Engineering,” *Analytical Chemistry* **2009**, *81*, 9178-9182. [Impact Factor: 5.79]. {Times cited: 43}.
47. L. Wang,[†] S.K. Murthy, W.H. Fowle, G.A. Barabino, and R.L. Carrier. “Influence of Microwell Biomimetic Topography on Intestinal Epithelial Caco-2 Cell Phenotype,” *Biomaterials* **2009**, *30*, 6825-6834. [Impact Factor: 9.31]. {Times cited: 33}.
48. B.D. Plouffe,[†] T. Kniazeva,[‡] J.E. Mayer, S.K. Murthy,* and V.L. Sales. “Development of Microfluidics as Endothelial Progenitor Cell Capture Technology for Cardiovascular Tissue Engineering and Diagnostic Medicine,” *FASEB Journal* **2009**, *23*, 3309-3314. [Impact Factor: 5.64]. {Times cited: 57}. **** Featured in press release by journal and covered by media. ****
49. J.V. Green[†] and S.K. Murthy*. “Microfluidic Enrichment of a Target Cell Type from a Heterogeneous Suspension by Adhesion-Based Negative Selection,” *Lab on a Chip* **2009**, *9*, 2245-2248. [Impact Factor: 5.78]. {Times cited: 20}.
50. B.D. Plouffe,[†] M.A. Brown, R.K. Iyer, M. Radisic, and S.K. Murthy*. “Controlled Capture and Release of Cardiac Fibroblasts using Peptide-Functionalized Alginate Gels in Microfluidic Channels,” *Lab on a Chip* **2009**, *9*, 1507-1510. [Impact Factor: 5.78]. {Times cited: 37}. **** Featured as ‘Hot Article’ by journal.****
51. D.K. Nagesha, B.D. Plouffe,[†] M. Phan, L.H. Lewis, S. Sridhar, and S.K. Murthy. “Functionalization-Induced Improvement in Magnetic Properties of Fe₃O₄ Nanoparticles for Biomedical Applications,” *Journal of Applied Physics* **2009**, *105*, 07B317. [Impact Factor: 2.28]. {Times cited: 29}.
52. A.K.H. Achyuta,[†] A.J. White, H.G. Pryce Lewis, and S.K. Murthy*. “Incorporation of Linear Spacer Molecules in Vapor Deposited Silicone Polymer Thin Films,” *Macromolecules* **2009**, *42*, 1970-1978. [Impact Factor: 5.64]. {Times cited: 14}.
53. A.K.H. Achyuta,[†] R. Cieri,[⊥] K. Unger,[⊥] and S.K. Murthy*. “Synergistic Effect of Immobilized Laminin and Nerve Growth Factor on PC12 Neurite Outgrowth,” *Biotechnology Progress* **2009**, *25*, 227-234. [Impact Factor: 2.27]. {Times cited: 18}.
54. J.V. Green,[†] T. Kniazeva,[‡] M. Abedi,[†] D. Sokhey,[‡] M.E. Taslim, and S.K. Murthy*. “Effect of Channel Geometry on Cell Adhesion in Microfluidic Devices,” *Lab on a Chip* **2009**, *9*, 677-685. [Impact Factor: 5.78]. {Times cited: 38}.

55. B.D. Plouffe,[†] M. Radisic, and S.K. Murthy*. “Microfluidic Depletion of Endothelial Cells, Smooth Muscle Cells, and Fibroblasts from Heterogeneous Suspensions,” *Lab on a Chip* **2008**, 8, 462-472. [Impact Factor: 5.78]. {Times cited: 48}.
56. B.D. Plouffe,[†] D. N. Njoka,[‡] J. Harris,[§] J. Liao,[§] N.K. Horick, M. Radisic, and S.K. Murthy*. “Peptide-Mediated Selective Adhesion of Smooth Muscle and Endothelial Cells in Microfluidic Shear Flow,” *Langmuir* **2007**, 23, 5050-5055. [Impact Factor: 4.54]. {Times cited: 79}.
57. S.K. Murthy*. “Nanoparticles in Modern Medicine: State of the Art and Future Challenges,” *International Journal of Nanomedicine* **2007**, 2, 129-141 (invited review article). [Impact Factor: 4.74]. {Times cited: 65}.
58. W.S. O’Shaughnessy, S.K. Murthy, D.J. Edell, and K.K. Gleason. “Stable Biopassive Insulation Synthesized by Initiated Chemical Vapor Deposition of Poly(1,3,5-trivinyltrimethylcyclotrisiloxane),” *Biomacromolecules* **2007**, 8, 2564-2570. [Impact Factor: 6.43]. {Times cited: 34}.
59. M. Radisic, R.K. Iyer, and S.K. Murthy*. “Micro- and Nano-technology in Cell Separation,” *International Journal of Nanomedicine* **2006**, 1, 3-14 (invited review article). [Impact Factor: 4.74]. {Times cited: 70}.
60. S.K. Murthy, P. Sethu, G. Vunjak-Novakovic, M. Toner, and M. Radisic. “Size-Based Microfluidic Enrichment of Neonatal Rat Cardiac Cell Populations,” *Biomedical Microdevices* **2006**, 8, 231-237. [Impact Factor: 2.77]. {Times cited: 45}.
61. K.K.S. Lau, Y. Mao, H.G. Pryce Lewis, S.K. Murthy, B.D. Olsen, L.S. Loo, and K.K. Gleason. “Polymeric Nanocoatings by Hot-Wire Chemical Vapor Deposition (HWCVD),” *Thin Solid Films* **2006**, 501, 211-215. [Impact Factor: 1.92]. {Times cited: 20}.
62. A. Sin, S.K. Murthy, A. Revzin, R.G. Tompkins, and M. Toner. “Enrichment Using Antibody Coated Microfluidic Chambers in Shear Flow: Model Mixtures of Human Lymphocytes,” *Biotechnology and Bioengineering* **2005**, 91, 816-826. [Impact Factor: 4.29]. {Times cited: 59}.
63. S.K. Murthy, A. Sin, R.G. Tompkins, and M. Toner. “Effect of Flow and Surface Conditions on Human Lymphocyte Isolation Using Microfluidic Chambers,” *Langmuir* **2004**, 20, 11649-11655. [Impact Factor: 4.54]. {Times cited: 101}.
64. S.K. Murthy, B.D. Olsen, and K.K. Gleason. “Peptide Attachment to Vapor Deposited Polymeric Thin Films,” *Langmuir* **2004**, 20, 4774-4776. [Impact Factor: 4.54]. {Times cited: 9}.
65. S.K. Murthy, B.D. Olsen, and K.K. Gleason. “Effect of Filament Temperature on the Chemical Vapor Deposition of Fluorocarbon-Organosilicon Copolymers,” *Journal of Applied Polymer Science* **2004**, 91, 2176-2185. [Impact Factor: 1.66]. {Times cited: 9}.

66. J. Lin, S.K. Murthy, B.D. Olsen, K.K. Gleason, and A.M. Klibanov. "Making Thin Polymeric Materials Including Fabrics Microbicidal and also Water-Repellent," *Biotechnology Letters* **2003**, 25(19), 1661-1665. [Impact Factor: 1.84]. {Times cited: 46}.
67. K.K. S. Lau, S.K. Murthy, H.G. Pryce Lewis, J.A. Caulfield, and K.K. Gleason. "Fluorocarbon Dielectrics via Hot Filament Chemical Vapor Deposition," *Journal of Fluorine Chemistry* **2003**, 122, 93-96. [Impact Factor: 1.98]. {Times cited: 28}.
68. S.K. Murthy, B.D. Olsen, and K.K. Gleason. "Initiation of Cyclic Vinylmethylsiloxane Polymerization in a Hot-Filament Chemical Vapor Deposition Process," *Langmuir* **2002**, 18, 6424-6428. [Impact Factor: 4.54]. {Times cited: 30}.
69. S.K. Murthy and K.K. Gleason. "Fluorocarbon-Organosilicon Copolymer Synthesis by Hot Filament Chemical Vapor Deposition," *Macromolecules* **2002**, 35, 1967-1972. [Impact Factor: 5.64]. {Times cited: 16}.

Book Chapters (Non-Peer Reviewed)

1. B. Zhu, B.D. Plouffe, and S.K. Murthy. "Functionalized Microfluidic Devices for Separation of Cell Phenotypes," in *Microfluidic Cell Culture Systems*, C. Bettinger, J. T. Borenstein, S.L. Tao, Editors; Elsevier: Boston, **2013**.
2. S.K. Murthy and M. Radisic. "Cell Adhesion and Detachment," in the *Encyclopedia of Microfluidics and Nanofluidics*, D. Li, Editor-in-Chief; Springer, Germany **2008**.
3. R.K. Iyer, B. Plouffe,[†] S.K. Murthy, and M. Radisic. "Microreactors for Cardiac Tissue Engineering," in *Micro- and Nanoengineering of the Cell Microenvironment: Technologies and Applications*, A. Khademhosseini, J. Borenstein, S. Takayama, and M. Toner, Editors; Artech House Publishing: Boston, **2008**.
4. S.K. Murthy, D.J. Edell, and K.K. Gleason. "Vapor Deposition of Biopassivation Coatings for Neuroprostheses," in *Neuroprosthetics: Theory and Practice*, K.W. Horch and G. Dhillon, Editors; World Scientific Publishing: Singapore, **2004**.

Other Non-Peer Reviewed Publications

1. A.R. Minerick, V.M. Ugaz, S.K. Murthy, and J.D. Posner. "Review of electrophoresis and BioMEMS in 2007: American Electrophoresis Society 24th Annual Meeting," *Journal of Capillary Electrophoresis and Microchip Technology* **2008**, 10, 101-109.

PATENTS

Issued Patents

1. K.K. Gleason and S.K. Murthy. “Fluorocarbon-Organosilicon Copolymers and Coatings Prepared by Hot-Filament Chemical Vapor Deposition.” U.S. Patent No. 6,887,578. Granted May 3, 2005. Assignee: Massachusetts Institute of Technology.

Pending Full Patent Applications

2. S.K. Murthy. “Systems for Producing Cellular Immunotherapeutics and Methods of Use Thereof.” International Patent Application No. PCT/US16/60701 filed November 4, 2016. Assignee: Northeastern University.
3. S.K. Murthy and B.B. Collier. “Dendritic Cell Generator.” International Patent Application No. PCT/US16/40042 filed June 29, 2016. Assignee: Northeastern University.
4. S.K. Murthy, A. Hatch, and G. Hansmann. “Methods and Compositions for Highly Specific Capture and Release of Biological Materials.” International Patent Application No. PCT/US12/23859 filed February 3, 2012 (applications filed in U.S., Europe, Japan, Singapore, India, and South Korea). Assignee: Northeastern University. **Exclusive License granted to Quad Technologies, Corp. on June 28, 2013.**
5. S.K. Murthy, L.H. Lewis, and B.D. Plouffe. “Methods and Compositions for Magnetophoretic Separation of Biological Materials.” International Patent Application No. PCT/US12/23864 filed February 3, 2012. Assignee: Northeastern University.

Pending Provisional Patent Applications

1. S.K. Murthy. “Bioreactor for Autologous T Cell Stimulation.” Provisional U.S. Patent Application No. 62/357,937 filed July 2016. Assignee: Northeastern University.

Other

1. T. Narahari and S.K. Murthy. “Conductive Polymer Patterning Using a Textile Weaving Approach.” Provisional U.S. Patent Application No. 62/180,783 filed June 2015. Assignee: Northeastern University.
2. T. Narahari, S.K. Murthy, and D. Dendukuri. “Fabric-Based Electrophoresis Device.” Provisional U.S. Patent Application No. 62/083,427 filed November 2014. Assignee: Northeastern University.
3. S.K. Murthy and D.I. Walsh. “Chemotaxis Immunophenotyping Device.” Provisional U.S. Patent Application No. 61/955,948 filed March 2014. Assignee: Northeastern University.

4. S.K. Murthy. “Barcoding System to Rapidly Screen Molecules for Chemical & Biological Affinity in High Throughput.” Provisional U.S. Patent Application No. 61/946,934 filed March 2014. Assignee: Northeastern University.
5. S.K. Murthy, A.K.H. Achyuta, and H.G. Pryce Lewis. “Immobilization of Trypsin on Silicone Surfaces to Mitigate Reactive Human Cell Adhesion.” Provisional U.S. Patent Application filed August 2009. Assignee: Northeastern University.

GRANTS

1. NSF/CBET **1645205** **09/01/16-08/31/18**

“EAGER: Biomanufacturing: BATON: Bioreactor for Autologous T Cell Stimulation”

Role: Lead PI (Co-PI: Matthew Goldstein, Neon Therapeutics)

Total Amount Awarded: \$300,000 Amount to S.K. Murthy: \$150,000

This project will create automated bioreactors for dendritic cell-mediated stimulation and expansion of autologous T cells for cancer immunotherapy.

2. NSF/CBET **1622340** **07/01/16-06/30/17**

“STTR Phase I: Affinity Chromatographic Cell Sorting (AFFICS) System for Simultaneous Multiple Cell Separation”

Role: Co-PI (lead PI: Guokui Qin, Quad Technologies)

Total Amount Awarded: \$225,000 Amount to S.K. Murthy: \$67,500

This project will develop a cascading system of affinity separation columns for separation of cells expressing different markers.

3. NIH/NIGMS **R43 GM117932** **03/01/16-08/31/16**

“SBIR Phase I: Acoustic Lysis and Extraction System for Limited Cell Number Applications”

Role: Co-Investigator (PI: Gregory Kellogg, Covaris Corp.)

Total Amount Awarded: \$225,000 Amount to S.K. Murthy: \$19,419

This project will develop miniaturized cell lysis and extraction units for proteomics sample preparation.

4. NSF/CBET **1547785** **09/01/15-08/31/17**

“EAGER: Biomanufacturing: Development of a Quantitative Framework of Directed Stem Cell Differentiation in Scalable Bioreactors”

Role: Co-PI (lead PI: Emmanuel Tzanakakis, Tufts University)

Total Amount Awarded: \$299,973 Amount to S.K. Murthy: \$58,710

This project will develop a quantitative framework for the rational design and optimization of the cultivation of stem cells and their conversion to pancreatic islet cells in bioreactors.

5. NIH/NIAID **U24 AI118665** **06/20/15-5/31/19**

“Automated Patient-Specific Dendritic Cell Generation for Transcriptomics-Driven Vaccinology”

Role: PI

Total Amount Awarded: \$1,411,215

Amount to S.K. Murthy: \$780,203

This project involves design and fabrication of a system to patient-specific, blood-derived cells into dendritic cells for vaccine discovery. This system aims to replace a 16-step manual protocol with a 6-step fully-automated process.

