

CURRICULUM VITAE

Name: Michael V. Pishko, Ph.D.
Stewart and Stevenson Professor II of Biomedical Engineering
Director, National Center for Therapeutics Manufacturing

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Education

Ph.D. - August 1992
Chemical Engineering; Supervisor: Prof. Adam Heller
University of Texas at Austin, Austin, TX 76712

Master of Science - December 1987
Chemical Engineering; Supervisor: Prof. Thomas Marrero
University of Missouri - Columbia, Columbia, MO 65211

Bachelor of Science - May 1986
Chemical Engineering (graduated Honors Scholar)
University of Missouri - Columbia, Columbia, MO 65211

Academic and Corporate Experience

Dean's Fellow for Research Infrastructure (September 2014 to Present)
Texas A&M University, College Station, TX 77843
Professor of Biomedical Engineering (January 2012 to Present)
Texas A&M University, College Station, TX 77843
Professor of Chemical Engineering (by courtesy, October 2013 to Present)
Texas A&M University, College Station, TX 77843
Director, National Center for Therapeutics Manufacturing (2009 to Present)
Texas A&M University, College Station, TX 77843
Professor of Chemical Engineering (August 2007 to January 2012)
Texas A&M University, College Station, TX 77843
Department Head (August 2007 to July 2011)
Texas A&M University, College Station, TX 77843
Distinguished Professor of Chemical Engineering (January 2007 to June 2007)
The Pennsylvania State University, University Park, PA
Professor of Chemical Engineering (July 2005 to December 2006)

The Pennsylvania State University, University Park, PA
Professor of Chemistry (by courtesy, July 2005 to 2007)

The Pennsylvania State University, University Park, PA
Professor of Materials Science & Engineering (by courtesy, July 2005 to 2007)

The Pennsylvania State University, University Park, PA
Associate Professor of Chemistry (by courtesy, December 2003 to 2005)

Appointment by courtesy, The Pennsylvania State University, University Park, PA
Associate Professor of Materials Science and Engineering (by courtesy, July 2002 to 2005)

Appointment by courtesy, The Pennsylvania State University, University Park, PA
Associate Professor of Chemical Engineering (August 2001 to June 2005)

The Pennsylvania State University, University Park, PA
Assistant Professor of Chemical Engineering (January 1997 – July 2001)

Texas A&M University, College Station, TX 77843-3122
Research Scientist and Scientific Co-Founder (1996)

Sontra Medical, Inc., Cambridge, MA
Postdoctoral Associate (1995)

Supervisor: Prof. Robert Langer
Department of Chemical Engineering, Massachusetts Institute of Technology
Research Engineer (1992 - 1994)

E. Heller & Company (formerly Therasense, Inc. of Alameda, CA, then Abbott Diabetes Care)

Leadership & Resource Management

- Leading workforce development and education programs (\$22.7 million contract) for the Texas A&M Center for Innovation in Advanced Development and Manufacturing (CIADM, Associate PI).
- As Dean's Fellow, leading efforts to develop shared infrastructure for research, commercialization, and workforce development programs.
- As Director, leading academic, workforce training, and K-12 outreach initiatives for the National Center for Therapeutics Manufacturing (NCTM).
- Under my leadership as department head of chemical engineering (2007-2011), we grew from \$6.9M to \$13.6M in annual research expenditures, raised \$2M in gifts and endowments, from two publications/faculty/year to four publications/faculty/year, and grew from 800 to 1000 students, all while maintaining in the faculty a propensity for high quality teaching while also leading the department through a 10% reduction in the academic budget.
- Led chemical engineering department through ABET accreditation and external graduate program review.
- Hired academic and business staff. Developed policies regarding purchasing, travel, scholarship allocation, and inventory control.
- Developed a faculty led study abroad program in Tianjin, China and a reciprocal exchange program with Swansea University, Wales.

Marketing & Communications

- Hired government and corporate relations staff for the NCTM

- While head of chemical engineering, hired communications staff and developed a communications strategy targeting alumni, leadership at peer institutions, and NAE members.
- Developed semiannual departmental magazine and a departmental annual report.

Development Activities

- While head of chemical engineering, raised funds for student scholarships and the department's unit operations laboratories.
- As center director, raised corporate funding for summer STEM programs.
- Established development goals for the department and worked with the department's development officer to meet those goals.
- Stewardship activities, including an endowed donor banquet each year.
- New donor development activities, including an annual alumni dinner where departmental activities and development opportunities are presented to prospects.

Committee Service & Experience

- Senseonics, Inc., Scientific Advisory Board
- Research Valley Partnership, Strategic Relations Committee
- Kalon Biotherapeutics Inc., Scientific Advisory Board
- Chair, Center for Remote Health Search Committee, Texas A&M University (2013)
- Search Committee, Provost and Executive Vice President, Texas A&M University (2011)
- NCTM Leadership Team and Building Programming committees (2009-2010)
- Chair: Aerospace Engineering department head search committee (2009)

Honors and Awards

Regents Fellow Service Award, Texas A&M University System, 2014 to present
Academy of Distinguished Alumni, Department of Chemical Engineering, University of Missouri – Columbia, 2013
Honorary Professor, Swansea University, 2012 to present
Stewart & Stevenson Professor II, Texas A&M University, 2012 to present
International Society for Electrochemistry, Keynote Lecture, 2013
Charles D. Holland '53 Professor, Texas A&M University, 2008 to 2011
American Institute of Chemical Engineers, Bioengineering Plenary Lecture Award, 2008
Unocal Professor, Texas A&M University, 2007 to 2008
Distinguished Professor, Pennsylvania State University, 2007
College of Fellows, American Institute for Medical and Biological Engineering, 2007
Participant, 2005 German-American Frontiers of Engineering Symposium, National Academy of Engineering and the Alexander von Humboldt Foundation, Potsdam, Germany, May 2005.
Mary Jane Kugel Award, Juvenile Diabetes Research Foundation International, 2002
Texas A&M University, College of Engineering, Select Young Faculty Fellow, 2000-2001
Outstanding Young Scientist, Houston Society for Engineering in Medicine & Biology, 2000
Texas A&M University, College of Engineering, Phillips Petroleum Company Faculty Fellow, 1999 - 2000
Alfred P. Sloan Research Fellow, 1999 - 2001
NSF CAREER Award, 1999 - 2003

Biomedical Engineering Society Young Investigator Travel Award, 1997
 NASA Graduate Training Grant Fellow, 1986 and 1987

Editorships and Editorial Boards

Editorial Board, *Journal of Diabetes Science and Technology*, 2007-2010.
 Associate Editor, *IEEE Sensors Journal*, 2003-2007.
 Editorial Board, *IEEE Sensors Journal*, 2003-2007.
 Editor, *Encyclopedia of Sensors*, American Scientific Publishers, 2005.
 Guest Editor, *IEEE Sensors Journal*, Biosensors special issue, June 2003.
 Editorial Board, *Sensor Letters*, 2004-2006.
 Editorial Board, *Applied Biochemistry & Biotechnology*, 2003-2005.

Refereed Journal Publications

1. Moglia, R.; Whitely, M.; Brooks, M.; Robinson, J.; Pishko, M.; Cosgriff-Hernandez, E. "Solvent-Free Fabrication of polyHIPE Microspheres for Controlled Release of Growth Factors" *Macromol. Rapid Commun.* **2014**, 35(14), 1301–1305.
2. Zhou, J.; Pishko, M.; Lutkenhaus, J. "Thermoresponsive Layer-by-Layer Assemblies for Nanoparticle-Based Drug Delivery" *Langmuir* **2014**, 30 (20), 5903–5910.
3. Yu, X.; Pishko, M. "Nanoparticle-Based Biocompatible and Targeted Drug Delivery: Characterization and in Vitro Studies" *Biomacromolecules* **2011**, 12(9), 3205-3212.
4. Yu, X.; Pishko, M. "Release of Paclitaxel Nanoparticles from pH Sensitive and Biodegradable Dextran based Hydrogels" *Soft Matter* **2011**, 7, 8898-8904.
5. Cummin, B.; Lim, J.; Simanek, E.; Pishko, M.; Coté, G.; "Encapsulation of a Concanavalin A/dendrimer glucose sensing assay within microporated poly (ethylene glycol) microspheres" *Biomed. Opt. Express* **2011**, 18;2(5), 1243-57.
6. Leibner, E.; Barnthip, N.; Chen, W.; Baumrucker, C.; Badding, J.; Pishko, M.; Vogler, E. "Superhydrophobic effect on the adsorption of human serum albumin" *Acta Biomaterialia* **2009**, 5(5), 1389-98.
7. Lee, S.; Ibey, B.; Pishko, M.; Cote', G. "Measurement of pH and dissolved oxygen within cell culture media using a hydrogel microarray sensor" *Sensors & Actuators B* **2008**, 128(2), 388-398.
8. Sharma, G.; Pishko, M.; Grimes, C. "Fabrication of metallic nanowire arrays by electrodeposition into nanoporous alumina membranes: Effect of barrier layer" *J. Material Sci.* **2007**, 42, 4738-4744.
9. Ainslie, K.; Bachelder, M.; Sharma, G.; Grimes, C.; Pishko, M. "Macrophage cell adhesion and inflammation cytokines on magnetostrictive nanowires" *Nanotoxicology* **2007**, 1(4), 279-290.
10. Dyer, M.; Ainslie, K.; Pishko, M. "Protein Adhesion on Silicon Supported Hyperbranched Poly(ethylene glycol) and Poly(allylamine) Thin Films" *Langmuir* **2007**, 23(13), 7018-7023.
11. Zahr, A.; Pishko, M. "Encapsulation of paclitaxel in macromolecular nanoshells" *Biomacromolecules* **2007**, 8(6), 2004-2010.
12. Mugweru, A.; Clark, B.; Pishko, M. "Electrochemical sensor array for glucose monitoring fabricated by rapid immobilization of active glucose oxidase within photochemically polymerized hydrogels" *J. Diabetes Science & Technology* **2007**, 1(3), 366-371.
13. Yake, A.; Zahr, A.; Velegol, D.; Pishko, M. "Localized Functionalization of Individual Colloidal Carriers for Cell Targeting and Imaging" *Biomacromolecules* **2007**, 8(6), 1958-1965.

