

CHARLES MICHAEL ROTH, PH.D.

Professor and Interim Chair
Department of Biomedical Engineering
Professor
Department of Chemical and Biochemical Engineering
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Education

1994	Ph.D.	University of Delaware, Newark, DE (Chemical Engineering)
1989	B.S.E.	University of Pennsylvania, Philadelphia, PA (Chemical Engineering, Magna cum Laude)

Postdoctoral Training

1995-1997	Harvard Medical School, Massachusetts General Hospital, and Shriners Burns Hospital, Boston, MA Laboratory of Surgical Science and Engineering
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Academic Appointments

2023-	Interim Chair, Department of Biomedical Engineering, Rutgers University
2020-2023	Vice Chair, Department of Biomedical Engineering, Rutgers University
2019 fall	Visiting Professor, Department of Systems Pharmacology and Translational Therapeutics, Perelman School of Medicine, University of Pennsylvania
2015-	Full Member, Rutgers Cancer Institute of New Jersey, New Brunswick, NJ
2013-2019	Graduate Program Director, Department of Chemical and Biochemical Engineering, Rutgers University
2012-	Professor, Department of Chemical and Biochemical Engineering and Department of Biomedical Engineering, Rutgers University
2006-2012	Associate Professor, Department of Chemical and Biochemical Engineering and Department of Biomedical Engineering, Rutgers University
2000-2006	Assistant Professor, Department of Chemical and Biochemical Engineering and Department of Biomedical Engineering, Rutgers University
2008-	Faculty Member, Graduate Program in Computational Biology and Molecular Biophysics, Rutgers University
2001-	Faculty Member, Graduate Program in Biochemistry Rutgers University / University of Medicine and Dentistry of New Jersey
2001-	Faculty Member, Graduate Program in Cell & Developmental Biology Rutgers University / University of Medicine and Dentistry of New Jersey

1997-2000	Instructor in Surgery (Bioengineering) Harvard Medical School, Boston, MA
1995-1997	Research Fellow in Surgery Harvard Medical School
1994	Teaching Fellow Department of Chemical Engineering University of Delaware, Newark, DE
1992	Visiting Research Associate Department of Inorganic and Analytical Chemistry Johannes Gutenberg University, Mainz, Germany

Hospital Appointments

1998-2000	Senior Scientific Staff Shriners Burns Hospital, Boston, MA
1997-2000	Assistant Bioengineer (Surgery) Surgical Services Massachusetts General Hospital, Boston, MA

Consulting

- Pfizer
- Roche
- New Enterprise Associates
- Zydus Pharmaceuticals (Expert witness in patent infringement case)

Awards and Honors

2015	Outstanding Engineering Faculty Award, Rutgers University
2013	Fellow, American Institute of Medical and Biological Engineering
2011-2017	Member, NIH Gene and Drug Delivery Study Section
2008	Warren I. Susman Award for Excellence in Teaching
2005	Rutgers FASIP Award for Teaching, Research and Service (ranked first in Department)
2003	NSF Faculty CAREER Award
2002	Charles & Johanna Busch Biomedical Research Award
2002	Whitaker Foundation Transitional Career Award
2000	Whitaker Foundation Travel Award
1998-1999	Harvard Council on Biomedical Engineering Faculty Excellence Fellow
1995-1997	NIH Postdoctoral Fellowship
1989-1990	Robert L. Pigford Graduate Student Fellowship, University of Delaware
1989	American Chemical Society Scholastic Achievement Award
1988	Delaware Valley AIChE Junior Award
1985-1989	Benjamin Franklin Scholar, University of Pennsylvania

Memberships in Professional and Honor Societies

2013-	American Institute of Medical and Biological Engineering
2006-2010	New York Academy of Sciences
2004-2007	Biophysical Society
2002-	Biomedical Engineering Society

1997-2001	American Burn Association
1997-2004	American Chemical Society
1996-	American Association for the Advancement of Science
1989-	Tau Beta Pi
1988-	Pi Mu Epsilon
1985-	American Institute of Chemical Engineers

Major Research Interests

Molecular Bioengineering:

- Nanomedicine
- Drug delivery for infection control
- Engineering approaches to cancer

Scholarly Publications

Refereed Journal Publications

1. Farag JE, Roth CM. Model of coupling between cell heterogeneity and transport effects in biofilm response to antibiotics. 2024; in preparation.
2. Varela-Soler Y, Lima MRN, Xu W, Razouk I, Jagpal S, Kirn TJ, Devore DI, Roth CM. Antimicrobial loaded graft-copolymer nanoparticles for treatment of bacterial lung infections. 2024; in preparation.
3. Ganesh SR, Roth CM, Parekkadan B. Simulating interclonal interactions in diffuse large B-cell lymphoma. *Bioengineering*, 2023; 10(12):1360; <https://doi.org/10.3390/bioengineering10121360>.
4. Roychowdhury S, Roth CM. Pharmacodynamic model of the dynamic response of *Pseudomonas aeruginosa* biofilms to antibacterial treatments. *Biomedicines*, 2023; 11:2316; <https://doi.org/10.3390/biomedicines11082316>; also *bioRxiv*, 2022; doi: <https://doi.org/10.1101/2022.07.29.501971>.
5. Burr A, Erickson P, Bento R, Sharma K, Roth C, Parekkadan B. Allometric-like scaling of AAV gene therapy for systemic protein delivery. *Mol. Ther. Methods Clin. Dev.*, 2022; 27:368-379; doi:10.1016/j.omtm.2022.10.011.
6. Kantamneni H, Barkund S, Donzanti M, Martin D, Zhao X, He S, Riman RE, Tan MC, Pierce MC, Roth CM, Ganapathy V, Moghe PV. Shortwave infrared emitting multicolored nanoprobes for biomarker-specific cancer imaging in vivo. *BMC Cancer*, 2020; 20:1082; doi: 10.1186/s12885-020-07604-8.
7. Nusblat LM, Tanna S, Roth CM, Gene silencing of HIF-2 α disrupts glioblastoma stem cell phenotype. *Cancer Drug Resist.*, 2020; 3:199-208; doi: 10.20517/cdr.2019.96.
8. Higgins LM, Ganapathy V, Kantamneni H, Zhao X, Sheng Y, Tan M-C, Roth CM, Riman RE, Moghe PV, Pierce MC. Multi-scale optical imaging of rare-earth-doped nanocomposites in a small animal model. *J. Biomed. Opt.*, 2018; 23:030505; doi:10.1117/1.JBO.23.3.030505.
9. Kantamneni H, Zevon M, Donzanti MJ, Zhao X, Sheng Y, Barkund SR, McCabe LH, Banach-Petrosky W, Higgins LM, Ganesan S, Riman RE, Roth CM, Tan M-C, Pierce MC, Ganapathy V, Moghe PV. Surveillance nanotechnology for multi-organ cancer metastases. *Nature Biomed. Engr.*, 2017; 1:993-1003; doi:10.1038/s41551-017-0167-9.
10. Nusblat LM, Carroll MJ, Roth CM, Cross talk between M2 macrophages and glioma stem cells. *Cell Oncol.*, 2017; 40:471-482; DOI 10.1007/s13402-017-0337-5.
11. Gu L, Wang N, Nusblat LM, Soskind R, Roth CM, Uhrich KE. pH-responsive amphiphilic macromolecular carrier for doxorubicin delivery. *J. Bioactive Compatible Polymers*, 2017; 32:3-16; doi: 10.1177/0883911516643219.
12. Higgins LM, Zevon M, Ganapathy V, Sheng Y, Tan MC, Riman RE, Roth CM, Moghe PV, Pierce MC. Line-scanning confocal microscopy for high-resolution imaging of rare-earth-based upconverting contrast agents. *J. Biomed. Opt.*, 2015; 20:110506; doi:10.1117/1.JBO.20.11.110506.
13. Ganapathy V, Moghe PV, Roth CM. Targeting tumor metastases: drug delivery mechanisms and challenges. *J. Control. Rel.*, 2015; 219:215-223; PMID: PMC4745901.
14. Zevon M, Ganapathy V, Kantamneni H, Mingozi M, Kim P, Adler D, Pierce MC, Riman RE, Roth CM, Moghe PV. CXCR4 targeted short wave infrared (SWIR) emitting nanoprobes for enhanced deep tissue imaging and micrometastatic cancer lesion detection. *Small*, 2015; 11:6347-6357; PMID: PMC4763715.
15. Shreiber DI, Moghe PV, Roth CM. Multidisciplinary "Boot Camp" Training in Cellular Bioengineering to Accelerate Research Immersion for REU Participants. *Adv. Eng. Educ.*, 2015; 4(4):1-15;