6. CereVasc, LLC

05/26/15-05/25/17

“Testing and Characterization of Endovascular Shunt Prototypes”

Role: sole PI

Total Amount Awarded: \$131,978

Amount to S.K. Murthy: \$131,978

This project consists of blood and cell compatibility testing and in vitro fluid flow characterization of prototypes for a new endovascular shunt device to treat hydrocephalus.

7. U.S.-Israel Binational Science Foundation (BSF)

2013002

10/1/14-9/30/18

“Cleavable Surface Coatings for Microfluidic Devices”

Role: Co-PI (with Prof. Yaakov Nahmias, Hebrew University, Israel)

Total Amount Awarded: \$210,000

Amount to S.K. Murthy: \$105,000

This project will develop new surface coating technologies in devices utilized in stem cell purification.

8. NIH/NIBIB

R01 EB009327 A1

05/01/10-04/30/15

“Microfluidic Cell Separation for Tissue Engineering and Regenerative Medicine”

Role: sole PI

Total Amount Awarded: \$1,887,433

Amount to S.K. Murthy: \$1,198,900

This project aimed to create a range of microfluidic systems for the isolation of functional and stem/progenitor cells from blood, cardiac tissue, intestinal tissue, and skin for tissue engineering. Murthy is the leader of a team that includes 4 co-investigators; project involves 4 institutions including 3 research hospitals.

9. NSF/CBET

0747166

09/01/08-08/31/14

“CAREER: Understanding the Role of Cell Surface Markers in Microfluidic Cell Separation - An Integrated Research and Education Program”

Role: sole PI

Total Amount Awarded: \$525,788

Amount to S.K. Murthy: \$525,788

The major objective of this project was to characterize changes in cell surface receptors induced by fluid shear forces during microfluidic flow.

10. Constitution Medical, Inc.

12/16/11-12/16/13

Role: sole PI

Total Amount Awarded: \$187,196

Amount to S.K. Murthy: \$187,196

This project aimed to apply computational fluid dynamics principles and materials science concepts to refine the design of a blood analysis system.

11. NIH/NHLBI

R21 HL098750

02/01/10-01/31/13

“Tomographic In Vivo Flow Cytometer for Counting Rare Circulating Cells”

Role: Co-investigator (PI: Mark Niedre, NU)

Total Amount Awarded: \$418,000

Amount to S.K. Murthy: \$25,278

The major goal of this project was to create a fluidic-optical interface that can be implanted and monitor rare circulating cells. Murthy's role is to provide cell imaging and fluidics expertise.

12. NSF/CBET (unsolicited) 0827868 08/15/08-08/14/12

“Microfluidic Immunophenotyping for the Diagnosis of Uveitis and Ocular Cancer”

Role: sole PI

Total Amount Awarded: \$259,883 Amount to S.K. Murthy: \$259,883

The major goal of this project was to create microfluidic devices to characterize the cellular and cytokine content of biopsy fluids from the vitreous and aqueous humor.

13. Marion & Jasper Whiting Foundation 05/01/10-04/30/11

Travel Fellowship titled “Microfluidics in Medicine: Translation from the Lab to the Clinic and the Classroom”

Role: sole PI

Total Amount Awarded: \$4,860 Amount to S.K. Murthy: \$4,860

This grant provided travel funds for collaborative research activities as well as pedagogic material development in collaboration with Prof. M. Radisic at the University of Toronto.

14. NSF/CBET (unsolicited) 0932195 09/01/09-08/31/10

“Acquisition of a Cell Lab Quanta SC Benchtop Flow Cytometer”

Role: sole PI

Total Amount Awarded: \$36,240 Amount to S.K. Murthy: \$36,240

This grant partially covered the acquisition costs of the instrument named above.

15. NSF/CBET (unsolicited) 0700764 04/01/07-03/31/10

“Development of Biomaterial Microstructure and Surface Chemistry for Tissue Engineering of Intestine”

Role: Co-PI (Lead PI: Rebecca Carrier, NU)

Total Amount Awarded: \$299,032 Amount to S.K. Murthy: \$86,836

The major goal of this project was to characterize and understand changes in intestinal cell morphology and phenotype as a function of surface topography. Murthy's role was to provide expertise in microstructure fabrication.

16. NIH/NINDS R44 NS047952 (SBIR Phase II) 08/15/07-08/14/09

“Coatings for Biostable Chronic Neural Prostheses”

Role: Sub-contractor (PI: Hilton Pryce Lewis, GVD Corp.)

Total Amount Awarded: \$750,000 Amount to S.K. Murthy: \$161,936

The major objective of this project was to create silicone thin film coatings to insulate and protect neurological implants. Murthy's role was to formulate and implement biological and neurological compatibility tests for candidate materials made by GVD Corp.

17. National Heart Foundation H2007-017 05/01/07-04/30/09

“Microscale Identification of Cardiac Progenitor Cells”

Role: sole PI

Total Amount Awarded: \$60,000 Amount to S.K. Murthy: \$60,000

The major objective of this project was to design microfluidic devices for the isolation of cardiac progenitor cells.

18. NIH/NIBIB R21 EB007317 04/01/07 – 03/31/09

“Cell-Free Assembly of Organized Collagen Arrays”

Role: Paid Consultant (PI: Jeffrey Ruberti, NU)

Total Amount Awarded: \$435,000 Amount to S.K. Murthy: \$7,000

The major goal of this project was to examine the assembly of orthogonally-aligned arrays of collagen using self-assembly techniques. Murthy’s contribution was to provide expertise on surface functionalization and mitigation of undesired binding of proteins.

19. NIH/NIAMS R21 AR053551 04/01/06 – 03/31/08

“Investigation of Collagen as a Smart Engineering Material”

Role: Paid Consultant (PI: Jeffrey Ruberti, NU)

Total Amount Awarded: \$435,000 Amount to S.K. Murthy: \$8,215

The major objective of this project was to examine load-dependent changes in the integrity of collagen fibers. Murthy’s role was to provide expertise in bioconjugation chemistry in the design of force-measurement experiments.

20. NIH/NINDS R44 NS044644 (SBIR Phase II) 09/01/05-08/31/07

“Coatings for Biostable Neural Prostheses”

Role: Paid Consultant (PI: Hilton Pryce Lewis, GVD Corp.)

Total Amount Awarded: \$700,000 Amount to S.K. Murthy: \$1,000

The major goal of this project was to produce fluorocarbon insulating coatings for neuroprosthetic devices. Murthy’s contribution was in the formulation of material characterization metrics.

INVITED PRESENTATIONS

Invited Presentations at Universities (Department Seminars)

1. “Polymer Hydrogels for Affinity-Based Microfluidic Cell Separation: From Laboratory to Commercialization,” Department of Mechanical Engineering, University of Minnesota, Minneapolis, March 2, 2016.
2. “Polymer Hydrogels for Affinity-Based Microfluidic Cell Separation: From Laboratory to Commercialization,” Department of Petroleum and Chemical Engineering, Sultan Qaboos University, Muscat, Oman, December 16, 2014.
3. “Ever Heard About Seaweed, Mucinex, Stem Cells, and the International Space Station in the Same Conversation? A Hopkins Alumnus’ Journey in Science, Engineering, and Entrepreneurship,” Institute for Nanobiotechnology & Department of Chemical and Biomolecular Engineering, Johns Hopkins University, April 29, 2014.
4. “Microfluidics for Purification and Mechanical Stimulation of Stem Cells,” Center for the Science of Therapeutics, Eli and Edythe L. Broad Institute, January 16, 2014.

5. "Microfluidic Cell Separation for Clinical Diagnostics, Tissue Engineering, and Regenerative Medicine," Department of Chemical & Biomolecular Engineering, Cornell University, February 4, 2013.
6. "Microfluidic Cell Separation for Clinical Diagnostics, Tissue Engineering, and Regenerative Medicine," Micro Nano Seminar Series, Department of Mechanical Engineering, Massachusetts Institute of Technology, October 24, 2012.
7. "Microfluidic Cell Separation: Simple Devices for Complex Analytes," Department of Chemical Engineering, Tufts University, January 31, 2011.
8. "Bio-adhesive Microfluidic Channels in Clinical Medicine & Basic Science," Materials Research Science and Engineering Center, Brandeis University, October 14, 2010.
9. "Bio-adhesive Microfluidic Channels in Clinical Medicine & Basic Science," Department of Biomedical Engineering, Tufts University, September 27, 2010.
10. "Bio-adhesive Microfluidic Channels in Clinical Medicine & Basic Science," Joint Department of Biomedical Engineering, University of North Carolina and North Carolina State University, April 29, 2010.
11. "Bio-adhesive Microfluidic Channels in Clinical Medicine & Basic Science," Department of Biomedical Engineering, Duke University & Duke Global Health Institute, March 23, 2010.
12. "Bio-adhesive Microfluidic Channels in Clinical Medicine & Basic Science," Department of Biomedical Engineering, Boston University, March 17, 2010.
13. "Bio-adhesive Microfluidic Channels in Clinical Medicine & Basic Science," Department of Bioengineering, Rice University, February 18, 2010.
14. "Microfluidic Cell Separation: Technological Solutions & Basic Science Questions," Fall Seminar Series of the interdepartmental Program in Polymer Science and Technology (PPST), Massachusetts Institute of Technology, December 9, 2009.
15. "Microfluidic Cell Separation: Applications & Challenges in Tissue Engineering," Department of Chemical and Biomedical Engineering, University of South Florida, September 25, 2009.
16. "Microfluidic Cell Separation: Applications & Challenges in Tissue Engineering," Department of Chemical Engineering, Colorado School of Mines, September 18, 2009.
17. "Microfluidic Cell Separation: Applications & Challenges in Tissue Engineering," Department of Biomedical Engineering, Rensselaer Polytechnic Institute, January 21, 2009.
18. "Microfluidic Cell Separation: Applications & Challenges in Tissue Engineering," Department of Chemical and Biomolecular Engineering, Johns Hopkins University, October 21, 2008.
19. "Microfluidic Cell Separation: Applications & Challenges in Tissue Engineering," Department of Chemical and Biochemical Engineering, University of Maryland – Baltimore County, October 20, 2008.
20. "Microfluidic Cell Separation: Applications & Challenges in Cardiac Tissue Engineering," Department of Chemical Engineering, Arizona State University, March 7, 2008

21. "Microfluidic Cell Separation: Applications & Challenges in Cardiac Tissue Engineering," Department of Chemical and Biomolecular Engineering, Ohio State University, February 14, 2008.
22. "Nanoscale Structures and Patterns as Tools to Study Cell Behavior," Department of Mechanical Engineering, Louisiana State University, February 3, 2006.

Invited Presentations at Academic Research Laboratories

1. "Microfluidic Capture of Endothelial Progenitor Cells: Clinical & Basic Science Applications." Invited presentation at the Edwin L. Steele Laboratory for Tumor Biology (PI: Prof. Rakesh Jain), Massachusetts General Hospital, January 7, 2011.
2. "Surface Engineering in Biological Microfluidic Devices." Invited presentation at the annual Laboratory Short Course organized by the Tissue Engineering Resource Center at Tufts University, Medford, MA, June 29, 2010.
3. "Microfluidic Cell Separation: Applications & Challenges in Cardiac Tissue Engineering," Research Laboratory of Prof. David Weitz, Division of Engineering and Applied Sciences, Harvard University, March 19, 2008.

Invited Presentations at Meetings and Conferences

1. "Fabrics as Platforms for Electrophoretic Separations." Invited presentation at the Annual SciX Conference organized by the Federation of Analytical Chemistry and Spectroscopy Societies (FACSS). September 30, 2015.
2. "Hydrogels for Cell Separation: From Laboratory to Commercialization." Invited presentation at the Microfluidic ChipShop & Fluidgent U.S. Microfluidics Workshop, Cambridge, MA. Sept 25, 2015.
3. "Cell-Based Assays and Methods for Diagnostics." Invited presentation at the CHI 9th Enabling Point-of-Care Diagnostics Conference, Washington DC. August 18, 2015.
4. "Hydrogels for Cell Separation: From Laboratory to Commercialization." Invited presentation at the Third Workshop in Micro- and Nanotechnologies for Medicine at Brigham and Women's Hospital, Cambridge, MA. July 28, 2015.
5. "Hydrogels for Cell Separation: From Laboratory to Commercialization." Invited presentation at the Second Annual Symposium of the Center for Future Technologies in Cancer Care (CFTCC) at Boston University, Boston, MA. May 20, 2014.
6. "Micro- and Nano-scale Fluid Shear Stimulation to Direct Stem Cell Differentiation." Invited presentation at the American Institute of Chemical Engineers National Meeting, San Francisco, CA. November 5, 2013.
7. "Microfluidics in Stem Cell Mechanobiology: Two Early Forays." Invited presentation at the MF4 Microfluidics Consortium American Open Day, Boston, MA. June 4, 2013.
8. "Microfluidic Cell Separation for Regenerative Medicine: Where the CTC Paradigm Does Not Quite Work." Invited presentation at the MF4 Microfluidics Consortium American Open Day, Boston, MA. June 3, 2013.

9. “Microfluidic Enrichment of Intestinal Stem Cells from Native Rat Tissue.” Invited presentation at the 29th International Symposium on MicroScale Bioseparations, Charlottesville, VA. March 13, 2013.
10. “Bioactive Surfaces in Microfluidic Devices.” Invited presentation at the American Institute of Chemical Engineers National Meeting, Pittsburgh, PA. October 31, 2012.
11. “Microfluidic Technologies for Ocular Diagnostics and Regenerative Medicine.” Invited keynote presentation at forum titled “Biomaterials in Medicine” jointly organized by the Agency for Science, Technology, and Research (A*STAR) and Singapore General Hospital, Singapore. November 12, 2011.
12. “Adhesive Surfaces in Microfluidic Channels: New Directions in Surface Chemistry & Cell Separations.” Gordon Conference on Physics & Chemistry of Microfluidics, Waterville Valley, NH. June 28, 2011. (Selected to be one of 16 speakers at this international meeting).
13. “Bio-adhesive Microfluidic Channels in Clinical Medicine & Basic Science.” Invited presentation at the 26th International Symposium on Microscale Bioseparations, San Diego, CA. May 4, 2011.
14. “Microfluidic Cell Separation: Applications & Challenges in Tissue Engineering.” Invited presentation at the MOEMS-MEMS: Micro- and Nanofabrication Symposium at the Society of Photo-Optical Instrumentation Engineers (SPIE) Photonics West Conference, January 26, 2010, San Francisco, CA.
15. “Development of Microfluidics as Endothelial Progenitor Cell Capture Technology for Cardiovascular Tissue Engineering and Diagnostic Medicine.” Invited presentation at the Center for Innovation in Medicine and Technology (CIMIT) Forum, March 24, 2009, Boston, MA.
16. “Surface Engineering in Biological Microfluidic Devices.” Invited presentation at the first annual Methods in Bioengineering Conference organized by the Center for Engineering in Medicine, Harvard Medical School and Massachusetts General Hospital, July 19, 2006, Boston, MA.