14. Mugweru, A.; Clark, B.; Pishko, M. "Electrochemical redundant micro-sensor arrays for glucose monitoring with patterned polymer films" *Electroanalysis* **2007**, *4*, 253-258.
15. Ainslie, K.; Bachelder, M.; Borkar, S.; Zahr, A.; Sen, A.; Badding, J.; Pishko, M. "Cell adhesion on nanofibrous polytetrafluoroethylene (nPTFE)" *Langmuir* **2007**, *23*(2), 747-754.
16. Rounds, R.; Ibey, B.; Beier, H.; Pishko, M.; Cote', G. "Microporated PEG spheres for fluorescent analyte detection" *J. Fluorescence* **2007**, *17*(1), 57-63.
17. Koh, W.G.; Pishko, M. "Fabrication of cell-containing hydrogel microstructures inside microfluidic devices that can be used as cell-based biosensors" *Anal Bioanal Chem* **2006**, *385*(8), 1389-97.
18. Zahr, A.; Davis, C.; Pishko, M. "Macrophage uptake of core-shell nanoparticles surface modified with poly(ethylene glycol)" *Langmuir* **2006**, *22*, 8178-8185.
19. Li, N.; DeGennaro, M.; Liebenberg, W.; Tiedt, L.; Zahr, A.; Pishko, M.; de Villiers, M. "Increased dissolution and physical stability of micronized nifedipine particles encapsulated with a biocompatible polymer and surfactants in a wet ball milling process" *Pharmazie* **2006**, *61*, 595-603.
20. Zguris, J.; Pishko, M. "Nitric Oxide Sensitive Fluorescent Poly(ethylene) glycol Hydrogel Microstructures" *Sensors & Actuators B* **2006**, *115*, 503-509.
21. Allcock, H.; Phelps, M.; Barrett, E.; Pishko, M.; Koh, W. "Photolithographic Development of Polyphosphazene Hydrogels for Potential use in Microarray Biosensors" *Chem. Mater.* **2006**, *18*, 609-613.
22. Itle, L.; Pishko, M. "Multiphenotypic Whole Cell Sensor for Viability Screening" *Anal. Chem.* **2005**, *77*(24), 7887-7893.
23. Stine, R.; Hampton, J.; Dameron, A.; Weiss, P.; Pishko, M. "Heat-Stabilized Phospholipid Films: Film Characterization and the Production of Protein Resistant Surfaces" *Langmuir* **2005**, *21*, 11352-11356.
24. Ibey, B.; Beier, H.; Rounds, R.; Yadavalli, V.; Pishko, M.; Coté, G. "Competitive binding assay for glucose based on glycodendrimer-fluorophore conjugates" *Anal. Chem.* **2005**, *77*(21), 7039-7046.
25. Kim, S.-H.; Kim, B.; Yadavalli, V. K.; Pishko, M. "Encapsulation of Enzymes within Polymer Spheres To Create Optical Nanosensors for Oxidative Stress" *Anal. Chem.* **2005**, *77*(21), 6828-6833.
26. Zguris, J.; Pishko, M. "pH sensitive fluorescent poly(ethylene glycol) hydrogel microstructures for monitoring in cell culture systems" *Sensor Lett.* **2005**, *3*(3), 206-210.
27. Bachelder, E.; Ainslie, K.; Pishko, M. "Utilizing a quartz crystal microbalance for quantifying CD4+ T cell counts" *Sensor Lett.* **2005**, *3*(3), 211-215.
28. Ainslie, K.; Sharma, G.; Dyer, M.; Grimes, C.; Pishko, M. "Attenuation of Protein Adsorption on Static and Oscillating Magnetostrictive Nanowires" *Nano Letters* **2005**, *5*(9), 1852-1856.
29. Lee, S.; Nayak, V.; Dodds, J.; Pishko, M.; Smith, N. "Glucose measurements with sensors and ultrasound" *Ultrasound Med. Biol.* **2005**, *31*(7), 971-7.
30. Zguris, J.; Itle, L.; Hayes, D.; Pishko, M. "Microreactor Microfluidic Systems with Human Microsomes and Hepatocytes for use in Metabolite Studies" *Biomedical Microdevices* **2005**, *7*(2), 117-25.
31. Itle, L.; Pishko, M. "Cryopreservation of cell-containing poly(ethylene) glycol hydrogel microarrays" *Biotechnology Progress* **2005**, *21*(3), 1004-1007.

32. Stine, R.; Schengrund, C.; Pishko, M. "Comparison of Glycosphingolipids and Antibodies as Receptor Molecules for Ricin Detection" *Anal. Chem.* **2005**, *77*(9), 2882-8.
33. Zguris, J.; Itle, L.; Koh, W.-G.; Pishko, M. "A Novel Single-Step Fabrication of Heterogeneous Poly (ethylene) glycol Hydrogel Microstructures Containing Multiple Phenotypes of Mammalian Cells" *Langmuir* **2005**, *21*(9), 4168-74.
34. Itle, L.; Koh, W.; Pishko, M. "Hepatocyte Viability and Protein Expression within Surface Immobilized Hydrogel Microstructures" *Biotechnology Progress* **2005**, *21*(3), 926-32.
35. Koh, Won-Gun; Pishko, M. "Immobilization of multi-enzyme microreactors inside microfluidic devices" *Sensors & Actuators B* **2005**, *106*(1), 335-342.
36. Yadavalli, V.; Russell, R.; McShane, M.; Cote, G.; Pishko, M. "A Monte Carlo Simulation of Photon Propagation in Fluorescent Poly(ethylene glycol) Hydrogel Microsensors" *Sensors & Actuators B* **2005**, *105*, 365-377.
37. Zahr, A.; de Villiers, M.; Pishko, M. "Encapsulation of Drug Nanoparticles in Self-Assembled Macromolecular Nanoshells" *Langmuir* **2005**, *21*, 403-410.
38. Meiring, J.; Schmid, M.; Grayson, S.; Rathsack, B.; Johnson, D.; Kirby, R.; Kannappan, R.; Manthiram, K.; Hsia, B.; Hogan, Z.; Ellington, A.; Pishko, M.; Willson, C. "Hydrogel Biosensor Array Platform Indexed by Shape" *Chem. Mater.* **2004**, *16*, 5574-5580.
39. O'Neal, D. B.; Meledeo, M. A.; Davis, J.; Ibey, B.; Pishko, M.; Coté, G. "Oxygen sensor based on the fluorescence quenching of a ruthenium complex immobilized in a biocompatible poly(ethylene glycol) hydrogel" *IEEE Sensors Journal* **2004**, *4*(6), 728-734.
40. Hile, D.; Pishko, M. "Solvent-Free Protein Encapsulation within Biodegradable Polymer Foams" *Drug Delivery* **2004**, *11*, 287-293.
41. Stine, R.; Schengrund, C.; Pishko, M. "Heat-Stabilized Glycosphingolipid Films for Biosensing Applications" *Langmuir* **2004**, *20*, 6501-6506.
42. Mor, G.; Carvalho, M.; Varghese, O.; Paulose, M.; Pishko, M.; Grimes, C. "A Room Temperature TiO₂-Nanotube Hydrogen Sensor Able to Photoactively Self-clean from Environmental Contamination" *J. Mater. Res.* **2004**, *19*(2), 628-634.
43. Yadavalli, V.; Pishko, M. "Biosensing in microfluidic channels using fluorescence polarization" *Anal. Chim. Acta.* **2004**, *507*(1), 123-128.
44. Yadavalli, V.; Koh, W.-G.; Lazur, G.; Pishko, M. "Microfabricated protein-containing poly(ethylene glycol) hydrogel arrays for biosensing" *Sensors & Actuators B: Chemical* **2004**, *97*(2-3), 290-297.
45. Koh, W.-G.; Pishko, M. "Photoreaction injection molding of biomaterial microstructures" *Langmuir* **2003**, *19*(24), 10310-10316.
46. Koh, W.; Itle, L.; Pishko, M. "Molding of hydrogel microstructures to create multi-phenotype cell microarrays" *Anal. Chem.* **2003**, *75*, 5783-5789.
47. Koh, W.-G.; Revzin, A.; Simonian, A.; Reeves, T.; Pishko, M. "Control of Mammalian Cell and Bacteria Adhesion on Substrates Micropatterned with Poly(ethylene glycol) Hydrogels" *Biomedical Microdevices* **2003**, *5*(1), 11-19.
48. Gong, D.; Yadavalli, V.; Paulose, M.; Pishko, M.; Grimes, C. "Drug Release Characteristics of Nanoporous Alumina Capsules" *Biomedical Microdevices* **2003**, *5*(1), 75-80.
49. Grimes, C.; Ong, K.; Varghese, O.; Yang, X.; Mor, G.; Paulose, M.; Dickey, E.; Ruan, C.; Pishko, M.; Kendig, J.; Mason, A. "A Sentinel Sensor Network for Hydrogen Sensing" *Sensors* **2003**, *3*, 69-82.
50. Simonian, A.; Revzin, A.; Wild, J.; Elkind, J.; Pishko, M. "Characterization of Oxidoreductase/ Redox Polymer Electrostatic Film Assembly on Gold by Surface Plasmon Resonance Spectroscopy and FTIR" *Analytical Chimica Acta* **2002**, *446*, 201-212.

51. Koh, W.; Revzin, A.; Pishko, M. "Poly(ethylene glycol) Hydrogel Microstructures Encapsulating Living Cells" *Langmuir* **2002**, *18*, 2459-2462.
52. Pishko, M.; Revzin, A.; Simonian, A. "Mass Transfer in Amperometric Biosensors Based on Nanocomposite Thin Films of Redox Polymers and Oxidoreductases (invited)" *Sensors* **2002**, *2*, 79-90.
53. Revzin, A.; Sirkar, K.; Pishko, M. "Glucose, Lactate, and Pyruvate Biosensor Arrays Based on Redox Polymer/Oxidoreductase Nanocomposite Thin Films Deposited on Photolithographically Patterned Gold Electrodes" *Sensors & Actuators B* **2002**, *81*, 359-368.
54. Revzin, A.; Russell, R.; Yadavalli, V.; Koh, W.; Deister, C.; Hile, D.; Mellott, M.; Pishko, M. "Fabrication of Poly(ethylene glycol) Hydrogel Microstructures Using Photolithography" *Langmuir* **2001**, *17*, 5440-5447.
55. Amirpour, M.; Lackowski, W.; Ghosh, P.; Crooks, R.; Pishko, M. "Growth of Mammalian Cells on Micropatterned Surfaces of Weak-Acid, Polyelectrolyte Hyperbranched Thin Films on Gold" *Analytical Chemistry* **2001**, *73*, 1560-1566.
56. Mellott, M.; Searcy, K.; Pishko, M. "Release of Protein from Highly Cross-Linked Hydrogels of Poly(ethylene glycol) Diacrylate Fabricated by UV Polymerization" *Biomaterials* **2001**, *22*, 929-941.
57. Russell, R.; Axel, A.; Shields, K.; Pishko, M. "Mass Transfer in Rapidly Photopolymerized Poly(ethylene glycol) Hydrogels Used for Chemical Sensing" *Polymer* **2001**, *42*, 4893-4901.
58. Hile, D.; Pishko, M. "Emulsion Polymerization of D,L-Lactide and Glycolide in Supercritical Carbon Dioxide" *J. Polym. Sci. A* **2001**, *39(4)*, 562-570.
59. McShane, M.; Russell, R.; Pishko, M.; Coté, G. "Glucose Monitoring Using Implanted Fluorescent Microspheres" *IEEE Engineering in Medicine and Biology* **2000**, *19(6)*, 36-45.
60. Cantrell, J.; McArthur, M.; Pishko, M. "Transdermal Extraction of Interstitial Fluid Using Low Frequency Ultrasound Quantified Using $^3\text{H}_2\text{O}$ as a Tracer Molecule" *J. Pharm. Sci.* **2000**, *89(9)*, 1170-1179.
61. Sirkar, K.; Revzin, A.; Pishko, M. "Glucose and Lactate Biosensors Based on Redox Polymer/Oxidoreductase Nanocomposite Thin Films" *Anal. Chem.* **2000**, *72(13)*, 2930-2936.
62. McShane, M.; Rastegar, S.; Pishko, M.; Coté, G. "Monte Carlo Modeling for Implantable Fluorescent Analyte Sensors" *IEEE Transactions in Biomedical Engineering* **2000**, *47(5)*, 624-632.
63. Russell, R.; Sirkar, K.; Pishko, M. "Preparation of Nanocomposite Poly(allylamine)-Poly(ethylene glycol) Thin Films Using Michael Addition" *Langmuir* **2000**, *16(8)*, 4052-4054.
64. Hile, D.; Amirpour, M. L.; Akgerman, A.; Pishko, M. "Controlled Delivery of Active Basic Fibroblast Growth Factor from Microporous Poly(D,L-lactide-co-glycolide) Foams Prepared in Supercritical Carbon Dioxide" *J. Controlled Release* **2000**, *66*, 177-185.
65. Kost, J.; Mitragotri, S.; Gabbay, R.; Pishko, M.; Langer, R. "Non-invasive Measurement of Glucose and Other Analytes" *Nature Medicine* **2000**, *6(3)*, 347-350.
66. Russell, R.; Simonian, A.; Wild, J.; Pishko, M. "Poly(ethylene glycol) Hydrogel Encapsulated Fluorophore-Enzyme Conjugates for Direct Detection of Organophosphorus Neurotoxins" *Anal. Chem.* **1999** *71(21)*, 4909-4912.
67. Hile, D.; Pishko, M. "Ring-Opening, Precipitation Polymerization of Poly(D,L-lactide-co-glycolide) in Supercritical Carbon Dioxide" *Macromolecular Rapid Communications* **1999**, *20(10)*, 511-514.