- <http://advances.asee.org/wp-content/uploads/vol04/issue04/Papers/AEE-16-Shreiber.pdf>.
16. Peddada LY, Garbuzenko OB, Devore DI, Minko T, **Roth CM**. Delivery of antisense oligonucleotides using poly(alkylene oxide)-poly(propylacrylic acid) graft copolymers in conjunction with cationic liposomes. *J. Control. Rel.*, 2014; 194C:103-112; doi: 10.1016/j.jconrel.2014.08.023; PMID: PMC4573985.
 17. Gu L, Nusblat LM, Tishbi N, Noble SC, Pinson CM, Mintzer E, **Roth CM**, Urich KE. Cationic amphiphilic macromolecule (CAM)-lipid complexes for efficient siRNA delivery. *J. Control. Rel.*, 2014; 184:28-35; doi: 10.1016/j.jconrel.2014.04.005; PMID: PMC4090228.
 18. Naczynski DJ, Tan MC, Zevon M, Wall B, Kohl J, Kulesa A, Chen S, **Roth CM**, Riman RE, Moghe PV. Rare-earth doped nanoparticles as bioactive probes for shortwave infrared in vivo imaging. *Nature Commun.*, 2013; 4:2199; PMID: PMC3736359.
 19. Cui M, Naczynski DJ, Zevon M, Poventud-Fuentes I, Chen S, **Roth CM**, Moghe PV. Multifunctional albumin nanoparticles as combination drug carriers for intra-tumoral chemotherapy. *Adv. Healthc. Mater.*, 2013; 2:2036-2045; doi: 10.1002/adhm.201200467.
 20. Mishra S, Vaughn AD, Devore DI, **Roth CM**. Delivery of siRNA silencing Runx2 using a multifunctional polymer-lipid nanoparticle inhibits osteogenesis in a cell culture model of heterotopic ossification. *Integr. Biol.*, 2012; 4:1498-1507; PMID: PMC4534437.
 21. Mishra S, Peddada LY, Devore DI, **Roth CM**. Poly(alkylene oxide) copolymers for nucleic acid delivery. *Acc. Chem. Res.*, 2012; 45:1057-1066; PMID: PMC3361000.
 22. Waite CL, **Roth CM**. Nanoscale drug delivery systems for enhanced penetration into tumors: Current progress and opportunities. *Crit. Rev. Biomed Eng.*, 2012; 40:21-41; PMID: PMC3639314.
 23. Waite CL, **Roth CM**. Binding and transport of PAMAM-RGD in a tumor spheroid model: The effect of RGD targeting ligand density. *Biotechnol. Bioeng.*, 2011; PMID: PMC3193538.
 24. Sparks SM, Waite CL, Harmon AM, Nusblat LM, **Roth CM**, Urich KE. Efficient intracellular siRNA delivery by ethyleneimine-modified nanoscale amphiphilic macromolecules. *Macromol. Biosci.*, 2011; 11:1192-1200; PMID: PMC3549469.
 25. Hamed SS, **Roth CM**. Mathematical modeling to distinguish cell cycle arrest from cell killing in chemotherapeutic concentration response curves. *J. Pharmacokin. Pharmacodyn.*, 2011; 38:385-403; doi: 10.1007/s10928-011-9199-z.
 26. Yang H, **Roth CM**, Ierapetritou MG. Analysis of amino acid supplementation effects on hepatocyte cultures using flux balance analysis. *OMICS*, 2011; 15:449-460; doi:10.1089/omi.2010.0070.
 27. Yang H, Ierapetritou MG, **Roth CM**. Effects of amino acid transport limitations on cultured hepatocytes. *Biophys. Chem.*, 2010; 152:89-98; <http://dx.doi.org/10.1016/j.bpc.2010.08.004>.
 28. Iyer VV, Ovacic MA, Androulakis IP, **Roth CM**, Ierapetritou MG. Transcriptional and metabolic flux profiling of triadimefon effects on cultured hepatocytes. *Toxicol. Appl. Pharmacol.*, 2010; 248:165-177; <http://dx.doi.org/10.1016/j.taap.2010.07.015>.
 29. Iyer VV, Yang H, Ierapetritou MG, **Roth CM**. Effects of glucose and insulin on HepG2-C3A cell metabolism. *Biotechnol. Bioeng.*, 2010; 107:347-356; DOI: 10.1002/bit.22799. **Selected for Spotlight feature.**
 30. Naczynski DJ, Andelman T, Pal D, Chen S, Riman RE, **Roth CM**, Moghe PV. Albumin nanoshell encapsulation of near infrared excitable rare earth nanoparticles enhances biocompatibility and enables targeted cell imaging. *Small*, 2010; 6:1631-40; DOI: 10.1002/sml.200902403. **Selected for issue cover.**
 31. Waite CL, **Roth CM**. PAMAM-RGD conjugates enhance delivery of siRNA through a multicellular spheroid model of malignant glioma. *Bioconj. Chem.*, 2009; 20:1908-1916; PMID: PMC3047462.
 32. Peddada LY, Harris NK, Devore DI, **Roth CM**. Novel graft copolymers enhance in vitro delivery of antisense oligonucleotides in the presence of serum. *J. Control. Rel.*, 2009; 140:134-140; PMID: PMC2783907.
 33. Yang H, **Roth CM**, Ierapetritou MG. A rational design approach for amino acid supplementation in hepatocyte culture. *Biotechnol. Bioeng.*, 2009; 103:1176-1191.
 34. Waite CL, Sparks SM, Urich KE, **Roth CM**. Acetylation of dendrimers for cellular delivery of siRNA. *BMC Biotechnol.*, 2009; 9:38; PMID: PMC 2679008.
 35. Ierapetritou MI, Georgopoulos PG, **Roth CM**, Androulakis IP. Tissue-level modeling of xenobiotic metabolism in liver: An emerging tool for enabling clinical translational research. *Clin. Transl. Sci.*, 2009; 2:228-237; PMID: PMC3068531.
 36. **Roth CM**. Quantitative measurements and rational materials design for intracellular delivery of oligonucleotides. *Biotechnol. Prog.*, 2008; 24:23-28.
 37. Burley MR, **Roth CM**. Effects of retinoic acid on the proliferation and differentiation of HepG2 cells.