Invited Presentations at Companies and National Laboratories

1. “Microfluidic Cell Separation for Tissue Engineering and Regenerative Medicine.” Invited presentation at Cytonome LLC, Boston, MA. September 29, 2014.
2. “Microfluidics for Cell Separations and Protein Detection.” Invited presentation at Achira Labs, Bangalore, India. May 2, 2012.
3. “Adhesive Surfaces in Microfluidic Channels: New Directions in Surface Chemistry & Cell Separations.” Invited presentation at MIT Lincoln Laboratory, Lexington, MA. April 13, 2012.
4. “Adhesive Surfaces in Microfluidic Channels: New Directions in Surface Chemistry & Cell Separations.” Invited presentation at EMD Millipore Corp., Danvers, MA. February 29, 2012.

5. “Microfluidic Diagnostics for Ocular Diseases.” Invited presentation at the Singapore Eye Research Institute, Singapore. November 9, 2011.
6. “Bio-adhesive Microfluidic Channels in Clinical Medicine & Basic Science.” Invited presentation at Abbott Laboratories, Worcester, MA, December 13, 2010.
7. “Bio-adhesive Microfluidic Channels in Clinical Medicine & Basic Science.” Invited presentation at Claros, Inc., Woburn, MA, January 22, 2010.
8. “Microfluidic Cell Separation: Applications & Challenges in Tissue Engineering.” Invited presentation at the Biomedical Engineering Center, Charles Stark Draper Laboratory, December 11, 2008.
9. “Microfluidic Cell Separation.” Invited presentation at the National Institute of Standards and Technology (NIST), Gaithersburg, MD, March 13, 2007.

Guest Lectures at Other Universities

1. “Hydrogels for Microfluidic Cell Separation: From Laboratory to Commercialization.” Guest lecture in graduate elective course titled “Applied Microfluidics” taught by Prof. Patrick Doyle, Department of Chemical Engineering, Massachusetts Institute of Technology. October 14, 2014.

Invited Presentations and Guest Lectures at Northeastern University

1. “Microfluidic Cell Separation for Regenerative Medicine.” One of three Inaugural Beverly Brenner Distinguished Lectures at the 40th Anniversary Celebration of the Barnett Institute of Chemical & Biological Analysis. April 25, 2013.
2. “Adhesive Capture-Based Microfluidic Isolation of Cells and Proteins.” Invited presentation at the second annual joint meeting of the Broad Institute of MIT and Harvard and the Barnett Institute of Chemical & Biological Analysis of Northeastern University. December 9, 2011.
3. “Microfluidic Capture of Endothelial Progenitor Cells: Clinical & Basic Science Applications.” Invited presentation at the Pharmaceutical Sciences Colloquium. December 16, 2010.
4. “Microfluidic Cell Separation: Applications & Challenges in Tissue Engineering.” Invited presentation at the fall seminar series of the Center for Interdisciplinary Research on Complex Systems (CIRCS). September 29, 2009.
5. “Biological Surface Engineering & Microfluidics.” Invited presentation at the Department of Chemistry and Chemical Biology’s Research Retreat. May 18, 2007.
6. “Nanoscale Structures and Patterns as Tools to Study Cell Behavior.” Guest lecture in INT G270, Introduction to Nanomedicine. October 30, 2007.
7. “Biological Surface Engineering and Microfluidics.” Invited presentation at the Department of Chemistry and Chemical Biology Research Retreat. May 18, 2007.
8. “Nanoscale Structures and Patterns as Tools to Study Cell Behavior.” Guest lecture in INT G270, Introduction to Nanomedicine. October 6, 2006.

9. “Biomedical Applications of Microfluidics and Nanoscale Surface Engineering.” Invited presentation in the IGERT Nanomedicine Seminar Series. May 12, 2006.

MEETINGS AND CONFERENCES

Published Abstracts and Proceedings

1. B.D. Plouffe, J.V. Green, and S.K. Murthy (invited speaker). “Microfluidic Cell Separation: Applications and Challenges in Tissue Engineering.” *Proceedings of the Society of Photo-Optical Instrumentation Engineers (SPIE)*, **2010**, 7593, P1-10.
2. S.K. Murthy (speaker), Brian D. Plouffe, and Milica Radisic. “Surface Engineering in Microfluidic Devices for the Isolation of Smooth Muscle Cells and Endothelial Cells.” *Society for Biomaterials Proceedings*. Presented on April 20, 2007; 2007 Annual Meeting in Chicago, IL.
3. S.K. Murthy (speaker), Brian D. Plouffe, and Milica Radisic. “Surface Engineering in Microfluidic Devices for the Isolation of Smooth Muscle Cells and Endothelial Cells,” *Materials Research Society Symposium Proceedings*, **2007**, 1004-P01-03, (presented on April 10, 2007; Spring 2007 National Meeting in San Francisco, CA).
4. S.K. Murthy (speaker) and K.K. Gleason. “Hot-filament chemical vapor deposition: A novel technique for the synthesis of fluorocarbon-organosilicon copolymer thin films,” *Abstracts of Papers of the American Chemical Society*, **2002**, 224, U533-U534 (presented on August 18, 2002; Fall 2002 National Meeting).

Other Presentations (International)

Posters

1. J.V. Green, B.D. Plouffe, M. Radisic, and S.K. Murthy (presenter). “Microfluidic Cell Separation – Applications & Challenges in Tissue Engineering.” Gordon Conference on Physics & Chemistry of Microfluidics, Lucca, Italy. June 30-July 2, 2009.

Oral Presentations by Students or Postdocs Advised or Co-Advised by S.K. Murthy

1. M. Tasso (speaker), K. Jaeras, S. Dai, A.R. Ivanov, B.L. Karger, S.K. Murthy, “Microfluidic Pillar-Array Trypsin Chip Within an Integrated Sample Preparation Context.” Microscale Bioseparations Annual Conference. Geneva, Switzerland. February 13, 2012.
2. J.V. Green (presenter), D. Sun, A. Hafezi-Moghadam, K. Lashkari, and S.K. Murthy. “Microfluidic ELISA for Ocular Diagnostics.” Micro-Total Analysis Systems (microTAS) Annual Meeting, Groningen, Netherlands. October 4, 2010.
3. B.D. Plouffe (presenter), A. Hatch, G. Hansmann, and S.K. Murthy. “Adhesion-Based Microfluidic Endothelial Progenitor Cell Capture Technology for Cardiovascular Medicine.” Micro-Total Analysis Systems (microTAS) Annual Meeting, Groningen, Netherlands. October 4, 2010.

Presentations by Collaborators

1. M. Radisic (speaker), B.D. Plouffe, M. A. Brown, and S.K. Murthy. “Enrichment of heart cell sub-populations on peptide immobilized surfaces.” 8th World Biomaterials Congress, Amsterdam, Netherlands. May 30, 2008.

Other Presentations (National)

Presentations by S.K. Murthy

1. S.K. Murthy. “Microfluidic Isolation of Epidermal Skin Stem Cells Enables Hair Growth in Nude Mice.” Tissue Engineering and Regenerative Medicine International Society-North America (TERMIS-NA) 2013 Annual Conference and Exposition, Atlanta, GA. November 13, 2013.
2. J.V. Green and S.K. Murthy. “Microfluidic Cell Immunophenotyping and Biomarker Detection for the Diagnosis of Ocular Diseases.” Biomedical Engineering Society Annual Fall Meeting, Hartford, CT. October 14, 2011.
3. J.V. Green, D. Sun, A. Hafezi-Moghadam, K. Lashkari, and S.K. Murthy. “Microfluidic ELISA and Cell Immunophenotyping for Ocular Diagnostics.” Biomedical Engineering Society Annual Fall Meeting, Austin, TX. October 7, 2010.
4. D. Nagesha, B.D. Plouffe, M. Phan, L.H. Lewis, S. Sridhar, and S.K. Murthy. “Enhanced Magnetic Properties in Functionalized Iron Oxide Nanoparticles for Biomedical Applications.” American Institute of Chemical Engineers National Meeting, Nashville, TN. November 12, 2009.
5. J.V. Green, M. Radisic, and S.K. Murthy. “Deterministic Lateral Displacement as a Means to Enrich Large Cells for Tissue Engineering.” American Institute of Chemical Engineers National Meeting, Nashville, TN. November 11, 2009.
6. B.D. Plouffe, M.A. Brown, R. K. Iyer, M. Radisic, and S.K. Murthy. “Capture and Release of Cells in Microfluidic Devices Using Peptide-Functionalized Alginate Gels.” American Institute of Chemical Engineers National Meeting, Nashville, TN. November 10, 2009.
7. A.K.H. Achyuta, V.S. Polikov, A.J. White, H.G. Pryce Lewis, and S.K. Murthy. “Neurocompatibility Assessment of Insulating Polymer Coatings Using a Two-Dimensional Glial Scar Assay.” American Institute of Chemical Engineers National Meeting, Nashville, TN. November 11, 2009.
8. B.D. Plouffe, M.A. Brown, R. K. Iyer, M. Radisic, and S.K. Murthy. “Capture and Release of Cells in Microfluidic Devices Using Peptide-Functionalized Alginate Gels.” Biomedical Engineering Society Annual Fall Meeting, Pittsburgh, PA. October 9, 2009.
9. B.D. Plouffe and S.K. Murthy. “Microfluidic Immunophenotyping of Endothelial Progenitor Cells.” 23rd International Symposium on Microscale Bioseparations, Boston, MA. February 3, 2009.
10. J.V. Green, B.D. Plouffe, M. Radisic, and S.K. Murthy. “Negative Selection Separation of Cells in Microfluidic Devices.” American Institute of Chemical Engineers National Meeting, Philadelphia, PA. November 18, 2008.

11. J.V. Green, B.D. Plouffe, M. Radisic, and S.K. Murthy. “Microfluidic Cell Separation for Tissue Engineering and Cell-Based Regenerative Therapeutics.” Biomedical Engineering Society Annual Fall Meeting, St. Louis, MO. October 2, 2008.
12. S.K. Murthy, M. Radisic, and B. Plouffe. “Microfluidic Separation of Cardiac Cell Subpopulations.” American Institute of Chemical Engineers National Meeting, Salt Lake City, UT. November 5, 2007.
13. S.K. Murthy, A. Sin, and M. Toner. “Surface Engineering in Microfluidic Devices for the Isolation of T and B Lymphocytes.” American Institute of Chemical Engineers National Meeting, Austin, TX. November 12, 2004.
14. S.K. Murthy, B.D. Olsen, and K. K. Gleason. “Peptide Attachment to Vapor Deposited Polymeric Thin Films.” American Institute of Chemical Engineers National Meeting, Austin, TX. November 10, 2004.
15. S.K. Murthy and K. K. Gleason. “Hot-Filament Chemical Vapor Deposition: A Novel Technique for the Synthesis of Fluorocarbon-Organosilicon Copolymer Thin Films.” American Institute of Chemical Engineers National Meeting, Indianapolis, IN. November 6, 2002.
16. S.K. Murthy, B.D. Olsen, and K. K. Gleason. “Chemical Vapor Deposition of Fluorocarbon-Organosilicon Copolymers as Biopassivation Coatings for Neural Prostheses.” American Institute of Chemical Engineers National Meeting, Indianapolis, IN. November 5, 2002.
17. S.K. Murthy and K.K. Gleason. “Hot-Filament Chemical Vapor Deposition of Fluorocarbon-Organosilicon Copolymer Thin Films.” 48th American Vacuum Society Conference in San Francisco, CA. November 1, 2001.

Posters Presented by S.K. Murthy

1. B.D. Plouffe, A. Hatch, G. Hansmann, S.K. Murthy. “Microfluidic Endothelial Progenitor Cell Capture Technology for Cardiovascular Diagnostic Medicine.” Biomedical Engineering Society Annual Fall Meeting, Austin, TX. October 9, 2010.
2. A.K.H. Achyuta, A.J. White, H.G. Pryce Lewis, and S.K. Murthy. “Vapor Deposited Silicone Thin Films as Neuroprosthetic Device Insulators.” Biomedical Engineering Society Annual Fall Meeting, Pittsburgh, PA. October 9, 2009.
3. J.V. Green and S.K. Murthy. “Microfluidic Isolation of Stem Cells by Negative Selection Depletion.” Biomedical Engineering Society Annual Fall Meeting, Pittsburgh, PA. October 9, 2009.

Oral Presentations by Students or Postdocs Advised or Co-Advised by S.K. Murthy

1. T. Narahari (speaker), D. Dendukuri, and S.K. Murthy, “Woven Fabric As a Low-Cost Microfluidic Platform for Tuned Electrophoretic Separations.” Pittcon National Meeting, New Orleans, LA. March 11, 2015.
2. T. Narahari (speaker), D. Dendukuri, and S.K. Murthy, “Woven Fabric As a Low-Cost Microfluidic Platform for Tuned Electrophoretic Separations.” American Institute of Chemical Engineers National Meeting, Atlanta, GA. November 17, 2014.