68. Russell, R.; Gefrides, C.; McShane, M.; Coté, G.; Pishko, M. "A Fluorescence-Based Glucose Biosensor Based on Concanavalin A and Dextran Encapsulated in a Poly(ethylene glycol) Hydrogel" *Anal. Chem.* **1999**, *71*(15), 3126-3132.
69. Franchina, J.; Lackowski, W.; Dermody, D.; Crooks, R.; Bergbreiter, D.; Sirkar, K.; Russell, R.; Pishko, M. "Electrostatic Immobilization of Glucose Oxidase in a Weak-Acid, Polyelectrolyte Hyperbranched Thin Film on Gold: Fabrication, Characterization, and Enzymatic Activity" *Anal. Chem.* **1999**, *71*(15), 3133-3139.
70. Ghosh, P.; Amirpour, M. L.; Lackowski, W.; Pishko, M.; Crooks, R. "A Simple Lithographic Approach for Preparing Patterned, Micron-Scale Corrals for Controlling Cell Growth" *Angew. Chem., Int. Edition* **1999**, *38*(11), 1592-1595.
71. Sirkar, K.; Pishko, M. "Amperometric Biosensors Based on Oxidoreductases Immobilized in Photopolymerized Poly(ethylene glycol) Redox Hydrogels" *Anal. Chem.* **1998**, *70*, 2888-2894.
72. Schmidtke, D. W.; Pishko, M. V.; Quinn, C. P.; Heller, A. "Statistics for Critical Decision Making Based on Readings of Pairs of Implanted Sensors" *Anal. Chem.* **1996**, *68*(17), 2845.
73. Pishko, M. V. "Macromolecular Wiring of Oxidoreductases and Potential Interesting Applications" *Trends in Polymer Science* **1995**, *3*(10), 342.
74. Quinn, C. P.; Pishko, M. V.; Schmidtke, D. W.; Ishikawa, M.; Wagner, J. G.; Raskin, P.; Hubbell, J. A.; Heller, A. "Kinetics of Glucose Delivery to Subcutaneous Tissue in Rats: A Study Utilizing Amperometric Biosensors" *American Journal of Physiology* **1995**, *269*(Endocrinol. Metab. **32**), E155.
75. Csöregi, E.; Quinn, C.; Lindquist, S.-E.; Schmidtke, D.; Pishko, M.; Ye, L.; Katakis, I.; Heller, A. "Design, Characterization, and One-Point *In Vivo* Calibration of a Subcutaneously Implanted Glucose Electrode" *Anal. Chem.* **1994**, *66*(19), 3131.
76. Linke, B.; Kerner, W.; Kiwit, M.; Pishko, M.; Heller, A. "Amperometric Biosensor for *In Vivo* Glucose Sensing Based on Glucose Oxidase Immobilized in a Redox Hydrogel" *Biosensors and Bioelectronics* **1994**, *9*, 151.
77. Pishko, M. V.; Michael, A. C.; Heller, A. "Amperometric Glucose Microelectrodes Prepared through Immobilization of Glucose Oxidase in Redox Hydrogels" *Anal. Chem.* **1991**, *63*(20), 2268.
78. Pishko, M. V.; Katakis, I.; Lindquist, S.-E.; Heller, A.; Degani, Y. "Electrical Communication Between Graphite Electrodes and Glucose Oxidase/Redox Polymer Complexes" *Mol. Cryst. Liq. Cryst.* **1990**, *190*, 221.
79. Pishko, M. V.; Katakis, I.; Lindquist, S.-E.; Ye, L.; Gregg, B. A.; Heller, A. "Direct Electrical Communication between Graphite Electrodes and Surface Adsorbed Glucose Oxidase/Redox Polymer Complexes" *Angewandte Chemie, International Ed.* **1990**, *29*(1), 82.

Review Articles, Book Chapters and Editorials

1. Coté, G.L., McShane, M., and Pishko, M., Chapter 11 "Fluorescence-based glucose biosensors", Glucose optical sensing and impact, edited by Valery Tuchin, Published by Taylor & Francis Group, pp. 319-352, 2009.
2. Clark, B.; Pishko, M. "Redundant Arrays and Next Generation Sensors" in In Vivo Glucose Sensing D. Cunningham and J. Stenken, eds., Wiley, New York, 2009.
3. Zahr, A.; Pishko, M. "Nanotechnology for Cancer Chemotherapy" in Nanotechnology in Drug Delivery M. de Villiers, P. Armwit, and G. Kwon, eds., Springer, New York, **2009**.

4. Ibey, B.L., Pishko, M.V., and Coté, G.L., Chapter 4 “Implantable Concanavlin A Based Sensors for Interstitial Fluid Glucose Sensing in Diabetes”, Volume 11: Topics in Fluorescence Spectroscopy, Geddes, C., & Lackowicz, J., pp.89-111, March 2006.
5. Itle, L.; Koh, W.-G.; Pishko, M. “Multi-phenotypic Cellular Arrays for Biosensing” in BioMEMS and Biomedical Nanotechnology Mauro Ferrari, ed., V3: Therapeutic Micro/Nanotechnology T. Desai and S. Bhatia, eds., Springer, New York, **2005**.
6. Stine, R.; Pishko, M. “Operating principles of biosensors” in Encyclopedia of Agricultural, Food, and Biological Engineering D. Heldman, ed., Marcel Dekker, New York, **2005**.
7. Coté, G.; Pishko, M. “Editorial: Special Issue on Biosensors” *IEEE Sensors Journal* **2003**, 3(3), 251-266.
8. Coté, G.; Lec, R.; Pishko, M. “Emerging Biomedical Sensing Technologies and Their Applications” *IEEE Sensors Journal* **2003**, 3(3), 251-266.
9. Pishko, M. “Recent Advances in Biomaterials” in Encyclopedia of Chemical Processing and Design, Vol. 69, Supplement 1 R. G. Anthony and J. J. McKetta, ed., Marcel Dekker, New York, 2002.
10. Pishko, M. “Analysis: Glucose Monitoring by Reverse Iontophoresis” *Diabetes Technology & Therapeutics*, **2000**, 2(2), 207-208.
11. Pishko, M. "Biomaterials" *IEEE Engineering in Medicine and Biology* **1999**, 18(1), 19-20.
12. Shastri, V.; Pishko, M. “Biomedical Applications of Electroactive Polymers” in Electrical and Optical Polymer Systems: Fundamentals, Methods, and Applications, Wise, D., Wnek, G., Trantolo, D., Cooper, T., and J. Gresser, ed. Marcel Dekker, New York, 1998.
13. Pishko, M. V. and Heller, A. (invited) "Enzyme Electrodes" in McGraw-Hill Yearbook of Science and Technology, 1994.
14. Kerner, W.; Lindquist, S.-E.; Pishko, M. V.; Heller, A. “Amperometric Glucose Sensor Containing Glucose Oxidase, Cross-Linked with Redox Gels” in In Vivo Chemical Sensors: Recent Developments, Alcock, S. J. and Turner, A. P. F., ed. Cranfield Press; Bedford, UK; 1993.

Issued U.S. Patents

1. A. Heller, M. Pishko; “Subcutaneous Glucose Electrode” U.S. Patent 8,741,590.
2. A. Heller, M. Pishko; “Subcutaneous Glucose Electrode” U.S. Patent 8,414,750.
3. A. Heller, M. Pishko; “Subcutaneous Glucose Electrode” U.S. Patent 8,414,749.
4. B. Ibey, V. Yadavalli, R. Rounds, H. Beier, G. Cote, M. Pishko; Michael V.; “Implantable system for glucose monitoring using fluorescence quenching” U.S. Patent 8,088,595.
5. B. Ibey, V. Yadavalli, R. Rounds, H. Beier, G. Cote, M. Pishko; Michael V.; “Implantable system for glucose monitoring using fluorescence quenching” U.S. Patent 7,704,704.
6. A. Heller, M. Pishko; “Subcutaneous Glucose Electrode” U.S. Patent 7,462,264.
7. A. Heller, M. Pishko; “Subcutaneous Glucose Electrode” U.S. Patent 6,881,551.
8. A. Heller, M. Pishko; “Subcutaneous Glucose Electrode” U.S. Patent 6,514,718.
9. S. Rowe, J. Kost, S. Mitragotri, M. Pishko, M. Davis; “Ultrasound enhancement of transdermal transport” U.S. Patent 6,491,657.
10. G. Cote, M. Pishko, K. Sirkar, R. Russell, R. Anderson; “Compositions and Methods for Analyte Detection” U.S. Patent 6,485,703.
11. A. Heller, M. Pishko; “Subcutaneous Glucose Electrode” U.S. Patent 6,329,161.
12. A. Heller, M. Pishko; “Subcutaneous Glucose Electrode” U.S. Patent 6,284,478.
13. S. Rowe, J. Kost, S. Mitragotri, M. Pishko, M. Davis; “Ultrasound Enhancement of Transdermal Transport” U.S. Patent 6,234,990.

14. A. Heller, M. Pishko; "Subcutaneous Glucose Electrode" U.S. Patent 6,162,611.
15. A. Heller, M. Pishko; "Electrochemical Measurement System" U.S. Patent 6,121,009.
16. A. Heller, M. Pishko, E. Heller; "Photocatalyst-Binder Compositions" U.S. Patent 6,093,676.
17. A. Heller, M. Pishko; "Electrochemical Measurement System" U.S. Patent 6,083,710.
18. A. Heller, M. Pishko; "Subcutaneous Glucose Electrodes" U.S. Patent 5,965,380.
19. M. Johnson, S. Mitragotri, D. Blankschtein, R. Langer, M. Pishko, J. Kost; "Chemical and Physical Enhancers and Ultrasound for Transdermal Drug Delivery" U.S. Patent 5,947,921.
20. A. Heller, M. Pishko, E. Heller; "Photocatalyst-Binder Compositions" U.S. Patent 5,854,169.
21. A. Heller, M. Pishko, E. Heller; "Photocatalyst-Binder Compositions" U.S. Patent 5,849,200.
22. A. Heller, M. Pishko, E. Heller; "Photocatalyst-Binder Compositions" U.S. Patent 5,616,532.
23. A. Heller, M. Pishko; "Subcutaneous Glucose Electrodes" U.S. Patent 5,593,852.
24. B. Gregg, A. Heller, W. Kerner, M. V Pishko, I. Katakis; "Enzyme Electrodes" U.S. Patent 5,264,105.
25. B. Gregg, A. Heller, W. Kerner, M. Pishko, I. Katakis; "Enzyme Electrodes" U.S. Patent 5,264,104.

Conference Proceedings

1. Wang, C.; Pishko, M.; Laird, C. "Modeling and analysis of pharmaceutical manufacturing systems with government intervention and emergency supply" *11th International Symposium on Process Systems Engineering - PSE2012, Part 1*, **2012**, 1155-1159.
2. Cummins, B.; Pishko, M.; Cote, G. "Understanding the mechanism and optimizing a competitive binding fluorescent glucose sensor" *Proc. SPIE* **2011**, 7906, 79060B.
3. Beier, H.T., Lim, J.D., Simanek, E.E., Pishko, M.V., and Coté, G.L., "Improvement of Dendrimer Stability in a Glucose-Sensitive Fluorescent Assay", SPIE Photonics West BIOS, San Jose, CA, Jan. **2009**.
4. Beier, H.; Ibey, B.; Pishko, M.; Cote, G. "Use of glycosylated dendrimer macromolecules to fluorescently monitor glucose concentration" *Proc. SPIE* **2007**, 6445, 644504.
5. Rounds, R.; Lee, S.; Ibey, B.; Cote, G.; Jeffords, S.; Pishko, M. "Hydrogel micro-arrays for multi-analyte detection" *Proc. SPIE* **2007**, 6445, 64450Y.
6. Ibey, B.; Beier, H.; Rounds, R.; Pishko, M.; Cote, G. "Dendrimer based fluorescent glucose sensor for diabetic monitoring" *Proceedings-SPIE Optical Diagnostics and Sensing VI* **2006**, 6904, 1-4.
7. Lee, S.; Ibey, B.; Pishko, M.; Cote, G. "Hydrogel microarray for monitoring of pH and dissolved oxygen in cell culture media" *Proceedings-SPIE Optical Diagnostics and Sensing VI* **2006**, 6904, 5-8.
8. Beier, H.; Ibey, B.; Rounds, R.; Pishko, M.; Cote, G. "Dendrimer optimization for a glucose-sensitive fluorescent assay" *Proceedings-SPIE Optical Diagnostics and Sensing VI* **2006**, 6904, 65-68.
9. Rounds, R.; Ibey, B.; Beier, H.; Pishko, M.; Cote, G. "Analysis of leaching and stability of microporated PEG spheres for fluorescent analyte detection" *Proceedings-SPIE Optical Diagnostics and Sensing VI* **2006**, 6904, 100-105.
10. Ainslie, K.; Sharma, G.; Dyer, M.; Grimes, C.; Pishko, M. "Attenuation of protein adsorption on static and vibrating magnetic nanowires" *Materials Research Society Proceedings* **2005**, Vol. 877E, S8.4.
11. Ibey, B.; Yadavalli, V.; Thomas, H.; Rounds, R.; Pishko, M.; Cote, G. "Implantable fluorescence-based glucose sensor development" *Proceedings-SPIE* **2005**, 5702, 1-6, Optical Diagnostics and Sensing V, Alexander V. Priezzhev, Gerard L. Cote, Eds.