3. D.I. Walsh (speaker), G. Sommer, U. Schaff, G. Jaffe, P. Hahn, and S.K. Murthy, "Lab-on-a-Disk Immunoassay for Ocular Diagnostics." 40th Annual Northeast Bioengineering Conference, April 26, 2014.
4. T. Narahari (speaker), D. Dendukuri, and S.K. Murthy, "Fabric Microfluidics for Low-Cost Protein Separations." American Institute of Chemical Engineers National Meeting, San Francisco, CA. November 4, 2013.
5. T. Narahari (speaker), D. Dendukuri, and S.K. Murthy, "Fabric Microfluidics for Low-Cost Protein Separations." U.K. Royal Society of Chemistry Analytical Research Forum 2013, Stevenage, U.K., July 8-10, 2013.
6. S.H. Kevlahan (speaker), R.L. Carrier, and S.K. Murthy, "Microfluidic Enrichment of Intestinal Progenitor Cells for Vasculogenic Co-Culture." 17th Annual Hilton Head Workshop on Regenerative Medicine, Hilton Head, SC, March 22, 2013.
7. S.H. Kevlahan (speaker), R.L. Carrier, and S.K. Murthy, "Label-Free Microfluidic Isolation of Intestinal Stem and Progenitor Cells from Native Rat Tissue." Tissue Engineering and Regenerative Medicine International Society-North America (TERMIS-NA) 2011 Annual Conference and Exposition, Houston, TX, December 11-14, 2011.
8. B. Zhu (speaker), S.A. Melotti, J.W. Ruberti, and S.K. Murthy, "Separation of Corneal Progenitor Cells from Heterogeneous Cultures of Human Corneal Cells" Tissue Engineering and Regenerative Medicine International Society-North America (TERMIS-NA) 2011 Annual Conference and Exposition, Houston, TX, December 11-14, 2011.
9. M. Tasso (speaker), Z. S. Zhou and S. K. Murthy, "Biofunctional, Cleavable Microfluidic Surfaces for Efficient Capture and Release of Stem and Progenitor Cells from Whole Blood." Materials Research Society Fall 2011 Meeting, Boston, MA, November 28 - December 2, 2011.
10. A. Hatch (speaker), G. Hansmann and S.K. Murthy, "Capture and Release of Endothelial Progenitor Cells in a Microfluidic Channel." Materials Research Society Spring 2011 National Meeting, San Francisco, CA, April 28, 2011.
11. J.V. Green (speaker) and S.K. Murthy, "Microfluidic Cell Immunophenotyping for Ocular Diagnostics." Materials Research Society Spring 2011 National Meeting, San Francisco, CA, April 28, 2011.
12. B.D. Plouffe (speaker), G. Hansmann, A. Hatch, A. von Gise, H. Sallmon, R.T. Zamanian and S.K. Murthy, "Microfluidic Endothelial Progenitor Cell Capture for Point-of-Care Cardiovascular Diagnostics Materials Research Society Spring 2011 National Meeting, San Francisco, CA. April 27, 2011.
13. B.D. Plouffe (speaker), L.H. Lewis and S.K. Murthy, "Isolation of Rare-cell Populations via a Rationally Designed Microfluidic Magnetophoresis Device" Materials Research Society Spring 2011 National Meeting, San Francisco, CA. April 27, 2011.
14. J.V. Green (speaker), and S.K. Murthy. "Microfluidic ELISA for Ocular Diagnostics." Materials Research Society Spring 2010 National Meeting, San Francisco, CA. April 6, 2010.
15. B.D. Plouffe (speaker), D. K. Nagesha, S.K. Murthy, and L.H. Lewis. "Towards Cell Capture and Isolation: Derivation and Modeling of Forces on a Magnetically Labeled Cell within a Microfluidic Device Design." Materials Research Society Spring 2010 National Meeting, San Francisco, CA. April 6, 2010.

16. A.K.H. Achyuta (speaker), Kyle P. Stephens, H.G. Pryce Lewis, and S.K. Murthy. "Immobilized Trypsin as a Surface Coating to Prevent Reactive Cell Adhesion on Silicone Surfaces." Materials Research Society Fall 2009 National Meeting, Boston, MA. December 1, 2009.
17. B.D. Plouffe (speaker), M.A. Brown, M. Radisic, and S.K. Murthy. "Capture and Release of Cardiac Fibroblasts in Microfluidic Devices using Peptide-Functionalized Alginate Gels." Materials Research Society Spring 2009 National Meeting, San Francisco, CA. April 15, 2009.
18. J.V. Green (speaker), M. Radisic, and S.K. Murthy. "Peptide-Functionalized Surfaces in Microfluidic Devices for Cell Separation by Negative Selection." Materials Research Society Spring 2009 National Meeting, San Francisco, CA. April 15, 2009.
19. L. Wang (speaker), S.K. Murthy, G. Barabino and R.L. Carrier. "Effect of Biomimetic Substrate Topography on Intestinal Epithelial Cell Behavior." American Institute of Chemical Engineers National Meeting, Philadelphia, PA. November 18, 2008.
20. M.A. Brown (speaker), S. K. Murthy, and M. Radisic. "Characterization of Microfluidic Devices for Cell Separation via Adhesion to Peptide-Functionalized Surfaces." American Institute of Chemical Engineers National Meeting, Philadelphia, PA. November 17, 2008.
21. D.K. Nagesha (speaker), B.D. Plouffe, M. Phan, L.H. Lewis, S. Sridhar, and S.K. Murthy, "Functionalization-Induced Improvement of Technical Magnetic Properties in Fe₃O₄ Nanoparticles." 53rd Annual Conference on Magnetism and Magnetic Materials, Austin, TX. November 12, 2008.
22. L. Wang (speaker), S.K. Murthy, and R.L. Carrier. "Intestinal Epithelial Cell Response to Crypt-like Substrate Topography." 234th American Chemical Society National Meeting, Boston, MA. August 19-23, 2007.
23. M.A. Brown (speaker), S. K. Murthy, and M. Radisic. "Peptide-Mediated Differential Adhesion of Neonatal Rat Heart Cells in Microfluidic Shear Flow." Tissue Engineering and Regenerative Medicine Society North American Chapter Meeting, Toronto, Ontario, Canada. June 14, 2007.
24. L. Wang (speaker), S.K. Murthy, M. Dokmeci, and R.L. Carrier. "Chemical and Topographical Modification to Polydimethylsiloxane (PDMS) Surfaces Affect Growth and Adhesion of Caco-2 Cells." American Institute of Chemical Engineers National Meeting, San Francisco, CA. November 16, 2006.

Posters Presented by Students or Postdocs Advised or Co-Advised by S.K. Murthy

1. A. Adeniran-Catlett (presenter), E. Beguin, F. Bozal, and S.K. Murthy, "Shear Stimulation Differentiation of Bone Marrow Derived hMSCs Towards the Chondrocytic Lineage." Biomedical Engineering Society Annual Meeting, San Antonio, TX, October 24, 2014.
2. B.D. Plouffe (presenter) and S.K. Murthy, "Rapid Point-of-Collection Testing for Delta9-Tetrahydrocannabinol in Oral Fluid." Society for Forensic Toxicology Annual Meeting, Grand Rapids, MI, October 19, 2014.
3. A. Adeniran-Catlett (presenter) and S.K. Murthy, "Accelerated Differentiation of Mesenchymal Stem Cells Toward Adipogenic Lineage via Suspension-Based Shear Stimulation." 40th Annual Northeast Bioengineering Conference, April 27, 2014.

4. B. Zhu (presenter), J. Smith, M.L. Yarmush, Y. Nahmias, B.J. Kirby, and S.K. Murthy. "Using Microfluidic Devices to Enrich Mouse Epidermal Stem Cells for Skin Tissue Engineering." 17th Annual Hilton Head Workshop on Regenerative Medicine, Hilton Head, SC, March 22, 2013.
5. D.A.L. Vickers (presenter), E.J. Chory, and S.K. Murthy, "Separation of Two Phenotypically Similar Cell Types Using PEG-y-Lated Microfluidic Channels." Biomedical Engineering Society Annual Meeting, Atlanta, GA, October 25, 2012.
6. A. Adeniran-Catlett (presenter) and S.K. Murthy, "Suspension Based Differentiation of Human Adult Stem Cells." Biomedical Engineering Society Annual Meeting, Atlanta, GA, October 25, 2012.
7. A. Hatch (presenter), G. Hansmann, J. Melero-Martin and S.K. Murthy, "Microfluidic Isolation of Endothelial Progenitor Cells for Tissue Engineering and Cell-Based Therapeutics." Tissue Engineering and Regenerative Medicine International Society-North America (TERMIS-NA) 2011 Annual Conference and Exposition, Houston, TX, Dec 11-14, 2011.
8. A. Hatch (presenter) and S.K. Murthy, "Capture and Release of Endothelial Progenitor Cells from Whole Blood for Tissue Engineering Applications." Biomedical Engineering Society (BMES) 2011 Annual Meeting, Hartford, CT, October 12-15, 2011.
9. S.H. Kevlahan (presenter), R.L. Carrier and S.K. Murthy, "Selective Capture and Release of Intestinal Progenitor Cells from Digested Rat Tissue" Biomedical Engineering Society (BMES) 2011 Annual Meeting, Hartford, CT, October 12-15, 2011.
10. D.A.L. Vickers (presenter) and S.K. Murthy, "Phenotyping of Endothelial Cells via Receptor Expression Changes in Microfluidic Channels." Biomedical Engineering Society Annual Meeting, Hartford, CT, October 12-15, 2011.
11. D.A.L. Vickers (presenter), E. Chory, and S.K. Murthy, "Endothelial Cell Identification Using PEG-ylated Microfluidic Channels." Biomedical Engineering Society (BMES) 2011 Annual Meeting, Hartford, CT, October 12-15, 2011.
12. B.Zhu (presenter), S. A. Melotti, J.W. Ruberti, and S.K. Murthy, "Microfluidic Capture of Corneal Progenitor Cells from Primary Cultures of Human Corneal Stromal Cells." Biomedical Engineering Society (BMES) 2011 Annual Meeting, Hartford, CT, October 12-15, 2011.
13. S.H. Kevlahan (presenter), R.L. Carrier, and S.K. Murthy, "Label-Free Isolation of Intestinal Progenitor Cells from Native Rat Tissue Using Microfluidic Devices" Miniaturized Systems for Chemistry and Life Sciences (MicroTAS) 2011 Annual Meeting, Seattle, WA, October 2-6, 2011.
14. A. Hatch (presenter), G. Hansmann, J. Melero-Martin and S.K. Murthy, "Capture and Release of Endothelial Progenitor Cells in a Microfluidic Channel." National Heart, Lung and Blood Institute Symposium on Cardiovascular Regenerative Medicine, Bethesda, MD, October 4, 2011.
15. J.V. Green (presenter) and S.K. Murthy, "Microfluidic Immunophenotyping and Cytokine Detection for the Diagnosis for Uveitis and Ocular Cancer." Association for Research in Vision and Ophthalmology (ARVO) 2011 Annual Meeting, Fort Lauderdale, FL, May 1-5, 2011.

16. G. Hansmann, B.D. Plouffe (presenter), A. Hatch, A.von Gise, H. Sallmon, R.T. Zamanian, and S.K. Murthy, "Design And Validation Of A Novel Endothelial Progenitor Cell Capture Chip And Its Application In Patients With Pulmonary Arterial Hypertension" 2011 Pediatric Academic Societies and Asian Society for Pediatric Research Joint Meeting, Denver, CO. May 3, 2011.
17. D.A.L. Vickers (presenter) and S.K. Murthy. "Identification of Endothelial Cells Using Receptor Expression Changes in Microfluidic Channels," Society for Biomaterials Annual Spring Meeting, Orlando, FL. April 15, 2011.
18. A. Hatch (presenter), G. Hansmann and S.K. Murthy. "Capture and Release of Endothelial Progenitor Cells in a Microfluidic Channel." Society for Biomaterials Annual Spring Meeting, Orlando, FL. April 15, 2011.
19. D.A.L. Vickers (presenter) and S.K. Murthy. "Endothelial Cell Phenotyping Using Receptor Expression Changes in Microfluidic Channels," Biomedical Engineering Society Annual Fall Meeting, Austin, TX. October 7, 2010.
20. B.D. Plouffe (presenter), D.K. Nagesha, R.S. DiPietro, D. Heiman, S.K. Murthy, and L.H. Lewis. "Thermomagnetic Measurement of Magnetic Nanoparticle Size Distribution," 11th Joint Magnetism and Magnetic Materials-Intermag Conference, Washington, DC. January 19, 2010.
21. A.K.H. Achyuta (presenter), V.S. Polikov, A.J. White, H.G. Pryce Lewis, and S.K. Murthy. "Use of an In Vitro Glial Scar Assay to Assess Neurocompatibility of Vapor Deposited Silicone Coatings." Materials Research Society Fall 2009 National Meeting, Boston, MA. December 1, 2009.
22. J.V. Green (presenter) and S.K. Murthy. "Effect of Microchannel Geometry in a Cell-Affinity Chromatography Process." 23rd International Symposium on Microscale Bioseparations, Boston, MA. February 4, 2009.
23. J.V. Green, B.D. Plouffe (presenter), M. Radisic, and S.K. Murthy. "Effect of Microchannel Geometry in a Cell-Affinity Chromatography Process." 23rd International Symposium on Microscale Bioseparations, Boston, MA. February 4, 2009.
24. B.D. Plouffe (presenter), T. Kniazeva, J.E. Mayer, S.K. Murthy, and V.L. Sales. "Development of Microfluidics as Endothelial Progenitor Cell Capture Technology for Cardiovascular Tissue Engineering and Diagnostic Medicine." Center for Integration of Medicine & Innovative Technology (CIMIT) Innovation Congress 2008, Boston, MA. October 28-29, 2008.
25. J.V. Green (presenter), M. Radisic, and S.K. Murthy. "Microfluidic Cell Separation for Tissue Engineering and Cell-Based Regenerative Therapeutics." Center for Integration of Medicine & Innovative Technology (CIMIT) Innovation Congress 2008, Boston, MA. October 28-29, 2008.
26. L. Wang (presenter), S.K. Murthy, G. Barabino and R.L. Carrier. "Influence of Biomimetic Micro-well Substrate Topography on Intestinal Epithelial Cell Morphology, Proliferation, and Enzyme Activity." 35th Controlled Release Society Annual Meeting, New York, NY. July 15, 2008.
27. B.D. Plouffe (presenter), M. Radisic, and S.K. Murthy. "Peptide-Mediated Selective Adhesion of Smooth Muscle and Endothelial Cells in Microfluidic Shear Flow." 7th Annual New England Science Symposium, Harvard Medical School, Boston, MA. April 6, 2008.

28. B.D. Plouffe (presenter), M. Radisic, and S.K. Murthy. "Peptide-Mediated Selective Adhesion of Smooth Muscle and Endothelial Cells in Microfluidic Shear Flow." 2nd Annual Methods in Bioengineering Conference, Cambridge, MA. July 12-13, 2007.