12. Itle, L.; Zguris, J.; Pishko, M. "Cell-based bioassays in microfluidic systems" *Proceedings-SPIE* **2004**, 5588, 9-18, Smart Medical and Biomedical Sensor Technology II, Brian M. Cullum, Ed.
13. Stine, R.; Schengrund, M.; Pishko, M. "Stable, nanoscale glycosphingolipid films for use in sensing applications" *Materials Research Society Proceedings* **2004**, Vol. 823, W12.2.1.
14. Ibey, B.; Meledeo, M.; Gant, V.; Yadavalli, V.; Pishko, M.; Cote, G. "In vivo monitoring of blood glucose using poly(ethylene glycol) microspheres" *Proceedings-SPIE* **2003**, 4965, 1-6.
15. Yadavalli, V.; Pishko, M. "Biosensing in microfluidic channels using fluorescence polarization" *Materials Research Society Proceedings* **2003**, Vol. 733, N7.11.
16. Pishko, M. "Cells in Micropatterned Hydrogels: Applications in Biosensing" in BioMEMS. Fabrication and Applications of Analytical Devices, 2nd Ed., Knowledge Press, Inc., Brookline, MA, 2003.
17. Elms, R.D.; Good, T.; Klaus, D.; Pishko, M. "Chemical and Gravity Dependent Factors affecting Escherchia coli Lag Phase Termination" *Gravitational and Space Biology Bulletin* **2002**, 16(1), 21.
18. Koh, W.-G.; Pishko, M. "Cells in Micropatterned Hydrogels: Applications in Biosensing" *Materials Research Society Proceedings* **2002**, Vol. 723, O5.5.
19. O'Neal, D. P.; Meledeo, M. A.; Pishko, M.; Cote, G. "Feasibility of an on-line fluorescence-based optical sensor for oxygen monitoring in cell culture media" *Proceedings-SPIE* **2002**, 4624, 89-94, Optical Diagnostics and Sensing of Biological Fluids and Glucose and Cholesterol Monitoring II, Alexander V. Priezzhev; Gerard L. Cote; Eds.
20. Meledeo, M.; Ibey, B.; O'Neal, P.; Pishko, M.; Coté, G. "Investigation of pH and temperature effects on FRET systems for glucose sensing" *Proceedings-SPIE* **2002**, 4624, 55-65, Optical Diagnostics and Sensing of Biological Fluids and Glucose and Cholesterol Monitoring II, Alexander V. Priezzhev; Gerard L. Cote; Eds.
21. Koh, W.-G.; Pishko, M. "Chemical Sensor Arrays Using Biorecognition Molecules and Cells in Micropatterned Hydrogels" *Proceeding of the 32nd International Conference on Environmental Systems* **2002**, article 2002-01-2455.
22. O'Neal, D. P.; McShane, M. J.; Pishko, M. V.; Cote, G. L. "Implantable biosensors: analysis of fluorescent light propagation through skin" *Proc. SPIE* **2001**, 4263, 20-24, Optical Diagnostics and Sensing of Biological Fluids and Glucose and Cholesterol Monitoring, Alexander V. Priezzhev; Gerard L. Cote; Eds.
23. McShane, M.; O'Neal, D.; Russell, R.; Pishko, M.; Cote, G. "Progress toward implantable fluorescence-based sensors for monitoring glucose levels in interstitial fluid" *Proceedings-SPIE* **2000**, 3923, 78-87.
24. Padera, R.; Pishko, M.; Langer, R. "Biomaterial-Induced Vascularization, Vascular Permeability Factor and Mass Transport" *Annals of Biomedical Engineering* **2000**, 28(Supplement 1), S-122.
25. Mellott, M.; Revzin, A.; Hile, D.; Pishko, M. "Release of Proteins from Photopolymerized Poly(Ethylene Glycol) Hydrogels" *Proceedings of the International Symposium on the Controlled Release of Bioactive Materials* **2000**, 27, 8010.
26. O'Neal, D.; Russell, R.; Rastegar, S.; Pishko, M.; Cote, G. "Analysis of Fluorescence Light Propagation Through Skin for Biosensing" *Digest of Papers of the 2000 World Congress on Medical Physics and Biomedical Engineering and the Proceedings of the 22nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society* **2000**, Paper TU-B313-01.

27. Russell, R.; Cote, G.; Pishko, M. "Optical Glucose Sensors Based on Photopolymerized Poly(ethylene glycol) Hydrogels" *Digest of Papers of the 2000 World Congress on Medical Physics and Biomedical Engineering and the Proceedings of the 22nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society* **2000**, Paper TH-FXH-70.
28. Revzin, A.; Mellott, M.; Hile, D.; Pishko, M. "Controlled Released of Growth Factors from Micropatterned Hydrogels" *Transactions of the Sixth World Biomaterials Congress 2000*, Vol. 1, 232.
29. Sirkar, K.; Pishko, M. "Glucose sensor based upon nanoscale multilayered redox polymers" *Proceedings of the First Joint BMES/EMBS Conference* **1999**, 2, 841.
30. Ghosh, P.; Amirpour, M. L.; Lackowski, W.; Pishko, M.; Crooks, R. "A Simple Lithographic Approach for Preparing Patterned, Micron-Scale Corrals for Controlling Cell Growth" *Polymer Preprints* **1999**, 40(1), 423-424.
31. Russell, R.; Pishko, M.; Gefrides, C.; Cote, G. "A Fluorescent Glucose Assay using Poly-L-Lysine and Calcium Alginate Microencapsulated TRITC-Succinyl-Concanavalin A and FTIC-Dextran" *Proceedings of 20th Annual International Conference of the IEEE Engineering in Medicine and Biology Society* Oct 29 - Nov 1, **1998**, Hong Kong, pg 2858 - 2861.
32. Sirkar, K. and Pishko, M. "Thin Film Amperometric Biosensors formed by Photopolymerization of PEG Copolymers" *Annals of Biomedical Engineering* **1998**, 26(Supplement 1), S-37.
33. Mellott, M., Searcy, K. and Pishko, M. "Controlled Release of Proteins from Highly Crosslinked PEG Microspheres" *Annals of Biomedical Engineering* **1998**, 26(Supplement 1), S-121.
34. Sirkar, K. and Pishko, M. "Photopolymerized Redox Hydrogel Biosensors" *Proceedings of the 25th International Symposium on Controlled Release of Bioactive Materials* **1998**, p. 116-117.
35. Mellott, M., Searcy, K. and Pishko, M. "Transport Properties of PEG Gels" *Proceedings of the 25th International Symposium on Controlled Release of Bioactive Materials* **1998**, p. 900-901.
36. Sirkar, K. and Pishko, M. "Photopolymerized Redox Copolymers for Patterned Amperometric Biosensors" *Annals of Biomedical Engineering* **1997**, 25(Supplement 1), S-1.
37. Heller, A.; Schwitzgebel, J.; Pishko, M.; Ekerdt, J. "Environmental Photoelectrochemistry" *Proceedings of the Electrochemical Society* **1994**, 94-19, 1-9.

Invited Presentations

1. The Electrochemical Society Annual Meeting, "Designing the next generation of continuous glucose monitors" San Francisco, CA, October 2013.
2. University of Missouri-Columbia, Department of Chemical Engineering, "The National Center for Therapeutics Manufacturing" Columbia, MO, October 2013.
3. Nanomaterials: Principles and Applications, "Encapsulation of drug nanoparticles in macromolecular nanoshells" Alushta, Ukraine 2013.
4. International Society for Electrochemistry/Bioelectrochemistry Society, "Designing the next generation of continuous glucose monitors" Bochum, Germany, March 2013.
5. University of Missouri-Columbia, Department of Chemical Engineering, "Encapsulation of drug nanoparticles in macromolecular nanoshells" Columbia, MO, April 2012.

6. University of Southern California, Department of Chemical Engineering, "Encapsulation of drug nanoparticles in macromolecular nanoshells" Los Angeles, CA, January 2011.
7. University of Oklahoma, Department of Chemical Engineering, "Encapsulation of drug nanoparticles in macromolecular nanoshells" Norman, OK, October 2010.
8. University of Colorado - Boulder, Department of Chemical and Biomolecular Engineering, "Encapsulation of drug nanoparticles in macromolecular nanoshells" Boulder, CO, April 2010.
9. Texas Tech University, Department of Chemical Engineering, "Encapsulation of drug nanoparticles in macromolecular nanoshells" Riverside, California, December 2009.
10. American Institute of Chemical Engineers Annual Meeting, "Nanoparticles for drug delivery and biochemical sensing" Philadelphia, PA, November 2008.
11. University of California-Riverside, Department of Chemical and Environmental Engineering, "Encapsulation of drug nanoparticles in macromolecular nanoshells" Riverside, California, September 2008.
12. Summer 2008 ACS National Meeting & Exposition, "There will be blood: experiences in startup companies after graduate school" Philadelphia, PA, August 2008.
13. Spring 2008 ACS National Meeting & Exposition, "Encapsulation of drug nanoparticles in macromolecular nanoshells" New Orleans, LA, April 2008.
14. Tianjin University, School of Chemical Engineering, "Nanotechnology for Drug Delivery" Tianjin, China, March 2008.
15. University of New Mexico, Department of Chemical Engineering, "Encapsulation of drug nanoparticles in macromolecular nanoshells" Albuquerque, New Mexico, February 2008.
16. American Association of Pharmaceutical Scientists, 43rd Annual Pharmaceutical Technologies Arden Conference, "Encapsulation of drug nanoparticles in macromolecular nanoshells" West Point, New York, February 2008.
17. Michigan State University, Department of Chemical Engineering, "Encapsulation of drug nanoparticles in macromolecular nanoshells" East Lansing, Michigan, January 2008.
18. IUMACRO 07, "Microfabricated Cell-based Biosensor Arrays" Brooklyn, New York, NY, June 2007.
19. AsiaSense 2007, Plenary Lecture, "Microfabricated Cell-based Biosensor Arrays" University of Santo Tomas, Manila, Philippines June 2007.
20. University of Houston, Department of Chemical Engineering, "Cell-based Biosensor Arrays" Houston, TX, January 2007
21. 2006 Fine Particle Society Meeting "Encapsulation of drug nanoparticles in macromolecular nanoshells" San Diego, CA, December 2006.
22. 232nd ACS National Meeting, Session: Polymers in Biosensors and Biochips "Cell based bioassays in microfluidic systems" San Francisco, CA, September 2006.
23. Particles 2006 "Encapsulation of drug nanoparticles in macromolecular nanoshells" Orlando, FL, May 2006.
24. Governor's Bionanotechnology Initiative Distinguished Speaker, "Minimization of biofouling using nanowire arrays" Louisiana Tech University, Ruston, LA, April 2006.
25. University of Oklahoma, School of Chemical and Materials Engineering, "Cell-based Biosensor Arrays" Norman, OK, March 2006.
26. American Chemical Society, Southeastern Pennsylvania Section, "Encapsulation of Drug Nanoparticles in Self-Assembled Macromolecular Nanoshells" Harrisburg, PA, January 2006.

27. Georgia Institute of Technology, Department of Chemical and Biomolecular Engineering “Minimization of biofouling using vibrating nanowire arrays” Atlanta, GA, November 2005.
28. BioThailand 2005, Plenary Lecture in Bionanotechnology “Encapsulation of Drug Nanoparticles in Self-Assembled Macromolecular Nanoshells” Bangkok, Thailand, November 2005.
29. American College of Surgeons, 91st Annual Clinical Congress “Micro- and nano-biosensors for metabolite monitoring” San Francisco, CA, October 2005.
30. Mid-Atlantic Regional Meeting, American Chemical Society “Encapsulation of Drug Nanoparticles in Self-Assembled Macromolecular Nanoshells” New Brunswick, NJ, May 2005.
31. Purdue University, Department of Biomedical Engineering “Minimization of biofouling using vibrating nanowire arrays” West Lafayette, IN, March 2005.
32. 32nd ACS Northeast Regional Meeting, Session: Surface modification for coating and dispersion technology III “Magnetoelastic nanowire arrays for the prevention of biofouling” Rochester, NY, November 2004.
33. Optics East 2004, Session: Smart medical and biomedical sensor technology IV “Cell-based bioassays in microfluidic systems” Philadelphia, PA, October 2004.
34. Gordon Research Conference: Bioanalytical Sensors “Glucose Sensors Based on Fluorescence” Queen’s College, Oxford, UK, July 2004.
35. Governor’s Bionanotechnology Initiative Distinguished Speaker, “Oxidoreductase/Redox Polymer Thin Films for Amperometric Sensing” Louisiana Tech University, Ruston, LA, January 2004.
36. 2nd Annual Conference on Biodefense and Homeland Security, “Detecting and Characterizing Biological Agents with Biosensors” Milton Hershey Medical Center, Hershey, PA, May 2003.
37. Nanotech and Biotech Convergence 2003 “Microfabricated Cell-Based Biosensors and Biosensor Arrays” Stamford, CT, May 2003.
38. Pennsylvania State University, College of Medicine, Department of Biochemistry and Molecular Biology “Microdevices for Biosensing” Hershey, PA, December 2002.
39. CIBA Vision “Hydrogel-based sensors for glucose” Duluth, GA, October 2002.
40. Louisiana Tech University, Institute for Micromanufacturing “Microfabricated Cell-Based Biosensors and Biosensor Arrays” Ruston, LA, October 2002.
41. Nanotech and Biotech Convergence 2002 “Microfabricated Cell-Based Biosensors and Biosensor Arrays” Stamford, CT, May 2002.
42. BioMEMS 2002 “Cells in Micropatterned Hydrogels: Applications in Biosensing” Cambridge, MA, April 2002.
43. Argose, Inc. “Strategies for Measuring Glucose in Interstitial Fluid” Waltham, MA, June 2001.
44. Gordon Research Conference, Illicit Substance Detection: Biowarfare Agents “Cell and Tissue Based Biosensing” Mount Holyoke College, South Hadley, MA, June 2001.
45. 199th National Meeting of the Electrochemical Society, Bioelectroanalytical Chemistry Symposium “Amperometric Biosensors Based on Nanostructured Redox Polymer Thin Films” Washington, D.C., March 2001.
46. University of Houston “Microscale and Nanoscale Hydrogels for Chemical Sensing” Department of Chemical Engineering, Houston, TX, February 2001.
47. University of Pittsburgh “Microscale and Nanoscale Hydrogels for Chemical Sensing” Department of Chemical Engineering, Pittsburgh, PA, January 2001.

48. Guilford Pharmaceuticals, Inc. "Solvent-Free Encapsulation of Protein-Based Drugs in Biodegradable Polymers" Baltimore, MD, October 2000.
49. University of Maryland – Baltimore County "Hydrogels for Chemical Sensing" Department of Biochemical Engineering, Baltimore, MD, October 2000.
50. Rice University "Hydrogels for Chemical Sensing" Departments of Bioengineering and Chemical Engineering, Houston, Texas, September 2000.
51. University of Southern California "Hydrogels for Chemical Sensing" Department of Chemical Engineering, Los Angeles, CA, September 2000.
52. Pennsylvania State University "Hydrogels for Chemical Sensing" Department of Chemical Engineering, State College, PA, September 2000.
53. University of Iowa "Hydrogels for Chemical Sensing" Center for Biocatalysis and Bioprocessing, Iowa City, Iowa, February 2000.
54. Abbott Laboratories, Inc. "Optical Glucose Sensors Based on Photopolymerized Poly(ethylene glycol) Hydrogels" Diagnostics Division, Abbott Park, IL, November 1999.
55. Abbott Laboratories, Inc. "Amperometric Biosensors Based on Photopolymerized Redox Hydrogels and Nanocomposite Thin Films" Diagnostics Division, Abbott Park, IL, November 1999.
56. Seventeenth Annual Houston Conference on Biomedical Engineering Research "Implantable and Minimally Invasive Systems for Glucose Sensing and Closed Loop Insulin Delivery" Houston, Texas, February 1999.
57. University of Texas at Austin "Hydrogels for Chemical Sensing" Department of Chemical Engineering, January 1999.
58. Dartmouth College "Redox Polymer/Oxidoreductase Complexes for Biosensor Applications" Bioengineering Program, Hanover, NH, December 1995.
59. Medisense Corporation "Biosensors Based on Redox Polymer/Oxidoreductase Complexes" Waltham, MA, September 1995.
60. University of Tokyo "Wired Enzyme Electrodes" Department of Chemistry, Tokyo, Japan, January 1992.
61. NASA Symposium Series: Life Support *In Situ* Sensors Technology Meeting "Electrical Wiring of Redox Enzymes" Jet Propulsion Laboratories, Pasadena, CA October 1991.

Oral and Poster Presentations

1. Pishko, M. V., "Training at the Interface of Bioprocess and Systems Engineering – The National Center for Therapeutics Manufacturing" Poster at RAFT-X, Marco Island, FL, Nov. 3-6, 2013.
2. Cummins, B.M., Garza, J.T., Lim, J., Simanek, E.E., Pishko, M.V., and Coté, G.L., "Tuning the equilibrium association constant to improve sensitivity of a competitive binding glucose sensor", Poster at the Biomedical Engineering Society Annual Meeting, Atlanta, GA, Oct. 23-27, 2012.
3. Cummins, B.M., Lim, J., Simanek, E.E., Pishko, M.V., and Coté, G.L., "Aggregation Profile for Concanavalin A/Glycosylated Dendrimer Glucose Sensing Chemistry", Poster at the Biomedical Engineering Society Annual Meeting, Hartford, CT, Oct. 12-15, **2011**.
4. Cummins, B.M., Lim, J.D., Simanek, E.E., Pishko, M.V., and Coté, G.L., "Understanding the mechanism and optimizing a competitive binding fluorescent glucose sensor", SPIE Photonics West BIOS, San Jose, CA, Jan. **2011**.

5. Cummins, B.M., Pishko, M.V., Simanek, E.E., and Coté, G.L., “Encapsulation of a Con-A/Glycodendrimer Glucose Sensing Assay using Microporated PEG Spheres”, Biomedical Engineering Society Annual Meeting, Austin, TX, Oct. 6-10, **2010**.
6. Cummins, B.M., Beier, H.T., Pishko, M.V., and Coté, G.L., “Optimization of a glycodendrimer-based glucose sensing assay”, Poster PS 8A-93, Biomedical Engineering Society Annual Meeting, Pittsburgh, PA, Oct. 7-10, **2009**.
7. Beier, H.T., Lim, J.D., Simanek, E.E., Pishko, M.V., and Coté, G.L., “Improvement of Dendrimer Stability in a Glucose-Sensitive Fluorescent Assay”, SPIE Photonics West BIOS, San Jose, CA, Jan. **2009**.
8. Beier, H.T., Ibey, B.L., Pishko, M., and Coté, G.L. “Use of glycosylated dendrimer macromolecules to fluorescently monitor glucose concentration”, SPIE BIOS, Conf. 6445, San Jose, CA, Jan. **2007**.
9. Rounds, R.M., Lee, S., Ibey, B.L., Pishko, M.V., and Coté, G.L., “Hydrogel microarrays for multi-analyte detection”, SPIE BIOS, Conf. 6445, San Jose, CA, Jan. **2007**.
10. Mugweru, A.; Clark, B.L.; Pishko, M. V. “Implantable Electrochemical Redundant Microsensor Arrays for glucose monitoring Patterned Polymer films” the Pittsburgh Conference, Orlando, FL, United States, March 12-17, **2006**
11. Clark, B.L. ; Mugweru, A. Pishko, M. V. “Electrochemical glucose sensor” 210th Electrochemical society Meeting, Cancun, Mexico Oct. 29-Nov. 3, **2006**
12. Zahr, A.; Pishko, M. “Encapsulation of drug nanoparticles in self-assembled macromolecular nanoshells” Oral presentation, American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2006.
13. Kim, S.-H.; Pishko, M. “Development of optical nanobiosensor for cellular migration analysis” Poster presentation, 232nd ACS National Meeting, Session, San Francisco, CA, September 2006.
14. Ibey, B.L., Beier (Thomas), H.R., Rounds, R.M., Pishko, M.V., and Coté, G.L., “Glucose sensitive fluorescent quenching based assay”, 5th Annual Diabetes Technology Meeting, San Francisco, CA, Nov. 10-12, 2005.
15. Rounds, R.M., Ibey, B.L., Thomas, H.R., Pishko, M.V., and Coté, G.L., “Microporated PEG Spheres For Fluorescent Analyte Detection”, Biomedical Engineering Society Annual Fall Meeting, Baltimore, M.D., Sept. 28-Oct. 1, 2005.
16. Thomas, H.R., Ibey, B.L., Rounds, R.M., Pishko, M.V., and Coté, G.L., “Development Of A Chemical Assay For Detection Of Glucose Concentration”, Biomedical Engineering Society Annual Fall Meeting, Baltimore, M.D., Sept. 28-Oct. 1, 2005.
17. Pishko, M. “Microfabricated cell-based biosensor arrays” Oral presentation, IEEE-EMBC 2005, Shanghai, China, August 2005.
18. Ainslie, K.; Sharma, G.; Dyer, M.; Grimes, C.; Pishko, M. “Attenuation of protein adsorption on static and vibrating magnetic nanowires” Oral Presentation, 2005 Materials Research Society Spring Meeting, San Francisco, CA, April 2005.
19. Dyer, M.; Ainslie, K.; Sharma, G.; Grimes, C.; Pishko, M. “Protein adhesion to bare and polymer-coated nanostructures” Oral Presentation, 2005 Materials Research Society Spring Meeting, San Francisco, CA, April 2005.
20. Zguris, J.; Cote, G.; Pishko, M. “Microfabricated optical biosensor arrays for in situ bioreactor monitoring” Oral presentation, NASA Cell Science Conference, Galveston, TX, February 2005.

21. Ainslie, K.; Pishko, M. “Vibrating nanostructures for the prevention of biofouling” Oral presentation, American Institute of Chemical Engineers Annual Meeting, Austin, TX, November 2004.
22. Zahr, A.; Pishko, M. “Layer-by-layer assembly for the drug delivery of chemotherapeutics” Oral presentation, American Institute of Chemical Engineers Annual Meeting, Austin, TX, November 2004.
23. Stine, R.; Schengrund, C.; Pishko, M. “Heat stabilized ganglioside films for biotoxin sensing” Oral presentation, American Institute of Chemical Engineers Annual Meeting, Austin, TX, November 2004.
24. Itle, L.; Zguris, J.; Pishko, M. “Cell-based biosensors utilizing poly(ethylene glycol) hydrogel microstructures” Oral presentation, American Institute of Chemical Engineers Annual Meeting, Austin, TX, November 2004.
25. Zguris, J.; Pishko, M. “Microfabricated optical biosensors for in situ bioreactor monitoring” Oral presentation, American Institute of Chemical Engineers Annual Meeting, Austin, TX, November 2004.
26. Ibey, B.; Yadavalli, V.; Thomas, H.; Schengrund, C.; Pishko, M.; Cote’, G. “Development of an implantable blood glucose monitor using a competitive binding fluorescent assay in poly(ethylene glycol) microspheres” Poster presentation, Fourth Annual Diabetes Technology Meeting, Philadelphia, PA, October 2004.
27. Lee, S.; Newnham, R.; Pishko, M.; Smith, N. “Noninvasive ultrasound glucose monitoring and insulin delivery using the low-profile cymbal array” Oral and poster presentations, Fourth Annual Diabetes Technology Meeting, Philadelphia, PA, October 2004.
28. Itle, L.; Koh, W.; Pishko, M. “Multi-phenotypic cell based biosensors” Poster presentation, American Chemical Society National Meeting, Philadelphia, PA, Aug. 2004.
29. Zguris, J.; Pishko, M. “Microfabricated optical biosensors for in situ bioreactor monitoring” Poster presentation, American Chemical Society National Meeting, Philadelphia, PA, Aug. 2004.
30. Dyer, M.; Ainslie, K.; Sharma, G.; Grimes, C.; Pishko, M. “Protein adsorption on nanostructures” Poster presentation, American Chemical Society National Meeting, Philadelphia, PA, Aug. 2004.
31. Zahr, A.; Pishko, M. “Nanoencapsulation for drug delivery of chemotherapeutics” Poster presentation, American Chemical Society National Meeting, Philadelphia, PA, Aug. 2004.
32. Stine, R.; Schengrund, C.; Pishko, M. “Nanometer scale ganglioside thin films for biotoxin sensing” Poster presentation, American Chemical Society National Meeting, Philadelphia, PA, Aug. 2004.
33. Kim, S.; Kim, B.; Pishko, M. “Encapsulation of enzymes within polymer spheres to create novel optical micro- and nanosensors” Poster presentation, American Chemical Society National Meeting, Philadelphia, PA, Aug. 2004.
34. Stine, R.; Schengrund, C.; Pishko, M. “Stable, Nanoscale Glycosphingolipid Films for Use in Sensing Applications” Oral Presentation, 2004 Annual Meeting of the Institute for Biological Engineering, Fayetteville, AR, Jan. 2004.
35. Yadavalli, V.; Pishko, M. “Sensing in Microfluidic Devices Using Fluorescence Polarization” Oral presentation, 2003 Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA, November 2003.
36. Koh, W.-G.; Itle, L.; Pishko, M. “Photoreaction Injection Molding of Biomaterial Microstructures and Its Application to Create Multi-phenotype Cell Microarrays” Oral