Other Presentations (Internal)

Posters

1. D.A.L. Vickers (presenter) and S.K. Murthy. "Endothelial Cell Identification Using PEG-y-lated Microfluidic Channels," NU Research and Scholarship Expo, Boston, MA. April 6, 2011.
2. A. Hatch (presenter) and S.K. Murthy. "Engineered Alginate Hydrogels for Effective Microfluidic Capture and Release of Endothelial Progenitor Cells from Whole Blood." NU Research and Scholarship Expo, Boston, MA. April 6, 2011.
3. B.D. Plouffe (presenter), L.H. Lewis, and S.K. Murthy. "Isolation of Rare-Cell Populations via a Rationally Designed Microfluidic Magnetophoresis Device" NU Research and Scholarship Expo, Boston, MA. April 6, 2011.
4. S.H. Kevlahan (presenter), R.L. Carrier, and S.K. Murthy. "Selective Capture and Release of Intestinal Progenitor Cells from Digested Rat Tissue", NU Research and Scholarship Expo, Boston, MA. April 6, 2011.
5. B.D. Plouffe (presenter), D.K. Nagesha, M. Phan, L.H. Lewis, S. Sridhar, and S.K. Murthy. "Functionalization-Induced Improvement in Magnetic Properties of Fe₃O₄ Nanoparticles for Biomedical Applications." NU Research and Scholarship Expo. March 26, 2009.
6. A.K.H. Achyuta (presenter), A.J. White, H.G. Pryce Lewis, and S.K. Murthy. "Incorporation of Linear Spacer Molecules in Vapor Deposited Silicone Polymer Thin Films." NU Research and Scholarship Expo. March 26, 2009.
7. J.V. Green (presenter) and S.K. Murthy. "Adhesion-Based Microfluidic Cell Separation." NU Research and Scholarship Expo. March 26, 2009.
8. B.D. Plouffe (presenter), M. Radisic, and S.K. Murthy. "Peptide-Mediated Selective Adhesion of Smooth Muscle and Endothelial Cells in Microfluidic Shear Flow." NU Research and Scholarship Expo. March 26, 2008.
9. A.K.H. Achyuta (presenter), R. Cieri, K. Unger, and S.K. Murthy. "Synergistic Effect of Immobilized Laminin and Nerve Growth Factor on PC12 Cell Neurite Outgrowth." NU Research and Scholarship Expo. March 26, 2008.
10. K. Kim, C. Naggar, D. Nagesha, S. Sridhar, S.K. Murthy, and P. Beuning. "DNA Damage Induced by Quantum Dots." NU Research and Scholarship Expo. March 26, 2008.

TEACHING AND ADVISING

TEACHING

COURSES TAUGHT

(Student evaluation ratings are on a 1-5 scale with 5.0 being best possible score)

- Fall 2012 CHME 7390 Graduate Seminar Credits: 1 Students: 37
Overall instructor rating: 4.3 (university average: 4.3)
- Spring 2012 CHME4703 Chemical Process Design Credits: 4 Students: 75
(Capstone Design Course; Murthy was sole instructor)
Overall instructor rating: 4.0 (university average: 4.3)
- Fall 2011 CHME 7390 Graduate Seminar Credits: 1 Students: 25
Overall instructor rating: 4.5 (university average: 4.3)
- Spring 2011 CHME 4510 Chem. Engg. Kinetics Credits: 4 Students: 33
Overall instructor rating: 4.7 (university average: 4.3)
- Fall 2010 CHME 4510 Chem. Engg. Kinetics Credits: 4 Students: 22
Overall instructor rating: 4.9 (university average: 4.2)
- Spring 2010 CHME 5699 Biomicrofluidics Credits: 4 Students: 24
Overall instructor rating: 4.5 (university average: 4.3)
- Spring 2010 CHME 4510 Chem. Engg. Kinetics Credits: 4 Students: 27
Overall instructor rating: 4.5 (university average: 4.3)
- Summer II 2009 CHE U521 Unit Operations Laboratory Credits: 2 Students: 24
(Team taught with Profs. Ziemer and Podlaha-Murphy)
- Spring 2009 CHE U320 Chem. Engg. Thermodynamics I Credits: 4 Students: 44
Overall instructor rating: 4.8 (university average: 4.2)
- Fall 2008 CHE U510 Chem. Engg. Kinetics Credits: 4 Students: 23
Overall instructor rating: 4.4 (university average: 4.2)
- Summer II 2008 CHE U521 Unit Operations Laboratory Credits: 2 Students: 18
(Team taught with Profs. Burkey, Willey, and Sacco)
- Spring 2008 CHE U320 Chem. Engg. Thermodynamics I Credits: 4 Students: 36
Overall instructor rating: 4.1 (university average: 4.2)
- Fall 2007 CHE U510 Chem. Engg. Kinetics Credits: 4 Students: 18
Overall instructor rating: 4.2 (university average: 3.9)

- Summer II 2007 CHE U521 Unit Operations Laboratory Credits: 2 Students: 24
(Team taught with Dr. M. Manning and Profs. Sacco and Burkey)
- Spring 2007 CHE U320 Chem. Engg. Thermodynamics I Credits: 4 Students: 19
Overall instructor rating: 3.1 (university average: 3.9)
- Spring 2007 CHE U521 Unit Operations Laboratory Credits: 2 Students: 22
(Team taught with Profs. Willey, Burkey, Carrier and Lee-Parsons)
- Fall 2006 CHE U309 Chem. Engg. Calculations Lab Credits: 1 Students: 45
Overall instructor rating: 4.3 (university average: 3.8)
- Fall 2006 CHE U521 Unit Operations Laboratory Credits: 2 Students: 13
(Team taught with Profs. Willey, Sacco, Burkey, Carrier and Lee-Parsons)
- Spring 2006 CHE G260 Nanomaterials Credits: 4 Students: 8
Overall instructor rating: 4.6 (university average: 4.3)

NEW COURSES DEVELOPED

- **GE5000 (sect 3) Iterative Product Prototyping**
(Initially offered Spring 2016)
Develops in depth knowledge and experience in prototyping by focusing on processes and technologies that are used in different industries. Teaches students the prototyping cycle from ideation to prototype development to testing and analysis with an emphasis on iteration. Provides knowledge on how different kinds of prototypes can address design and user-interface needs versus functional needs. Seeks to offer students information on topics such as 3D printing, simulation, embedded systems, ideation, product testing, prototype analysis, and prototype iteration.
- **GE5000 (sec 2) Customer-Driven Innovation for Engineers**
(Initially offered Fall 2015)
This course is focused on analyzing common shortcomings of early startups and creating understanding for successful innovation design and commercialization strategy. The key to success is in correct identification, understanding, and proper relationship with one's customer. Particular emphasis is made on understanding real market needs and how to gather relevant information to make the educated decision early on. The course will demonstrate through a series of practical projects how to assess your capabilities, find and communicate with your end users and clients and correspondently develop your product to fit their needs.
- **GE5000 (sec 1) Creative Product Design for Engineers**
(Initially offered Fall 2014)
Learn about the iterative product design cycle with a focus on the end user. Students will develop a product in a team based workshop environment. Product concepts will be generated by observing the intended customer and the designs refined through testing with the end user. Apply brainstorm techniques, rapid prototyping, user feedback and

manufacturing considerations to a semester long design project, putting classroom learning to practice.

- **GE5100 Product Development for Engineers**

(Initially offered Fall 2013)

This course focuses on the main processes needed to develop a complex, high technology product. Particular emphasis is made on the most important techniques and approaches to be used in a start-up environment. This course will demonstrate, through a running practical project, how to design a new product; executed through a series of small projects for each phase of the product development process. Topics to be covered include: product lifecycle, new product development processes, project planning and management, value proposition design, new product idea generation, and the systems approach to product development.

- **CHME4704 Chemical Process Design (Changes Made to Existing Course)**

(Spring 2012)

I implemented a mentoring program whereby each 3-person team of students was paired with a chemical engineering alumnus of the department in order to provide real –world technical and business perspective on senior design projects. I also implemented live video streaming of final design presentations together with teleconferencing for questions to allow departmental alumni and friends across the world to view the final design presentations and ask questions.

- **CHME 5699 Biomicrofluidics**

(Offered Spring 2010)

Course Description: Microfluidic technologies are being increasingly incorporated into both large and small scale biomedical devices for applications ranging from clinical specimen analysis, early diagnostics, and point of care diagnostics to tissue and stem cell engineering. This course will serve as a general introduction to this subject area and cater to students from a broad range of disciplines. Topics to be covered include: microfluidic techniques in analytical measurements (e.g. electrophoresis and chromatography); microfluidic sorting and analysis of cells for diagnostics, biomimetics, drug delivery, tissue engineering, proteomics, and genomics; and microfluidics for precision biological measurements and systems biology.

- **Lab Module on Biological Surface Functionalization for CHE U521 Unit Operations Laboratory**

(Summer II, 2007-2009)

I designed an experimental module in which students learned how to use solution chemistry techniques to covalently bind a fluorescent protein to a polymeric thin film synthesized by chemical vapor deposition in a previous module.

- **Lab Modules on Chemical Vapor Deposition and Microfluidics for CHE U521 Unit Operations Laboratory**

(Fall 2006, Spring 2007)

This traditional course was modernized by departmental faculty as a team effort beginning in Fall 2006. I was responsible for the development and implantation of a module on chemical vapor deposition of thin polymeric films together with Prof. Burkey. In addition, I

independently supervised a group of students in this course on their assignment to design a novel experimental module in microfluidics on the topic of fluid diffusion between adjacent streams in laminar flow.

▪ **CHE G260 (Special Topics) Nanomaterials**

(Offered Spring 2006)

Course Description: Nanomaterials are engineered to take advantage of unique intrinsic properties that result from at least one length scale of less than 100 nm. Nanomaterials play an important role in chemical and other engineering disciplines with applications in a variety of fields including material processing, drug delivery, semiconductor devices, and catalysis. Using size scales as metrics of organization, this graduate level course examines the unique properties, structure, and synthesis of different nanomaterials. This course draws extensively from the latest research in multifunctional devices and nanotechnology.

RESEARCH SUPERVISION

Current Postdoctoral Associates

1. Dr. Andrew Kozbial (Oct 2016-present)
(Ph.D. institution: University of Pittsburgh; advisor: L. Li)
Project: Bioreactor for autologous T cell stimulation.

Current Ph.D. Students (Thesis Supervision)

1. Sanjin Husic (Sept 2014-present), “Spatially Specific Separation of Intestinal Cells”
Anticipated graduation: April 2019 (Ph.D. in Chemical Engineering)
(Co-advised with Prof. Abigail Koppes)

Former Postdoctoral Associates

1. Dr. Bradley Collier (Sept 2015–Dec 2016)
(Ph.D. institution: Texas A&M University; advisor: M. McShane)
Project: Automated generation of dendritic cells for transcriptomics-driven vaccinology.
Current employment: Scientist at Ascent Bio-Nano Technologies
2. Dr. Brian Plouffe (Sept 2012-Aug 2015)
(Ph.D. institution: Northeastern University; advisor: S.K. Murthy)
Current employment: Assistant Professor of Biomedical Engineering at Regis College
3. Dr. Beili Zhu (June 2010-April 2013)
(Ph.D. institution: UT San Antonio; advisors: M. Agrawal and S. Bailey)
Current status: graduate student in Pharmacy at Northeastern University.
4. Dr. Vishal Tandon (Sept 2011-April 2012)
(Ph.D. institution: Cornell University; advisor: B. Kirby)

Current employment: Postdoc at Massachusetts Eye & Ear Infirmary and Harvard Medical School.

5. Dr. Mariana Tasso (Sept 2010-June 2012)
(Ph.D. institution: Technical Univ. of Dresden; advisor: C. Werner)
Current employment: Postdoc at Ecole Supérieure de Physique et de Chimie, France.

Graduated Ph.D. Students (Thesis Supervision)

1. Tanya Narahari (Sept 2012-Aug 2016), “Electrically Actuated Microfluidics in Fabric”
Graduation Date: August 2016 (Ph.D. in Chemical Engineering)
Current employment: Postdoc at the University of Toronto, Canada
2. David Walsh (Sept 2011-May 2016), “Scalable Manufacturing Methods for Biomedical Microfluidics”
Graduation Date: May 2016 (Ph.D. in Bioengineering)
Current employment: Member of the Technical Staff, MIT Lincoln Laboratory
3. Adedayo Adeniran-Catlett (Sept 2010-December 2014), “Induced Differentiation of Adult Mesenchymal Stem Cells via Fluid Shear Stimulation.”
Graduation Date: December 2014 (Ph.D. in Bioengineering)
4. Mehdi Abedi (Jan 2012-December 2014), “Hydrodynamic Property Effects on the Performance of Specimen Preparation Modules in an Integrated Diagnostic Hematological Analyzer.”
Graduation Date: December 2014 (Ph.D. in Mechanical Engineering)
(Co-advised with Prof. Mohammad Taslim)
Current employment: Assistant Academic Specialist in Mechanical Engineering, Northeastern University
5. Adam Hatch (Oct 2009-May 2014), “Microfluidic Isolation of Endothelial Progenitor Cells for Vascular Tissue Engineering.”
Graduation Date: August 2014 (Ph.D. in Chemical Engineering)
Current employment: Process Scientist, AMPAC Corp., Sacramento, CA
6. Sean Kevlahan (Oct 2009-Aug 2013), “A Microfluidic Capture and Release Method for Isolation of Intestinal Progenitor and Stem Cells from Native Rat Tissue Enabling Advances in Vasculogenic Co-Cultures.”
Graduation Date: August 2013 (Ph.D. in Chemical Engineering)
(Co-advised with Prof. Rebecca Carrier)
Current employment: Co-Founder and CEO of Quad Technologies, Corp.
7. Dwayne Vickers (Sept 2008-Dec 2012), “Extracellular and Intracellular Phenomena in Microfluidic Flow.”
Graduation Date: December 2012 (Ph.D. in Chemical Engineering)
Current employment: Postdoctoral fellow under Prof. Paul Blainey, Broad Institute, Cambridge, MA
8. Brian Plouffe (Jan 2008-May 2011), “Magnetic Particle Based Microfluidic Separation of Cancer Cells from Whole Blood for Applications in Diagnostic Medicine.”
Graduation Date: May 2011 (Ph.D. in Chemical Engineering)

(Co-advised with Prof. Laura Lewis)

Current employment: Assistant Professor of Biomedical Engineering at Regis College

9. James Green (Sept 2007-May 2011), "Size- and Adhesion-Based Microfluidic Cell Separation for Tissue Engineering and Clinical Diagnostics."
Graduation Date: May 2011 (Ph.D. in Chemical Engineering)
Current employment: Project Manager – Process Engineering, Bayer Corp., Berkeley, CA
10. Anilkumar Achyuta (Sept 2006-Dec 2009), "Biopassive and Bioactive Coatings for Neural Implants."
Graduation date: December 2009 (Ph.D. in Chemical Engineering)
Current employment: Senior Member of the Technical Staff, Charles Stark Draper Laboratory, Cambridge, MA

M.S. Students (Thesis Supervision)