- presentation, 2003 Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA, November 2003.
37. Itle, L.; Koh, W.-G.; Pishko, M. "Protein Production in Cell Containing Hydrogel Matrices for High Throughput Drug Screening" Oral presentation, 2003 Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA, November 2003.
 38. Meiring, J.; Schmid, M.; Grayson, S.; Rathsack, B.; Johnson, D.; Kirby, R.; Kannappan, R.; Manthiram, K.; Stotts, J.; Hogan, Z.; Russell, R.; Pishko, M.; Ellington, A.; Willson, C. "Hydrogel biosensor arrays indexed through shape recognition" ACS Summer Meeting, 2003.
 39. Ibey, B.L.; Coté, G. L.; Yadavalli, V.; Gant, V. A.; Newmyer, K.; Pishko, M. V. "Analysis of Longer Wavelength AlexaFluor Dyes for Use in a Minimally Invasive Glucose Sensor" in IEEE EMBS Meeting. 2003. Cancun, Mexico.
 40. Yadavalli, V.; Pishko, M. "Biosensing using fluorescence polarization in microfluidic channels" Oral Presentation, 2003 Materials Research Society Spring Meeting, San Francisco, CA, April 2003.
 41. Pishko, M.; Koh, W.; Yadavalli, V.; Zguris, J.; Itle, L. "Chemical Microsensor Arrays Using Biorecognition Molecules and Cells in Micropatterned Hydrogels" Oral Presentation, 2003 NASA Bioastronautics Investigators' Workshop, Galveston, TX, January 2003.
 42. Coté, G.L. and Pishko, M.V., "Progress toward an implantable fluorescence glucose sensor", Pittsburgh Conference, Orlando, FL, March 10-13, 2003.
 43. Coté, G.L., and Pishko, M.V., "Subcutaneous fluorescence glucose sensing using a competitive binding assay", 224th National ACS Meeting, Boston, MA, August 18th, 2002.
 44. Koh, W.-G.; Yadavalli, V.; Pishko, M. "Fabrication of immobilized enzyme microreactors in microfluidic devices" Oral presentation, 2002 Annual Meeting of the American Institute of Chemical Engineers, Indianapolis, IN, November 2002.
 45. Koh, W.-G.; Pishko, M. "Chemical and biological sensors based on living cells in PEG microstructures" Oral presentation, 2002 Annual Meeting of the American Institute of Chemical Engineers, Indianapolis, IN, November 2002.
 46. Yadavalli, V.; Koh, W.-G.; Pishko, M. "Microfabricated protein-containing poly(ethylene glycol) hydrogel arrays for biosensing" Oral presentation, 2002 Annual Meeting of the American Institute of Chemical Engineers, Indianapolis, IN, November 2002.
 47. Cote', G.; Pishko, M. "A potentially implantable fluorescent glucose sensor based on molecular recognition in poly(ethylene glycol) hydrogels" Poster presentation, Second Annual Meeting of the Diabetes Technology Society, Atlanta, GA, October 2002.
 48. Koh, W.-G.; Pishko, M. "Chemical Sensor Arrays Using Biorecognition Molecules and Cells in Micropatterned Hydrogels" Oral presentation, 32nd International Conference on Environmental Systems, San Antonio, Texas, July 2002.
 49. Koh, W.-G.; Pishko, M. "Microfabricated Cell-Based Biosensors and Biosensor Arrays" Poster Presentation, Sensors for Biological Research and Medicine, National Institutes of Health, Bethesda, Maryland, June 2002.
 50. Revzin, A.; Simonian, A.; Pishko, M. "Amperometric Biosensors Based on Nanostructured Redox Polymer Thin Films" Oral presentation, 201st National Meeting of the Electrochemical Society, Philadelphia, PA, May 2002.
 51. Koh, W.-G., Pishko, M. "Cells in Micropatterned Hydrogels: Applications in Biosensing" Oral presentation, Materials Research Society Spring Meeting, San Francisco, CA, April 2002.

52. Meledeo, A., O'Neal, D.P., Davis, J., Pishko, M., and Coté, G.L., "Development of a fluorescence-based polymer sensing system for glucose monitoring", Presentation at the 19th Annual Houston Conference on Biomedical Engineering Research, University of Houston, Houston TX: February 8-9, 2001.
53. Koh, W.-G.; Revzin, A.; Pishko, M. "Mammalian Cells Encapsulated in Poly(ethylene glycol) Hydrogel Microstructures for Use as Biosensors" Oral presentation, Annual Meeting of the American Institute of Chemical Engineers, Reno, Nevada, November 2001.
54. Revzin, A.; Simonian, A.; Pishko, M. "Amperometric Biosensors for Glucose, Lactate, and Pyruvate Based on Nanocomposite Redox Polymer/Oxidoreductase Thin Films" Oral presentation, Annual Meeting of the American Institute of Chemical Engineers, Reno, Nevada, November 2001.
55. Revzin, A.; Simonian, A.; Sirkar, K.; Pishko, M. "Redundant Amperometric Biosensors Based on Redox Polymer/Oxidoreductase Nanocomposite Thin Films Deposited on Photolithographically Patterned Gold Electrodes" Oral presentation, Nineteenth Annual Houston Conference on Biomedical Engineering Research, Houston, Texas, February 2001.
56. Koh, W.; Revzin, A.; Pishko, M. "Fabrication of Poly(ethylene glycol) Hydrogel Microstructures Encapsulating Living Cells" Oral presentation, Nineteenth Annual Houston Conference on Biomedical Engineering Research, Houston, Texas, February 2001.
57. Pishko, M. "Microfabricated Optical Biosensor Arrays for Air Quality Monitoring" Poster Presentation, Bioastronautics Investigators Workshop, 17-19 January 2001, Galveston, Texas.
58. Hile, D.; Pishko, M. "Emulsion Polymerization of Biodegradable Polymers in Supercritical Carbon Dioxide" Oral Presentation, American Institute of Chemical Engineers 2000 Fall Meeting, Los Angeles, CA.
59. Russell, R.; Yadavalli, V.; Cote, G.; Pishko, M. "A Potentially Implantable Fluorescent Glucose Sensor Based on Molecular Recognition in Poly(ethylene glycol) Hydrogels" Oral Presentation, American Institute of Chemical Engineers 2000 Fall Meeting, Los Angeles, CA.
60. Coté, G.L., Russell, R., O'Neal, D.P., and Pishko, M.V., "Glucose sensing using dermally implantable fluorescent polymer spheres", Noninvasive Blood Analytes, for Advanced Technology Applications to Combat Casualty Care (ATACCC 2000) Meeting, Jointly sponsored by the US Army and Navy Combat Casualty Care Research Programs, Ft. Walton Beach, FL and Eglin AFB: September 25-29, 2000. (Invited)
61. Sirkar, K.; Revzin, A.; Pishko, M. "Fabrication of Biosensor Arrays Using Electrostatically Complexed Multilayers Deposited on Patterned Electrodes" Oral Presentation, American Institute of Chemical Engineers 2000 Fall Meeting, Los Angeles, CA.
62. Revzin, A.; Russell, R.; Koh, W.-G.; Pishko, M. "Microfabricated Poly(ethylene glycol) Arrays for Chemical Sensing" Oral Presentation, American Institute of Chemical Engineers 2000 Fall Meeting, Los Angeles, CA.
63. Axel, A.; Russell, R.; Pishko, M. "Polymer Hydrogel Swelling" Poster Presentation, American Institute of Chemical Engineers 2000 Fall Meeting, Los Angeles, CA.
64. Padera, R.; Pishko, M.; Langer, R. "Biomaterials-Induced Vascularization, Vascular Permeability Factor and Mass Transport" Oral Presentation, 2000 Annual Fall Meeting of the Biomedical Engineering Society, Seattle, WA, October 2000.
65. Mellott, M.; Revzin, A.; Hile, D.; Pishko, M. "Release of Proteins from Photopolymerized Poly(Ethylene Glycol) Hydrogels" Poster Presentation, International Symposium on the Controlled Release of Bioactive Materials, Paris, France, July 2000.

66. O'Neal, D.; Russell, R.; Rastegar, S.; Pishko, M.; Cote, G. "Analysis of Fluorescence Light Propagation Through Skin for Biosensing" Poster Presentation, World Congress on Medical Physics and Biomedical Engineering, Chicago, IL, July 2000.
67. Russell, R.; Cote, G.; Pishko, M. "Optical Glucose Sensors Based on Photopolymerized Poly(ethylene glycol) Hydrogels" Oral Presentation, World Congress on Medical Physics and Biomedical Engineering, Chicago, IL, July 2000.
68. Amirpour, M.; Ghosh, P.; Lackowski, W.; Crooks, R.; Pishko, M. "Growth of Mammalian Cells on Micropatterned, Hyperbranched Polymer Thin Films" Poster Presentation, Nanoscience and Nanotechnology: Shaping Biomedical Research, National Institutes of Health, Bethesda, Maryland, June 2000.
69. Simonian, A.; Flounders, A.; Schoeniger, J.; Rainina, E.; Pishko, M.; Wild, J. "Enzyme Biosensors for Direct Detection of Organophosphates" Oral Presentation, The Sixth World Congress on Biosensors, San Diego, CA, May 2000.
70. Sirkar, K.; Revzin, A.; Cantrell, J.; Pishko, M. "Fabrication of Biosensor Arrays using Photolithography and Micro-contact Printing" Oral Presentation, The 197th Meeting of the Electrochemical Society, Toronto, Canada, May 2000.
71. Revzin, A.; Mellott, M.; Hile, D.; Pishko, M. "Controlled Released of Growth Factors from Micropatterned Hydrogels" Oral Presentation, Sixth World Biomaterials Congress 2000, Kamuela, Hawaii, May 2000.
72. Russell, R.; Pishko, M.; McShane, M.; Cote, G.; Rastegar, S. "Monte Carlo Simulations of Photon Propagation in Poly(ethylene glycol) Hydrogel Based Fluorescent Biosensors" Poster Presentation, American Chemical Society National Meeting, San Francisco, CA, March 2000.
73. Russell, R.; Pishko, M.; Simonian, A.; Wild, J. "Poly(ethylene glycol) Hydrogel Encapsulated Fluorophore Enzyme Conjugates for Direct Detection of Organophosphorus Neurotoxins" Poster Presentation, American Chemical Society National Meeting, San Francisco, CA, March 2000.
74. Crooks, R.; Ghosh, P.; Lackowski, W.; Amirpour, M.; Pishko, M. "Simple Approach for Preparing Patterned, Micron-scale Corrals for Controlling Cell Growth" Oral Presentation, American Chemical Society National Meeting, San Francisco, CA, March 2000.
75. Revzin, A.; Sirkar, K.; Pishko, M. "Nanocomposite Amperometric Biosensors for Glucose and Lactate Detection" Oral Presentation, Eighteenth Annual Houston Conference on Biomedical Engineering Research, Houston, Texas, February 2000.
76. Mellott, M.; Revzin, A.; Hile, D.; Pishko, M. "Controlled Release of Proteins from Highly Crosslinked Hydrogels Photopolymerized from Poly(ethylene glycol)" Oral Presentation, Eighteenth Annual Houston Conference on Biomedical Engineering Research, Houston, Texas, February 2000.
77. Cantrell, J.; McArthur, M.; Pishko, M. "Transdermal Extraction of Interstitial Fluid Using Low Frequency Ultrasound" Oral Presentation, Eighteenth Annual Houston Conference on Biomedical Engineering Research, Houston, Texas, February 2000.
78. Pishko, M.; Hile, D.; Akgerman, A. "Delivery of Growth Factors from Microporous PLGA Foams Prepared in Supercritical Carbon Dioxide" Oral/Poster Presentation, The 5th US-Japan Symposium on Drug Delivery Systems, December 1999, Maui, Hawaii.
79. Pishko, M.; Cantrell, J.; McArthur, M. "Transdermal Extraction of Interstitial Fluid Using Low Frequency Ultrasound" Poster Presentation, The 5th US-Japan Symposium on Drug Delivery Systems, December 1999, Maui, Hawaii.

80. Mellott, M.; Pishko, M. "Highly Crosslinked Polyethylene Glycol Hydrogels: Swelling, Hydration and Release Characteristics" Oral Presentation, American Institute of Chemical Engineers 1999 Fall Meeting, Dallas, TX.
81. Hile, D.; Pishko, M. "Synthesis of Biodegradable Copolymers of Lactide and Glycolide in Supercritical Carbon Dioxide" Oral Presentation, American Institute of Chemical Engineers 1999 Fall Meeting, Dallas, TX.
82. Hile, D.; Amirpour, M.; Akgerman, A.; Pishko, M. "Delivery of Active Basic Fibroblast Growth Factor from Microporous Poly(D,L-lactide-co-glycolide) Foams Prepared in Supercritical Carbon Dioxide" Oral Presentation, American Institute of Chemical Engineers 1999 Fall Meeting, Dallas, TX.
83. Amirpour, M.; Crooks, R.; Ghosh, P.; Lackowski, W.; Pishko, M. "Growth and Dosing of Cells on Micropatterned Surfaces" Oral Presentation, American Institute of Chemical Engineers 1999 Fall Meeting, Dallas, TX.
84. Amirpour, M.; Crooks, R.; Ghosh, P.; Lackowski, W.; Pishko, M. "A Simple Lithographic Approach for Preparing Patterned, Micron-Scale Corrals for Controlling Cell Growth: Applications to Biosensing" Oral Presentation, Materials Research Society Fall Meeting, Boston, MA, December 1999.
85. Crooks, R.; Ghosh, P.; Lackowski, W.; Amirpour, M.; Pishko, M. "A Simple Lithographic Approach for Preparing Patterned, Micron-Scale Corrals for Biosensing" Oral Presentation, The Electrochemical Society Annual Meeting, Honolulu, HI, October 1999.
86. Ghosh, P.; Lackowski, W.; Amirpour, M.; Pishko, M.; Crooks, R. "Controlling Cell Growth on Plastic and Metal Surfaces Using Micro-contact Printing" Oral Presentation, American Chemical Society National Meeting, New Orleans, LA, August 1999.
87. Lackowski, W.; Ghosh, P.; Amirpour, M.; Pishko, M.; Crooks, R. "Spatially-Directed Cellular Adhesion on Micron-Scale Patterned Hyperbranched Poly(ethylene glycol)/Poly(acrylic acid) Films" Oral Presentation, American Chemical Society National Meeting, New Orleans, LA, August 1999.
88. Ghosh, P.; Amirpour, M.; Lackowski, W.; Pishko, M.; Crooks, R. "A Simple Lithographic Approach for Preparing Patterned, Micron-Scale Corrals for Controlling Cell Growth" Oral Presentation, American Chemical Society National Meeting, Anaheim, CA, March 1999.
89. Russell, R.; Gefrides, C.; Coté, G.; Pishko, M. "A Fluorescence-Based Glucose Biosensor Based on TRITC-Concanavalin A and FITC-Dextran Encapsulated in a Poly(ethylene glycol) Hydrogel" Seventeenth Annual Houston Conference on Biomedical Engineering Research, Houston, Texas, February 1999.
90. Amirpour, M.; Ghosh, P.; Lackowski, W.; Crooks, R.; Pishko, M. "Controlled Growth of Cells on Micropatterned Surfaces" Seventeenth Annual Houston Conference on Biomedical Engineering Research, Houston, Texas, February 1999.
91. Hile, D.; Amirpour, M.; Akgerman, A.; Pishko, M. "Controlled Delivery of Active Basic Fibroblast Growth Factor from Microporous Poly(D,L-lactide-co-glycolide) Foams Prepared in Supercritical Carbon Dioxide" Seventeenth Annual Houston Conference on Biomedical Engineering Research, Houston, Texas, February 1999.
92. Peez, R., Dermody, D., Franchina, J., Jones, S., Bruening, M., Lackowski, W., Bergbreiter, D., Crooks, R., Sirkar, K., and Pishko, M. "Aqueous Solvation and Functionalization of Hyperbranched Polyelectrolyte Thin Films" Oral Presentation, Fall Meeting of the Materials Research Society, Boston, MA, December 1998.
93. Russell, R.; Pishko, M.; Gefrides, C.; Cote, G. "A Fluorescent Glucose Assay using Poly-L-Lysine and Calcium Alginate Microencapsulated TRITC-Succinyl-Concanavalin A and

- FTIC-Dextran" Oral Presentation, 20th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Hong Kong, Oct 29 - Nov 1, 1998.
94. Sirkar, K. and Pishko, M. "Biosensors Based on Photopolymerized Poly(ethylene glycol) Hydrogels" Oral Presentation, 1998 Annual Meeting of the American Institute of Chemical Engineers, Miami, FL, November, 1998.
 95. Mellott, M., and Pishko, M. "Controlled Release of Proteins from Highly Crosslinked PEG Microspheres" 1998 Annual Fall Meeting of the Biomedical Engineering Society, Cleveland, OH, October 1998.
 96. Sirkar, K. and Pishko, M. "Thin Film Amperometric Biosensors formed by Photopolymerization of PEG Copolymers" 1998 Annual Fall Meeting of the Biomedical Engineering Society, Cleveland, OH, October 1998.
 97. Sirkar, K. and Pishko, M. "Photopolymerized Redox Hydrogel Biosensors" Oral Presentation, 25th International Symposium on Controlled Release of Bioactive Materials, Las Vegas, NV, June 1998.
 98. Mellott, M., Searcy, K. and Pishko, M. "Transport Properties of PEG Gels" Poster Presentation, 25th International Symposium on Controlled Release of Bioactive Materials, Las Vegas, NV, June 1998.
 99. Mitragotri, S., Pishko, M., Kost, J., and Langer, R. "Ultrasound Mediated Transcutaneous Glucose Monitoring" Oral Presentation, Hot Topics in Neonatology, Washington, D.C., December 1997.
 100. Sirkar, K. and Pishko, M., "Photopolymerized Redox Copolymers for Lithographically Patterned Amperometric Biosensors" Poster Presentation, 5th North American Chemical Congress, Cancun, Mexico, November 1997.
 101. Knorr, D. and Pishko, M., "Electroenzymatic Fuel Cells" Oral Presentation, Electrochemical Society: South Texas Section Annual Fall Meeting, Round Top, TX, October 1997.
 102. Sirkar, K. and Pishko, M., "Photopolymerized Redox Copolymers for Patterned Amperometric Biosensors" Oral Presentation, Biomedical Engineering Society Annual Fall Meeting, San Diego, CA, October 1997.
 103. Sirkar, K. and Pishko, M., "Photopolymerizable Amperometric Wired Enzyme Electrodes" Poster Presentation, Gordon Conferences: Bioanalytical Sensors, Henniker, NH, July 1997.
 104. Pishko, M., Cook, J., Heller, E., Schwitzgebel, J., Gunawan, G., Ekerdt, J., and Heller, A., "Reduction of the Toxicity of Crude Oil on Water Through Sunlight Assisted Photocatalytic Oxidation on TiO₂ Coated Glass Microbubbles" Oral Presentation, American Chemical Society National Meeting, San Diego, CA, March 1994.
 105. Heller, A., Gregg, B., Pishko, M., "Amperometric Sensors Based on Electrically Wired Enzymes" Oral Presentation, American Chemical Society National Meeting, Washington, DC, April 1991.
 106. Pishko, M., Michael, A., Heller, A. "Glucose Microelectrodes Based on the Immobilization of Glucose Oxidase in 3-Dimensional Crosslinked Redox Polymer Networks" Oral Presentation, 3rd International Conference on Chemical Sensors; Cleveland, OH 1990.

External Research Support/Grants

1. Texas Workforce Commission 13-11775: Summer Merit Program 3/1/13 – 10/1/13, \$47,868.00, Director.

2. Texas Workforce Commission 11-0486: Texas Therapeutics Manufacturing Workforce Development Initiative 12/15/10 – 4/15/12, \$587,500.00, Director.
3. Biomedical Advanced Research and Development Authority, Center for Innovation in Advanced Development and Manufacturing 6/15/12-12/31/17, \$17,314,000; Center Associate PI for Workforce Development Initiatives.
4. Texas Workforce Commission 11-0486: Texas Therapeutics Manufacturing Workforce Development Initiative 12/15/10 – 4/15/12, \$587,500.00, Director.
5. DARPA (subcontract through Profusa, Inc.): "Advanced biomaterials as implantable chemical sensors" 04/15/11 – 10/15/11, Total Award: \$750,000 (\$80,082 - TAMU portion), co-PI.
6. NIH 1R21EB006093-01A1: "Cell and protein adhesion on novel PTFE nanostructures" 2/1/07-1/31/09, \$275,000 direct, co-PI.
7. USAMRMC W81XWH-05-1-0495: "Simultaneous Remote Query Measurement of Subcutaneous Glucose, Lactate, and Pyruvate Concentrations" 9/1/05-8/31/08, \$299,946, co-PI.
8. USAMRMC W81XWH-04-1-0780: "Microfabricated multianalyte sensor arrays for metabolite monitoring" 8/15/04-8/14/07, \$281,003, PI.
9. NSF BES-0426170: "SST: Ricin quantification in aqueous media" 8/1/04-7/31/07, \$300,000, co-PI.
10. USARO STTR Phase II (sub contract from Lynntech, Inc.): "Bioelectrochemical fuel cells" 9/22/04-9/21/06, \$225,000, PI.
11. NASA BIOTECH-01-0023-0131: "Microfabricated Optical Biosensor Arrays for In Situ Bioreactor Monitoring" 12/1/03-11/30/06, \$424,000, PI.
12. CIBA Vision, Inc.: "Sensors for Glucose Based on Fluorescence" 12/1/02 to 11/30/03, \$78,082, PI.
13. National Institutes of Health 5R01EB000684-02: "Vibrating Nanostructures for the Prevention of Biofouling on Implanted Devices" 10/1/02 to 9/30/05, \$929,775, PI.
14. National Science Foundation, BES-0210298 "NIRT: Nanoengineered shells for encapsulation and controlled release" 9/1/2002-8/31/2006, \$210,000, co-PI.
15. National Medical Technology Testbed, Inc.- USAMMC: "Electrochemical Microsensor Arrays" 10/1/00-9/30/2001, \$142,283, Principal Investigator.
16. NASA NAG 9-1372: "Microfabricated Optical Biosensor Arrays for Air Quality Monitoring" 10/1/00 – 9/30/04, \$289,461, Principal Investigator.
17. Juvenile Diabetes Foundation International – subcontract from the University of Maryland, Baltimore County: "Implantable Glucose Sensors Based on a Fluorescence Lifetime Competitive Binding System" 10/1/00 - 9/31/01, \$50,180, co-Investigator.
18. Sontra Medical, Inc.: "Development of Patch-Type Glucose Sensor" 6/1/00 – 5/30/01, \$81,091, Principal Investigator.
19. National Science Foundation, ECS-991290: "Acquisition of a Multi-Purpose, Multi-User Mask Aligner" \$78,390, co-PI.
20. Henley Healthcare, Inc.: "Gels for the Delivery of Drugs" 2/1/00 – 1/31/01, \$47,800, Principal Investigator.
21. Texas Higher Education Coordinating Board, Advanced Research Program: "Implantable Microparticles for Intracellular and Extracellular Glucose Sensing" 1/1/2000 - 12/31/2001, \$171,746, Principal Investigator.