1. Deepa Sritharan (Sept 2006-May 2009), "Size-Based Cell Sorting by Deterministic Lateral Displacement."
Graduation Date: May 2009 (M.S. in Chemical Engineering).
2. Brian Plouffe (Jan 2006-May 2007), "Microfluidic Separation of Fibroblasts, Smooth Muscle Cells, and Endothelial Cells using Peptide-Functionalized Surfaces."
Graduation date: May 2007 (M.S. in Chemical Engineering).
3. Kiwook Kim (Sept 2007-Dec 2009), "Sub-cellular and Cellular Level Toxicity of Quantum Dots."
No degree completed.
(Co-advised with Prof. Penny Beuning)

M.S. Students (Non-thesis; Independent Study)

1. Tanushree Phadke, Bouvé College of Health Sciences, NU (Jan 2006-May 2006)

Co-op Students

1. Augusta Modestino, Chemical Engineering Class of 2011 (Jan-Jun 2009)
2. Victor Antontsev, Chemical Engineering Class of 2016 (Jan-Jun 2013)

Undergraduate Students (Non-thesis)

1. Alyxandra Spikerman, Chemical Engineering Class of 2020 (Jan 2016-April 2016)
2. Rita Andary, Chemical Engineering Class of 2020 (Dec 2015-April 2016)
3. Fazli Bozal, Biochemistry Class of 2017 (Jan 2014-April 2014; Jan 2015-June 2015; Jan 2016-April 2016)
4. Matthew Mazzone, Chemical Engineering Class of 2018 (July 2015-Dec 2015)
5. Jacob Cardinal, Chemical Engineering Class of 2018 (July 2015-August 2015)
6. Laura Weinstock, Biochemistry Class of 2015 (May 2014-May 2015)
7. Mitchell Brun, Chemical Engineering Class of 2015 (July-Dec 2013; Sept 2014-May 2015)
8. Jeffrey Lu, Chemical Engineering Class of 2018 (May 2014-Dec 2014)
9. Alexander Caraballo, Chemical Engineering Class of 2017 (May 2014-Dec 2014)
10. Juliette Kassas, Biochemistry Class of 2014 (Jan 2014-August 2014)
11. Estelle Beguin, Chemical Engineering Class of 2016 (Sept 2013-April 2014)

12. Aaron Medley, Mechanical Engineering Class of 2015 (Jan 2013-June 2013)
13. Victor Antontsev, Chemical Engineering Class of 2016 (Sept 2011-Dec 2013)
14. Erica Bortoff, Chemical Engineering Class of 2016 (May 2012-Dec 2012; July-Dec 2013)
15. Danielle Pesko, Chemical Engineering Class of 2013 (Sept 2011-May 2013)
16. Ravi Patel, Chemical Engineering Class of 2013 (Sept 2011-May 2013)
17. Megan Harless, Chemical Engineering Class of 2015 (Sept 2011-May 2012)
18. Brian Im, Chemical Engineering Class of 2015 (July 2011-Dec 2011)
19. Nolan Hsu, Chemical Engineering Class of 2015 (Feb 2011-Dec 2011)
20. John Henske, Chemical Engineering Class of 2012 (Aug 2010-Dec 2011)
21. Tabitha Bandy, Chemical Engineering Class of 2015 (May-June 2011)
22. Devin Hersey, Chemical Engineering Class of 2015 (March 2011-May 2011)
23. Emma Chory, Chemical Engineering Class of 2012 (Jan 2010-May 2010; Jan 2011-May 2011)
24. Johnathan Goldman, Chemical Engineering Class of 2010 (May 2010-Aug 2010)
25. Augusta Modestino, Chemical Engineering Class of 2011 (Sept 2009-Dec 2009)
26. Alexandra Steele, Chemical Engineering, Class of 2011 (May 2009-Dec 2009)
27. Darshan Sokhey, Chemical Engineering Class of 2010 (Jan 2008-June 2008)
28. Tatiana Kniazeva, Chemical Engineering Class of 2011 (Dec 2007-May 2010)
29. Kyle Stephens, Chemical Engineering Class of 2009 (Sept 2007-April 2009)
30. Charles Naggar, Chemical Engineering Class of 2011 (May 2007-Dec 2007)
31. Jeffrey Patenaude, Mechanical Engineering Class of 2009 (Sept 2006-Dec 2006)
32. James Sims, Chemical Engineering Class of 2010, NU (Sept 2006-April 2007)
33. Jason Crater, Chemical Engineering Class of 2009, NU (Sept 2006-Jun 2007)
34. Danson Njoka, Chemical Engineering Class of 2010, NU (May 2006-April 2007)
35. Stephanie Duncanson, Chemical Engineering Class of 2008, NU (Jan 2006-Dec 2006)

Undergraduate Students (Independent Study Projects for Academic Credit)

1. Kelli Lynch, Mechanical Engineering Class of 2017 (Summer 2016), "T Cell Transduction."
2. Jaimie Rogner, Chemical Engineering Class of 2015 (Summer 2014), "Effect of Shear Stress on Protein Glycosylation."
3. Jason Lee, Mechanical Engineering Class of 2015 (Summer 2014), "Feasibility Analysis for an Online Prototyping Resource for Entrepreneurs."
4. Faisal Alkhorayef, Chemical Engineering Class of 2015 (Spring 2014), "Substituting Guar Gum and its Derivatives with Sodium Alginate as Thickening Agent in Hydraulic Fracturing."
5. Asel Primbetova, Chemistry Class of 2017 (Spring 2014), "Immobilized Metal Affinity Chromatography."
6. John Henske, Chemical Engineering Class of 2012 (Fall 2011), "Enrichment of Intestinal Epithelial Stem Cells Using Adhesion-Based Capture and Release Microfluidics and Subsequent Culture into Stem Cell Organoids."

Undergraduate Students from Other Institutions

1. Ruqaiya Al Rusheidi, Chemical Engineering Class of 2016, Sultan Qaboos University, Oman (Summer 2015)
2. Amal Al Maqbali, Chemical Engineering Class of 2016, Sultan Qaboos University, Oman (Summer 2015)

3. Andrew Ayoob, Chemical Engineering Class of 2012, University of Notre Dame (Summer 2011)
4. Ted Fernandez, Chemical Engineering Class of 2009, MIT (Summer 2006)

High School Teachers (through NSF Research Experiences for Teachers Program at NU)

1. Judith Lubber-Narod, Abbey Kelly Charter School, Worcester, MA (Summer 2011)
2. Harriet Page, Marblehead High School, Marblehead, MA (Summer 2011)
3. Jason Souza, Bigelow Middle School, Newton, MA (Summer 2009)
4. Gregory Banks, Urban Science Academy, West Roxbury, MA (Summer 2009)
5. Jill Krajewski, Needham High School, Needham, MA (Summer 2008)
6. Rocco Cieri, Medford High School, Medford, MA (Summer 2007, 2008)
7. Kristina Unger, Malden High School, Malden, MA (Summer 2007)
8. Emily Simpson, Codman Academy Charter Public School, Dorchester MA (Summer 2006)
9. Paul Damiani, Milton High School, Milton MA (Summer 2006)

High School Students

1. Armel Romelus, Kennedy Academy for Health Careers, Boston, MA (Summer 2011)
2. Cristal Moreta, Kennedy Academy for Health Careers, Boston, MA (Summer 2010)
3. Daniel Abraham, Kennedy Academy for Health Careers, Boston, MA (Summer 2010)
4. Luciana Salles, Revere High School, Revere, MA (Summer 2009; NU Young Scholars Program)
5. Robert Powers, Belmont High School, Belmont, MA (Summer 2009; NU Young Scholars Program)
6. Priston Blackett, Kennedy Academy for Health Careers, Boston, MA (Summer 2007, 2008; NU Young Scholars Program)
7. Joscelyn Harris, Kennedy Academy for Health Careers, Boston, MA (Summer 2006, 2007, 2008; NU Young Scholars Program)
8. Rawan Hakawati, Hariri High School, Lebanon (Summer 2007; Research Science International Program))
9. Jiahui Liao, Kennedy Academy for Health Careers, Boston, MA (Summer 2006)

AWARDS GRANTED TO STUDENTS SUPERVISED BY S.K. MURTHY

Graduate Students

- | | |
|------|--|
| 2014 | Akira Yamamura Fellowship in Mechanical Engineering (\$4,000 prize awarded to Mehdi Abedi) |
| 2014 | Excellence in Research Award with \$1,000 prize at NU Research, Innovation and Scholarship Expo (RISE) (David Walsh (grad.) with Juliette Kassas (undergrad.)) |
| 2014 | Outstanding Research in Engineering and Technology Category Award at NU Research, Innovation and Scholarship Expo (RISE) (David Walsh (grad.) with Juliette Kassas (undergrad.)) |

- 2013 Northeastern University College of Engineering Excellence in Research Award (Adam Hatch)
- 2012 National Science Foundation Graduate Research Fellowship (David Walsh; award provides 3 years of stipend and research support following national competition; www.nsfgrfp.org)**
- 2011 Outstanding Poster Presentation Award at NU Research & Scholarship Expo (Brian Plouffe)
- 2008 Outstanding Poster Presentation Award at NU Research & Scholarship Expo (Brian Plouffe)
- 2008 Nanomedicine IGERT Doctoral Fellowship (Brian Plouffe; \$30,000/year for 2 years)

Undergraduate Students

- 2015 Provost's Undergraduate Research & Creative Endeavors (Laura Weinstock; \$3,000)
- 2014 Provost's Undergraduate Research Award (Alexander Caraballo; \$1,000)
- 2014 Excellence in Research Award with \$1,000 prize at NU Research, Innovation and Scholarship Expo (RISE) (Juliette Kassas (undergrad.) with David Walsh (grad.))
- 2014 Outstanding Research in Engineering and Technology Category Award at NU Research, Innovation and Scholarship Expo (RISE) (Juliette Kassas (undergrad.) with David Walsh (grad.))
- 2014 Provost's Undergraduate Research Award (Fazli Bozal; \$1,000)
- 2014 Provost's Undergraduate Research Award (Juliette Kassas; \$1,000)
- 2013 Provost's Undergraduate Research Award (Estelle Beguin; \$1,000)
- 2012 Provost's Undergraduate Research Award (Erica Bortoff; \$1,000)
- 2012 Provost's Undergraduate Research Award (Megan Harless; \$1,000)
- 2011 First place, Food, Pharma & Biotech category poster session, AIChE National Meeting, Minneapolis, MN (Emma Chory)
- 2011 Provost's Undergraduate Research Award (Emma Chory; \$2,000; two awards)
- 2011 Nanomedicine IGERT Undergraduate Research Fellowship (Nolan Hsu; \$5,000)
- 2011 Steamboat Summer Scholar at Dana Farber Cancer Institute (Emma Chory)
- 2010 Provost's Undergraduate Research Award (Johnathan Goldman; \$1,000)
- 2010 Provost's Undergraduate Research Award (Tatiana Kniazeva; \$1,000)
- 2009 Provost's Undergraduate Research Award (Augusta Modestino; \$1,000)
- 2008 AIChE National Student Paper Competition Honorable Mention (Kyle Stephens)
- 2008 Northeast Region AIChE Student Paper Competition Winner (Kyle Stephens)
- 2008 Provost's Undergraduate Research Award (Darshan Sokhey; \$1,000)

- 2008 Provost's Undergraduate Research Award (Tatiana Kniazeva; \$1,000)
- 2007 Nanomedicine IGERT Undergraduate Research Fellowship (Charles Naggar; \$5,000)
- 2007 Nanomedicine IGERT Undergraduate Research Fellowship (Kyle Stephens; \$5,000)
- 2007 Provost's Undergraduate Research Award (Charles Naggar; \$1,000)
- 2006 IGERT Undergraduate Research Fellowship (Jeffrey Patenaude; \$5,000)
- 2006 Provost's Undergraduate Research Award (Jason Crater; \$1,000)
- 2006 Provost's Undergraduate Research Award (Stephanie Duncanson; \$1,000)
- 2006 Provost's Undergraduate Research Award (Danson Njoka; \$3,000; three awards)
- 2006 Provost's Undergraduate Research Award (James Sims; \$1,000)

High School Students

- 2008 Third Place in State-Level Science Fair (Joscelyn Harris and Priston Blackett)
- 2007 Honorable Mention in State-Level Science Fair (Jiahui Liao)
- 2007 Participation in State-Level Science Fair (Joscelyn Harris)
(following school- and city-level selection)

THESIS COMMITTEE MEMBERSHIPS

Chemical Engineering Students

1. Arthur Gonzales III, "Multiscale Modeling of Rosette Nanotubes in Solution." Advisor: Prof. Hicham Fenniri. Anticipated graduation date: May 2018. Ph.D. in Chemical Engineering.
2. Emily Gong, "Cell Proliferation in Spatial Gradients of Chemical Cues." Advisor: Prof. Anand Asthagiri. Anticipated graduation date: May 2016. Ph.D. in Chemical Engineering.
3. Daniel Milano, "Engineering Platforms to Quantitatively Measure Contact Inhibition of Locomotion in a Fibrillar *Ex Vivo* Environment." Advisor: Prof. Anand Asthagiri. Graduation date: May 2016. Ph.D. in Chemical Engineering.
4. Thaddeus Webster, "Monitoring of *Pseudomonas aeruginosa* Toxins via Nanofluidic Electrochemical Assemblies." Advisor: Prof. Edgar Goluch. Graduation date: December 2014. Ph.D. in Chemical Engineering.
5. Fulden Buyukozturk, "Influence of Self Emulsifying Drug Delivery Systems (SEDDS) on Biological Environments." Advisor: Prof. Rebecca Carrier. Graduation date: December 2012. Ph.D. in Chemical Engineering.
6. Courtney Pfluger, "Biomimetic Replication of Intestinal Basement Membrane Topography." Advisor: Prof. Rebecca Carrier. Graduation date: May 2011. Ph.D. in Chemical Engineering.
7. Savidra Lucatero, "Electrodeposited Au/Fe/Au Porous Nanowires for Enhanced Catalytic Activity and Stability of Reactions on Titania." Advisor: Prof. Elizabeth Podlaha-Murphy. Graduation date: December 2010. Ph.D. in Chemical Engineering.

8. Lin Wang, "Biomimesis of Intestinal Crypt Micro-Topography and Extracellular Matrix Chemistry for Intestinal Cell Culture." Advisor: Prof. Rebecca Carrier. Graduation date: December 2010. Ph.D. in Chemical Engineering.
9. Brian McMahon, "Multi-scale Replication of Small Intestine Basement Membrane via Chemical Vapor Deposition." Advisor: Prof. Rebecca Carrier. Graduation date: December 2010. M.S. in Chemical Engineering.
10. Narine Malkhasyan, "Chemical Vapor Deposition of Low-Dielectric Constant Organosilicon-based Thin Films." Advisor: Prof. Daniel Burkey. Graduation date: May 2009. M.S. in Chemical Engineering.
11. Natalia Maximova, "Functionalization of Silicon with Organic Monolayers for Controlled Release in Electrostatic Fields." Advisor: Prof. Katherine Ziemer. Graduation date: May 2008. M.S. in Chemical Engineering.
12. Saloni Bhardwaj, "Physiological Modeling of Gastrointestinal Tract for Predicting the Effect of Cyclodextrin on Bioavailability." Advisor: Prof. Rebecca Carrier. Graduation date: January 2008. M.S. in Chemical Engineering.

Other Northeastern University Students

1. Jennifer Morales, "Engineering Fluorescent-DNA Nanosensors for Sensing Real Time Neurotransmitter Dynamics." Advisor: Prof. Heather Clark. Anticipated graduation date: June 2016. Ph.D. in Bioengineering.
2. Qi Wang, "Selenium Nanoparticles for Preventing Biofilm Formation on Materials." Advisor: Prof. Thomas Webster. Graduation date: December 2014. Ph.D. in Bioengineering.
3. Mehmet Sen, "Design and Development of Calorimetric Biosensors using Extra Ordinary Optical Transmission (EOT) through Nanohole Arrays." Advisor: Prof. Gregory Kowalski. Graduation date: August 2012. Ph.D. in Mechanical Engineering.
4. Hiba Tannoury, "CACN-1 is required in the Development of the Somatic Gonad." Advisor: Prof. Erin Cram. Graduation date: May 2012. Ph.D. in Biology.
5. Bhushan Pattni, "Combination of siRNA-Survivin-Lipoplexes and Paclitaxel-Loaded Liposomes for an Improved In Vitro Cytotoxic Effect in Human Cancer Cell Lines." Advisor: Prof. Vladimir Torchilin. Graduation date: August 2011. M.S. in Pharmaceutical Sciences.
6. Eric Zettergren, "Tomographic Diffuse Fluorescence Flow Cytometry for Enumeration of Rare Circulating Cells in Vitro and in Vivo." Advisor: Prof. Mark Niedre. Graduation date: August 2011. M.S. in Electrical Engineering.
7. Alexander Schering, "Modulating Angiogenesis through the TH1 and TH2 Immune Switch." Advisors: Prof. Ali Hafezi-Moghadam and Prof. Edward Jarroll. Graduation date: May 2010. Ph.D. in Biology.
8. Robert Camp, "Quantifying the Mechanosensitivity of the Type I Collagen Monomer to Enzymatic Cleavage." Advisor: Prof. Jeffrey Ruberti. Graduation date: December 2010. Ph.D. in Mechanical Engineering.
9. Aditi Jhaveri, "Magnetic Nanomedicine and Hyperthermia for the Treatment of Thyroid Cancer." Advisor: Prof. Robert Campbell. Graduation date: January 2009. M.S. in Pharmaceutical Sciences.

Committees at External Institutions

1. Research Committee Member for Michael Coyle, M.D., Hematology-Oncology Fellow at Tufts Medical Center. Advisor: Prof. Andrew Evens (Director, Tufts Cancer Center). 2014-present.
2. Michael Minh-Hung Nguyen (Macquarie University, Australia), “Fabrication and Testing of a Droplet-Based Microfluidic Neural Implant.” Advisor: Prof. David Inglis. Graduation date: December 2014. Masters of Research in Engineering.
3. Yuqian Jane Zhang (Boston University), “Concentration of Infectious Particles for Point-of-Care Diagnostics.” Advisor: Prof. Catherine Klapperich (Boston University). Graduation date: August 2011. Ph.D. in Biomedical Engineering.
4. Ning Lai (Tufts University), “In vitro adipose tissue model for quantitative analysis of adipose tissue metabolism.” Advisor: Prof. Kyongbum Lee (Tufts University). Graduation date: June 2010. Ph.D. in Chemical Engineering.
5. Zhuo Qi (Nanyang Technological University, Singapore), “Structure-Property Studies of Polymer Nanocomposite Surfaces.” Advisor: Prof. Leslie Loo (NTU Singapore). Graduation date: Summer 2010. Ph.D. in Chemical Engineering.

SERVICE AND PROFESSIONAL DEVELOPMENT

SERVICE TO THE INSTITUTION

Department of Chemical Engineering: Accomplishments as Acting Chair (Jan–Aug 2012)

- Brought in to stabilize department and execute leadership transition.
- Created and filled permanent, non-tenure track position teaching position of Academic Specialist for coverage of laboratory and lecture courses to help address ballooning undergraduate enrollment.
- Secured additional 460 sq. ft. of space for undergraduate teaching laboratory.
- Secured 16% increase in non-salary portion of department’s operating budget.
- Secured additional TA line for department.
- Responsible for merit reviews of all faculty and staff for calendar year 2011.
- Worked with College development office and alumni to raise \$45,000 in cash for undergraduate scholarships and discretionary funds. Secured additional commitment for in-kind equipment donation (worth ~\$20,000) for undergraduate teaching laboratory.
- Executed external search for permanent Chair in timeline of 6 months (between advertisement and acceptance of offer).

Department of Chemical Engineering: Responsibilities as Associate Chair (Aug-Dec 2011)

- Organized and ran all faculty meetings.
- Made teaching assignments for all department faculty and teaching staff.
- Formed and monitored all standing and *ad hoc* departmental committees.

- Facilitated department operations.

**Department of Chemical Engineering: Committees & Other Service
(Committee Chairmanships highlighted with *)**

- Faculty Mentor for Assistant Professor Abigail Koppes (July 2014-present)
- Faculty Mentor for Assistant Professor Edgar Goluch (Sept 2010-present)
- Panelist, Graduate Seminar on Professional Development, Jan 2015
- Undergraduate advisor for selected members of all class years (Sept 2006-Dec 2012)
(A new departmental undergraduate advising system was implemented in Fall 2006 that allocates a selected number of students from all class years to each faculty member).
- * Chair and Member, Faculty Search Committee (Sept 2012-Dec 2012)
(Committee actions led to the successful recruitment and hiring of Assistant Professors Eno Ebong and Adam Ekenseair)
- Faculty advisor for Biochemical Engineering Minor, (Jan 2007-Dec 2012)
- Member, Department Chair Search Committee (October 2011-May 2012)
(Committee Chair: Prof. Anand Asthagiri)
(Committee successfully completed external chair search resulting in hire of Professor and Chair Thomas Webster in only 7 months)
- * Chair and Member, Faculty Search Committee (Sept 2009-July 2011)
(Committee actions led to the successful recruitment and hiring of Assistant Professors Edgar Goluch, Sunho Choi, and Richard West; and Associate Professor Anand Asthagiri)
- Seminar Series Committee (May 2010-April 2011)
- * Chair and Member, Departmental Strategic Plan Committee, Spring 2011
- Faculty Advisor, Omega Chi Epsilon (chemical engineering honor society), (Sept 2007-Sept 2010).
- * Chair and Member, Departmental Undergraduate Awards Committee (Jan 2009-May 2010)
- Member, Faculty Search Committee (Sept 2008-June 2009)
(Committee Chair: Prof. Katherine Ziemer)
- Participant, American Institute of Chemical Engineers (AIChE) Student Chapter Faculty Forum (Fall 2005, 2006, 2008, 2009)
- Member, Faculty Search Committee (Sept 2006-June 2007)
(Committee Chair: Prof. Albert Sacco, Jr., Fall 2006; Prof. Elizabeth Podlaha-Murphy, Spring 2007)
- Member, Graduate Committee, Sept 2005-Sept 2008
(Responsible for graduate admission and curriculum; Committee Chair: Prof. Albert Sacco, Jr. until Dec 2007, Prof. Laura Lewis, Dec 2007-Sept 2008)
- Co-organizer, reception for returning undergraduates, Sept 2006
- Department Representative, Chemical Engineering Graduate Student Orientation, Sept 2006
- Academic Advisor to the Chemical Engineering undergraduate class of 2010
- Member, Departmental Strategic Plan Committee, Spring 2006
(Committee Chair: Prof. Gilda Barabino)

- Department Representative, Chemical Engineering Graduate Student Orientation, Sept 2005

College of Engineering: Role as Director of the Sherman Center for Engineering Entrepreneurship Education (Aug 2013-present)

- Selected for this role based on successful track record as Acting Department Chair and entrepreneurial experience. Launched Center from scratch and led design of its space in Hayden Hall.
- Conceived and implemented Center's core offerings which currently include four semester-long formal courses, evening workshops in prototyping and business development, and a speaker series.
- Facilitated fundraising to create an alumni mentoring program, *REV*, for entrepreneurial students, faculty, staff, and alumni. Created and filled associated full-time program manager position and actively built up roster of mentors and mentees.
- Created a Minor in Entrepreneurial Engineering with versions for both engineering and non-engineering students. Served as faculty advisor for this minor.
- Created a specialized co-op program for engineering students to advance early stage entrepreneurial concepts via prototyping and customer validation.
- Oversaw creation and growth of a student group named *Generate* which is dedicated to product design, development, and prototyping. Served as faculty advisor to *Generate*.
- Devoted significant time and effort to philanthropic fundraising for all programs and donor relations.

College of Engineering (Committee Chairmanships highlighted with *)

- Member, search committee for Associate Dean for Development in the College of Engineering (October 2016-present)
- Member, College Task Force on Teaching Innovation (Dec 2015-present)
- Track Manager, BioMEMs/BioNano Track, Interdepartmental Ph.D. Program in Bioengineering (Sept 2009-present)
- * Chair and Member, Seminar Series Committee, Interdepartmental Ph.D. Program in Bioengineering (Sept 2009-May 2011)
- Member, Program Committee, Interdepartmental Ph.D. Program in Bioengineering (Jan 2010-April 2011)
(Committee Chair: Prof. Jeffrey Ruberti)
- Chemical Engineering Representative at Graduate Engineering Programs Open House, Nov 19, 2010
- Member, College Search Committee for chaired faculty positions in Nanotechnology (Sept 2009-2010)
(Committee Chair: Prof. Ahmed Busnaina)
- Member, Academic Standing Committee (Jan 2006-Sept 2010)
(Committee Chair: Prof. Richard Scranton)

- Member, College of Engineering Undergraduate Awards Committee (Jan-May 2010)
(Committee Chair: Ms. Candace Martel)
- Chemical Engineering Representative at “Building Bridges,” December 4, 2009
(College-sponsored event for high school students to learn about different engineering disciplines)
- Chemical Engineering Representative at the College of Engineering Open House, Oct 31, 2009
(Open house event for prospective students interested in applying to NU and majoring in engineering)
- Chemical Engineering Representative at the 23rd Annual Academic Achievement Dinner and Awards Ceremony, March 26, 2009
- Chemical Engineering Representative at “Building Bridges,” May 23, 2008
(College-sponsored event for high school students to learn about different engineering disciplines)
- Chemical Engineering Representative at the College of Engineering Open House, Nov 10, 2007
(Open house event for prospective students interested in applying to NU and majoring in engineering)
- Chemical Engineering Representative at College of Engineering Freshman Advising & Orientation, Jul 17, 2007
- Chemical Engineering Representative at College of Engineering Freshman Advising & Orientation, Aug 8, 2006
- Chemical Engineering Representative at the College of Engineering Welcome Day, Feb 21, 2006
(Open house event for accepted undergraduate students interested in majoring in engineering)

University

- Member, Mosaic Council (Jan 2016-present; this body oversees the Mosaic Fund, a body that makes grants that support the interdisciplinary interaction between these student-led organizations).
- Member, Northeastern University Venture Mentoring Network Steering Committee (Dec 2014-present)
- Member, Faculty Advisory Board, NU Center for Entrepreneurship Education (Fall 2012-present)
- Reviewer for NU-Dana Farber Cancer Institute Joint Seed Grant Program proposals, July 2016
- Member, Search Committee for Director of the Barnett Institute of Chemical and Biological Analysis at Northeastern University (Spring 2014-Spring 2016)
- Member, Search Committee for Chair of the Pharmaceutical Sciences Department, Bouvé College of Health Sciences (Spring 2014 through Fall 2014)

- NU Site Miner (institutional representative and facilitator of scientific collaborations), Boston Biomedical Innovation Center (B-BIC), an NHLBI U54 consortium of universities and hospitals in the Boston area (Sept 2013-Aug 2014)
- NU Site Miner (institutional representative and facilitator of scientific collaborations), Center for Integration of Medicine in Technology (CIMIT), a consortium of universities and hospitals in the Boston area (Sept 2010-Aug 2014)
- Judge, InnoWeekend, a 48-hour competition organized by the NU Entrepreneurs Club where students form teams to identify a business idea, develop it, and pitch it to a panel of judges. Fall 2013.
- Member, 2014 Saferstein Lecture Committee, Fall 2013
(This committee was charged with identifying a speaker for this endowed lectureship in the area of forensic science.)
- Member, Administrator Evaluation Committee for a Department Chairperson in the Bouvé College of Health Sciences, Fall 2012
- Member, 2013 Saferstein Lecture Committee, Fall 2012
(This committee was charged with identifying a speaker for this endowed lectureship in the area of forensic science.)
- Reviewer for selection of restricted institutional submissions to Smith Family Foundation grant program, July 2012
- Reviewer for NU-Dana Farber Cancer Institute Joint Seed Grant Program proposals, May 2012
- Reviewer of participant curriculum vitae, NU ADVANCE Future Faculty Workshop, July 2012
- Panelist in discussion on tenure process. Fall 2011 New Faculty Orientation. Discussion leader Vice Provost Mary Loeffelholz. August 31, 2011
- Member, Search Committee for Cluster Faculty Hires in Drug Discovery and Development (Joint hires between Colleges of Science, Health Sciences, and Engineering; 2010-2011; Committee Chair: Prof. Graham Jones)
- Member, Advisory Group for NU Membership in the Center for Integration of Medicine in Technology (CIMIT) (Fall 2010)
(This body was formed in August 2010 following NU's joining CIMIT and is responsible for managing scientific and technological aspects of NU's membership; Chair: Senior Vice Provost Melvin Bernstein)
- Laboratory Tour Host for BIOL 1000 Biology/Biochemistry (freshman Biology and Biochemistry majors), Oct 23, 2009
- Faculty Advisor, Graduate Materials Links (2008-2009)
(Northeastern University Chapter of the Materials Research Society, a graduate student group)
(Responsible for guiding organization of annual Materials Science symposium and budget oversight)
- Presenter (Topic: Building your Lab), ADVANCE-sponsored Workshop to Promote Diversity & Gender Balance for Prospective Faculty, Jun 18, 2009

- Presenter, Workshop on Preparing Successful NSF CAREER Proposals organized by Provost's Office, Jun 11, 2009
- Member, South Asia Virtual Regional Center Committee, Provost's Office (2005-2008) (Responsible for the establishment of relationships with educational institutions in India for joint programs and graduate student recruitment; Committee Chair: Prof. Srinivas Sridhar)

SERVICE TO THE DISCIPLINE/PROFESSION

Advisory Boards of Federally-Funded Centers

1. Member, External Advisory Board, Center for Future Technologies in Cancer Care, Boston University (2014-2016)
(This U54 center is funded by NIH/NIBIB as part of its Point-of-Care Technologies Research Network (POCTRN)).