22. Texas Higher Education Coordinating Board, Advanced Technology Program: "Rapid Screening of Libraries of Genetically Engineered Cells Using Micropatterned Biomaterials" 1/1/2000 - 12/31/2001, \$68,753, Principal Investigator.
23. National Science Foundation, BES-9908439: "Development of an Implantable Optical Glucose Sensor" 9/1/99-8/31/2003, \$372,045, co-PI.
24. National Medical Technology Testbed, Inc.- USAMMC: "Electrochemical Microsensor Arrays" 4/1/99-3/31/2000, \$60,000, Principal Investigator.
25. Alfred P. Sloan Research Fellowship: 1999-2001, \$35,000, Principal Investigator.
26. National Science Foundation CAREER Award, CTS-9875372, 0196525: "Microfabrication of Highly Ordered Biosensor Arrays" 5/1/99-4/30/2004, \$225,000, Principal Investigator.
27. NASA: "Investigation of Neuronal Physiology in Simulated Microgravity using Smart Fluorescent Microcarriers and Bulk Near-infrared Sensors" 3/1/99 - 12/31/2003, \$572,126, co-PI.
28. Whitaker Foundation: "Optical Spectroscopy for Body Chemical Measurements" 12/1/98-11/31/99, \$70,000, co-investigator.
29. Whitaker Foundation: "Microfabrication of Implantable Biosensor Arrays" 9/1/98 - 8/31/2001, \$187,618, Principal Investigator.
30. Juvenile Diabetes Foundation International: "Noninvasive Glucose Sensing Using Reverse Sonophoresis in Combination with a Glucose Sensor Array" 8/1/98 - 7/31/2000, \$144,820, Principal Investigator.
31. Texas Higher Education Coordinating Board, Advanced Research Program: "Influence of Topography on Neovascularization of Biomaterials for Tissue Engineering" 1/1/98 - 8/31/2000, \$118,380, Principal Investigator.
32. NSF SBIR, DMI-9362052: "Remediation of Organic Pollution via Catalyzed Photooxidation of Pollutants in Air and on Surfaces" 3/1/94 - 12/31/97, \$64,352, Principal Investigator.

Professional Activities

- International Scientific Committee, Nanomaterials: Applications & Properties 2013, Alushta, Ukraine, September 2013.
- Session Chair, Cell-based Biosensors, IUMACRO 07, Brooklyn, New York, NY, June 2007.
- Track Chair, Biosensors & Bioinstrumentation, IEEE-EMBC 2005, Shanghai, China, August 2005.
- Session Chair, Biosensors I, IEEE-EMBC 2005, Shanghai, China, August 2005.
- Session Chair, Electrochemistry and Nanobiotechnology, Nanotechnology-Biotechnology Convergence 2003, Stamford, CT, May 2003
- Session Chair, Advances in Tissue Engineering, 2002 Annual Meeting of the American Institute of Chemical Engineers, Indianapolis, IN, November 2002.
- Session Chair, Biosensors, IEEE-EMBS 2002 Annual Meeting, Houston, TX, October 2002.
- Session Chair, Biosensors, Nanotechnology-Biotechnology Convergence 2002, Stamford, CT, May 2002
- Session Chair, Nanostructured Biomaterials, the Annual Meeting of the American Institute of Chemical Engineers, Reno, Nevada, November 2001.
- Session Chair, Biosensors, Nineteenth Annual Houston Conference on Biomedical Engineering Research, Houston, Texas, February 2001.
- Session Chair, Optical Glucose Sensing, World Congress on Medical Physics and Biomedical Engineering, Chicago, IL, July 2000.

Session Chair, Biochemical and Optical Sensors and Biosensors I, World Congress on Medical Physics and Biomedical Engineering, Chicago, IL, July 2000.
Session Chair, Biomaterials I, Eighteenth Annual Houston Conference on Biomedical Engineering Research, Houston, Texas, February 2000.
Chair, South Texas Section of the Electrochemical Society (6/00 – 7/01)
Vice-Chair, South Texas Section of the Electrochemical Society (7/99 – 6/00)
Secretary, South Texas Section of the Electrochemical Society (7/98 - 6/99)
Treasurer, South Texas Section of the Electrochemical Society (6/97 - 7/98)
Memberships: American Chemical Society, American Institute of Chemical Engineers, Materials Research Society, Biomedical Engineering Society

External Panels and Committees

NIH SBIR Panel, July 2011
NIH Biomaterials and Biointerfaces Study Section, June 2008
NSF Bioengineering, November 2007
NIH/NCI Nanotechnology Panel, May 2006
NIH Chemistry/Biophysics NRSA Fellowship Panel, Chairperson, November 2005
NIH/NCI Nanotechnology Panel, July 2005
NIH SBIR Panel, July 2005
NIH Chemistry/Biophysics NRSA Fellowship Panel, Chairperson, March 2005
NIH Chemistry/Biophysics NRSA Fellowship Panel, November 2004
NIH Chemistry/Biophysics NRSA Fellowship Panel, July 2004
NIH Surgery & Bioengineering Study Section, Ad hoc, February 2004
NIH Chemistry/Biophysics NRSA Fellowship Panel, November 2003
NIH Advanced Biomaterials Panel, August 2003.
Chair, AIBS-USAMRMC Technologies for Metabolic Monitoring Panel, July 2003.
NSF Sensors Panel, May 2003
NIH Chemistry/Biophysics NRSA Fellowship Panel, March 2003
NIH Chemistry/Biophysics NRSA Fellowship Panel, November 2002
NSF Bioengineering Review Panel, May 2001
NSF Sensing and Imaging Review Panel, December 2000
NSF SBIR Ultracapacitors Review Panel, August 2000
Juvenile Diabetes Foundation International Glucose Monitoring Review Panel, May 2000
Juvenile Diabetes Foundation International Medical Sciences Review Committee 1999-2002
Chair- Juvenile Diabetes Foundation International Glucose Monitoring Review Panel, Nov. 1999
NSF Biosystems on the Nanoscale Review Panel, November 1999
Juvenile Diabetes Foundation International Glucose Monitoring Review Panel, June 1999
NSF Science and Technology Center Site Review Committee, January 1999

Reviewer of Journals

Analytical Chemistry
Angewandte Chemie
Biomacromolecules
Biomaterials
Biotechnology Progress
Diabetes Technology and Therapeutics
Electroanalysis

Journal of the American Chemical Society
Journal of Pharmaceutical Sciences
Journal of Physical Chemistry
Langmuir
Nature Biotechnology
Nature Materials
Proceedings of the National Academy of Sciences USA

Courses Taught

1. Drug Delivery
2. Biomedical Engineering for the Developing World
3. Design for the Developing World
4. Entrepreneurship
5. Quality by Design
6. Bioreactor Design
7. Heat Transfer
8. Chemical Engineering Mass Transfer Operations
9. Chemical Engineering Thermodynamics II (Phase and reaction equilibria)
10. Materials Science in Medicine and Biology
11. Polymer Engineering and Synthesis
12. Biosensors
13. Nanotechnology-Biotechnology Convergence 2003 & 2004 Workshops (topics: cell-based bioassays, microfluidics, aptamers, piezoelectric sensors)

Students Graduated and Researchers Supervised

Masters of Science

1. Jing Zhou, M.S. "Thermo-responsive layer-by-layer assemblies for nanoparticle-based drug delivery" December 2013.
2. Cheryl Davis (Rumbarger), M.S. "Development of polymeric nanoshells to encapsulate the hydrophilic chemotherapeutic drug, 5-fluorouracil, using a layer-by-layer assembly method" August 2005, Department of Homeland Security, Washington, D.C.
3. Martin Gentile, M.S. "Escherichia coli adhesion to chemically modified poly(ethylene glycol) hydrogels" December 2004, presently at Pfizer, Inc.
4. Keith Newmyer, M.S. "The continued developed of an optical glucose sensor based on a FRET binding assay encapsulated within a poly(ethylene glycol) hydrogel" August 2004, presently at Bechtel-Bettis, Inc.
5. Rory Stine, M.S. "Utilizing thin polymer films to obtain highly specific protein adhesion on surfaces" June 2003, presently at Naval Research Laboratory, Washington, D.C.
6. Amy Urbanowicz, M.S. "The Development of a Rod-Coil Redox Polymer Composed of Biphenyl Esters and Poly(4-vinylpyridine)" June 2001, presently a high school teacher in Toledo, OH.
7. Jeffrey T. Cantrell, M.S. "The Determination of Glucose in Sonophoretically Extracted Interstitial Fluid and the Characterization of Ultrasound Parameters" July 2000, presently at Intel, Inc., Albuquerque, NM.
8. Kaushik Sirkar, M.S. "Amperometric Glucose Sensors Based on Photopolymerized Redox Hydrogels" December 1998, presently at Intel, Inc., Albuquerque, NM.

Ph.D.

1. Xiao Yu, Ph.D. “Progress toward a colon targeting nanoparticle-based drug delivery system” August 2012, presently at Upsher Smith, Inc.
2. Martin Gentile, Ph.D. “Development of a colonic targeting nanosphere delivery system for chemotherapeutic agents” January 2008, presently at Pfizer, Inc.
3. Se-Hwa Kim, Ph.D. “Nanobiosensors for oxidative stress and their applications” May 2007, presently at KIST, Seoul, South Korea.
4. Alisar Zahr, Ph.D. “Encapsulation of chemotherapeutic agents in macromolecular nanoshells” December 2006, presently at a postdoctoral fellow at Harvard University.
5. Kristy Ainslie, Ph.D. “Attenuation of biofouling on nanostructured biomaterials” September 2005, presently at an Assistant Professor of Chemical Engineering at Ohio State University.
6. Jeanna Zguris, Ph.D. “Micro- and nanoscale devices for biosensing applications” August 2005, presently at Johnson & Johnson, Inc.
7. Laura Itle, Ph.D. “Creation of whole-cell based biosensors for high throughput drug screening and toxin detection” August 2005, presently at the Institute for Defense Analysis.
8. Rory Stine, Ph.D. “Lipid films for the production of biosensors and non-fouling surfaces” August 2005, presently at the Naval Research Laboratory.
9. Vamsi Yadavalli, Ph.D. “Toward the development of optical biosensing microsystems” March 2004, presently an Assistant Professor of Chemical Engineering at Virginia Commonwealth University.
10. Won-Gun Koh, Ph.D. “Poly(ethylene) glycol hydrogel microstructures encapsulating living cells” February 2004, presently an Associate Professor of Chemical Engineering at Yonsei University, Seoul, South Korea.
11. Alexander Revzin, Ph.D. “Development of Nanocomposite and Hydrogel Biosensors Based on Thin Film Technology” February 2002, presently at an Associate Professor of Bioengineering at the University of California-Davis.
12. Michael B. Mellott, Ph.D. “Release of Biomolecules from Hydrogel Matrices of Photopolymerized Poly(ethylene glycol)” June 2001, presently at Intel, Inc., Portland, OR.
13. Ryan J. Russell, Ph.D. “Investigation of Poly(ethylene glycol) Hydrogel Networks for Optical Biosensing” December 2000, presently at Intel, Inc., Portland, OR.
14. David D. Hile, Ph.D. “Processing of Biodegradable Polymers in Supercritical and Liquid Carbon Dioxide” December 2000, presently at Stryker Biotech, Cambridge, MA.
15. Kaushik Sirkar, Ph.D. “Amperometric Biosensor Arrays” September 2000, presently at presently at Intel, Inc., Albuquerque, NM.
16. Mary Lee Amirpour, Ph.D. “Topography of Biomaterials” December 1999, presently at Proctor & Gamble, Inc., Cincinnati, OH.

Senior Researchers

1. Amos Mugweru, Ph.D., presently an Assistant Professor of Chemistry at Rowan University.
2. Maureen Dyer, Ph.D., presently at SAIC, Frederick, MD.
3. Aleksandr Simonian, Ph.D., presently at the National Science Foundation.
4. Bumsang Kim, Ph.D., presently an Assistant Professor of Chemical Engineering at Hongik University, Seoul, South Korea.