Editorships/Advisory Boards to Journals

1. Features Panel Member, *Analytical Chemistry* (2013-2016)
(This advisory group suggests authors and topics for featured and review articles that the journal publishes. Membership is by invitation from the Editor-in-Chief.)
2. Editorial Board Member, *Technology* (2013-present)
3. Symposium Editor, *Proceedings of the Materials Research Society*
Responsible for editing conference proceedings from Symposium on Materials and Strategies for Lab-on-a-Chip: Biological Analysis, Cell-Material Interfaces, and Fluidic Assembly of Nanostructures, Spring 2009 Meeting of the Materials Research Society).

Conferences & Symposia Organized

1. Co-Organizer, MF7 Microfluidics Consortium American Open Day, June 23-24, 2016, Northeastern University, Boston, MA.
(This consortium is assembled and managed by the U.K.-based Centre for Business Innovation and comprises small, medium, and large companies involved in microfluidics. These consortium meetings include a closed session that exposes industry leaders to new research innovations via a small number of academic speakers, and an open session that showcases the member companies' technologies and products.
2. Co-Organizer, Symposium on "Materials in Microfluidics and Lab-on-a-Chip" at the 7th International Conference on Materials for Advanced Technologies, June 30- July 5, 2013, Singapore.
3. Co-Organizer, MF4 Microfluidics Consortium American Open Day, June 3-4, 2013, Northeastern University, Boston, MA.
(This consortium is assembled and managed by the U.K.-based Centre for Business Innovation and comprises small, medium, and large companies involved in microfluidics. These consortium meetings include a closed session that exposes industry leaders to new research innovations via a small number of academic speakers, and an open session that

showcases the member companies' technologies and products. Total attendance at this meeting was 53.

4. Member, Program Committee for the "Methods in Bioengineering" 2011 Conference, Boston, MA.
(This committee, comprised of 19 leading bioengineering researchers is responsible for planning this major conference, which drew more than 500 attendees. Fellow committee members included M. Toner, D. Ingber, D. Mooney, and R. Langer).
5. Symposium on "Materials and Strategies for Lab-on-a-Chip: Biological Analysis, Cell-Material Interfaces, and Fluidic Assembly of Nanostructures," Materials Research Society Spring 2009 Meeting, San Francisco, CA, April 2009.
(As lead-organizer of 4-person team, responsible for securing funding for symposium for government and private sources and inviting 10-15 invited speakers comprising leaders in the fields of microfluidics and BioMEMS. Also responsible for assembling sessions, recruiting session chairs. Total number of talks and posters in this symposium: ~120).
6. American Electrophoresis Society Annual Meeting, Philadelphia, PA, November 16-21, 2008.
(As conference chair, responsible for assembling sessions, selecting keynote speakers, and recruiting session chairs. Total number of talks in this meeting: ~80).

Conference Sessions Chaired

1. "Scenarios and Outcomes for Early Stage Microfluidics Companies," MF6 Microfluidics Consortium Meeting, June 24, 2015, Cambridge, MA.
2. "Entrepreneurship and Translational Research," Biomedical Engineering Society Northeast Biomedical Career Conference and 40th Annual Northeast Bioengineering Conference, April 25, 2014. Panel Moderator.
3. "Printing and Patterning in Tissue Engineering," Biomedical Engineering Society Annual Meeting, October 7, 2010.
4. "BioMEMS and Medical Devices," Society of Photo-Optical Instrumentation Engineers (SPIE) Photonics West Conference, January 26, 2010, San Francisco, CA.
5. "Biomaterials I," American Institute of Chemical Engineers Annual Meeting, Nashville, TN, November 12, 2009.
6. "Disease Mechanisms," American Institute of Chemical Engineers Annual Meeting, Nashville, TN, November 10, 2009.
7. Poster Session, American Electrophoresis Society Annual Meeting, Philadelphia, PA, November 19, 2008.
8. "Biomaterials for Neural Engineering," American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 8, 2007.
9. "BioMEMS and Microfluidics – Novel Applications," American Electrophoresis Society Annual Meeting, Salt Lake City, UT, November 7, 2007.
10. "Biomaterials and Microscale Technologies for Biomedical Applications," Society for Biomaterials Annual Meeting, Chicago, IL, April 20, 2007.

Positions Held in Professional Societies

- Executive Vice President, American Electrophoresis Society (2012-2014).
(Responsible for fundraising and developing relationships between the society and industry. Selected accomplishments: created exhibitor booth program at annual meeting and raised over \$5,000 in sponsorship funds from companies.)
- Councilor, American Electrophoresis Society (Nov 2008-Nov 2010).
(One of six councilors elected by governing board to provide advice on society activities.)

Professional Society Service

- Abstract Reviewer, Biomedical Engineering Society Annual Meeting, October 2013.
- Member, Abstract Review Committee, International Society for Stem Cell Research, 11th Annual Meeting, June 2013.
- Abstract Reviewer, Biomedical Engineering Society Annual Meeting, October 2011.
- Abstract Reviewer, Biomedical Engineering Society Annual Meeting, October 2010.
- Abstract Reviewer, Society for Biomaterials Annual Meeting, April 2007.
- Reviewer for Conference Proceedings, American Society for Mechanical Engineers International Mechanical Engineering Congress, Symposium on Microsystems for Medicine and Biology, Nov 2005 and Nov 2006.
- Participant, Safety and Chemical Engineering Education (SACHE) Faculty Workshop, "What Chemical Engineering Students Need to Know," (organized by the American Institute of Chemical Engineers) Croydon, PA, Sept 18-21, 2005.

Grant Proposal Peer Review Panels

International Agencies

- U.S. – Israel Binational Science Foundation Regular Grant Program, December 2015 (proposal reviewed online).
- Natural Sciences and Engineering Research Council (NSERC) of Canada, Discovery Grants Program, December 2015 (proposal reviewed online).
- Swiss National Science Foundation, Careers (Postdoctoral Fellowship) Program, September 2015 (proposal reviewed online).
- U.S. - Egypt Science and Technology (S&T) Joint Fund administered by the U.S. National Academies, September 2015 (proposal reviewed via mail).
- Israel Science Foundation, Collaborative Research Grant Program, May 2015 (proposal reviewed online).
- Agency for Science, Technology and Research (A*STAR) Singapore Biomedical Engineering Grants Program, March 2015 (proposals reviewed online).
- Agency for Science, Technology and Research (A*STAR) Singapore Biomedical Engineering Grants Program, April 2013 (proposals reviewed online).
- Austrian Science Fund, January 2013 (proposal reviewed online).
- Agency for Science, Technology and Research (A*STAR) Singapore Biomedical Engineering Grants Program, April 2012 (proposals reviewed online).

- Swiss National Science Foundation, Sinergia Grants Program, March 2012 (proposal reviewed online).
- Natural Sciences and Engineering Research Council (NSERC) of Canada, Strategic Project Grants Program, July 2009 (proposal reviewed online).
- Agence Nationale de la Recherche (French National Research Agency), Research in Biotechnology for Healthcare Grant Program, May 2008 (proposal reviewed online).

U.S. Federal Agencies

- NIH Special Panel for review of U19 center proposals in response to RFA-AI-16-022, “Human Tissue Models for Infectious Diseases.” Teleconference-based screening in Nov 2016 and in-person panel meeting in Dec 2016.
- NIH ZRG1 CB-F(55) Special Emphasis Panel in stem cell biology for PARs 13-094 and 13-095. June 30, 2015.
- NIH Basic and Integrative Bioengineering Panel for Small Business Proposals (IMST-12). June 18, 2014.
- NSF Chemical and Biological Separations Program, Division of Chemical, Bioengineering, Environmental and Transport Systems (CBET). Unsolicited Proposal Review Panel. Arlington, VA. March 6-7, 2014.
- NIH Transformative Research Award Program. Mail Reviewer. February 2014.
- NIH ZRG1 CB-F(56) Special Emphasis Panel in stem cell biology for PARs 13-094 and 13-095. November 15, 2013.
- NSF Materials Research Science and Engineering Centers (MRSEC) program. Panel for site visit review of an existing center. November 14-15, 2012.
- NSF Emerging Frontiers in Research and Innovation (EFRI) Office. Review Panel for 2011 EFRI Competition in the area of “Engineering New Technologies Based on Multicellular and Inter-Kingdom Signaling (MIKS).” Arlington, VA. June 2-3, 2011.
- NSF Solid-State and Materials Chemistry Program, Division of Materials Research. Mail reviewer. March 2011.
- NSF Chemical and Biological Separations Program, Division of Chemical, Bioengineering, Environmental and Transport Systems (CBET). CAREER Proposal Review Panel. Arlington, VA. September 15, 2010.
- U.S. Army Medical Research & Materiel Command. Mail reviewer of unsolicited proposal. March 2010.
- NSF Solid-State and Materials Chemistry Program, Division of Materials Research. Mail reviewer. March 2010.
- NSF Broadening Participation Research Initiation Grants in Engineering (BRIGE) Program Review Panel. Arlington, VA. April 9-10, 2009.
- National Institute of Justice, U.S. Department of Justice. Invited reviewer by mail for final report of a funded project. August 2008.
- NSF Chemical and Biological Separations Program, Division of Chemical, Bioengineering, Environmental and Transport Systems (CBET). Unsolicited Proposal Review Panel. Arlington, VA. April 9-10, 2008.
- NSF Nanoscale Interdisciplinary Research Team (NIRT) Program Review Panel, Division of Chemical, Bioengineering, Environmental and Transport Systems (CBET). Arlington, VA. March 14-15, 2007.

State Agencies

- State of Louisiana Board of Regents Research Competitiveness Subprogram, December 2005 (by mail).
(This is an NSF EPSCoR-style grants program to stimulate competitive research within Louisiana).

Other Organizations

- Shriners Burns Hospital, internal grant program, April 2013-2016.
- Center for Integration of Medicine & Innovative Technology (CIMIT) Grant Program, April 2007.

Journal Article Peer Review (alphabetical order by year)

Acta Biomaterialia (2009-2011, 2016)
Biotechnology and Bioengineering (2016)
Colloids and Surfaces B (2016)
Stem Cells Translational Medicine (2016)
Analytical Chemistry (2009-2015)
Lab on a Chip (2008-2015)
Molecular and Cellular Proteomics (2013-2015)
Process Safety Progress (2015)
Scientific Reports (2013-2015)
Small (2011-2012, 2015)
Analyst (2009, 2014)
Biomicrofluidics (2010-2012, 2014)
Journal of Biomedical Materials Research – Part A (2008, 2014)
Langmuir (2007-2008, 2010, 2012-2014)
Nanomedicine (2014)
Advanced Materials (2008, 2011-2013)
Advanced Healthcare Materials (2013)
Biotechnology Progress (2008, 2010, 2013)
Journal of Medical and Biological Engineering (2013)
Nature Nanotechnology (2013)
PLoS One (2012-2013)
Sensors & Actuators: B. Chemical (2011, 2013)
Angewandte Chemie (2012)
Applied Physics Letters (2012)
Biotechnology Advances (2012)
Integrative Biology (2012)
Nature Materials (2012)
Preparative Biochemistry & Biotechnology (2012)
Tissue Engineering (2012)
Biomaterials (2011)
Biomedical Microdevices (2008, 2010-2011)
Biotechniques (2011)

Langmuir (2007-2008, 2010-2011)
Microfluidics and Nanofluidics (2011)
Nanomedicine: Nanotechnology, Biology, and Medicine (2011)
Sensors & Actuators: B. Chemical (2011)
Acta Ophthalmologica (2010)
Biomacromolecules (2007, 2008, 2010)
Biotechnology Advances (2010)
Trends in Biotechnology (2010)
Acta Biomaterialia (2009)
American Journal of Physiology - Heart and Circulatory Physiology (2009)
Chemistry of Materials (2007, 2009)
FASEB Journal (2009)
Journal of Biomedical Materials Research: Part B – Applied Biomaterials (2009)
Macromolecules (2009)
Biotechnology and Bioengineering (2008)
Nature Clinical Practice Cardiovascular Medicine (2008)
Advanced Functional Materials (2008)
Analyst (2008)
Biotechnology Progress (2008)
Chemical Vapor Deposition (2008)
Chemistry of Materials (2007)
Macromolecular Rapid Communications (2007)
IET Nanobiotechnology (2007)
International Journal of Nanomedicine (2007)
International Journal of Nanotechnology (2007)
Thin Solid Films (2007)
Journal of Immunological Methods (2006)

SERVICE TO THE COMMUNITY/PUBLIC

Participation in Community Affairs as a Representative of Northeastern University

- Invited panelist for discussion on entrepreneurship and technology transfer from academia to industry at the 68th New England Complex Fluids Workshop, Brandeis University. September 23, 2016.
- Invited panelist for discussion on career paths at the 11th Annual Postdoc and Graduate Student Retreat, Dana Farber Cancer Institute. September 18, 2015.
- Invited panelist at “Materials Matters: Academia,” a panel discussion on academic careers organized by the MIT Materials Science and Engineering Graduate Materials Council, March 1, 2011.
- Invited panelist at “Materials Matters: Academia,” a panel discussion on academic careers organized by the MIT Materials Science and Engineering Alumni Club, November 24, 2009.
- Member, Fundraising Committee, Kennedy Academy for Health Careers (Committee Chairs: Dr. Joseph Aoun, President, Northeastern University, and Dr. Gary Gottlieb, President and CEO, Brigham and Women’s Hospital), Jun-Nov 2007.

- Judge at the 61st Annual Boston Public Schools Science Fair, held at Northeastern University on March 10, 2007.
- Judge at the Boston Latin School Science Fair, February 3, 2007.
- Invited panelist at “Surviving Your First Year as an Assistant Professor,” a panel discussion organized by the Career Services Office and the Office of the Provost at MIT, July 19, 2006.
- Judge at the 60th Annual Boston Public Schools Science Fair, held at Northeastern University on March 11, 2006.

Service to Other Organizations

- Member, Johns Hopkins University Alumni Council (2007-2010).
- President, Boston Chapter of the Johns Hopkins Alumni Association, 2006-2008. (Chapter covers the entire New England region).