- Open Biotechnol. J.*; 2007; 1:47-51.
38. Sundaram S, Lee LK, **Roth CM**. Interplay of polyethyleneimine molecular weight and oligonucleotide backbone chemistry in the dynamics of antisense activity. *Nucleic Acids Res.*, 2007; 35:4396-4408; PMID: PMC1935005.
 39. Moghe PV and **Roth CM**. Multidisciplinary graduate curriculum on integrative biointerfacial engineering. *Chem. Eng. Educ.*, 2006; 40:251-258.
 40. Yang H, Yarmush ML, **Roth CM**, Ierapetritou MG. Minimal reaction sets and metabolic pathways for cultured hepatocytes. *Comp. Chem. Eng.*, 2006; 103:1176-1191.
 41. Lee LK, Dunham BM, Li Z, **Roth CM**. Cellular dynamics of antisense oligonucleotides and short interfering RNAs. *Ann. N.Y. Acad. Sci.*, 2006; 1082:47-51.
 42. Lee LK, Williams CL, Devore D, **Roth CM**. Poly(propylacrylic acid) enhances cationic lipid mediated delivery of antisense oligonucleotides. *Biomacromolecules*, 2006; 7:1502-1508; PMID: PMC2525803.
 43. Katz JM, **Roth CM**, Dunn MG. Factors that influence transgene expression and cell viability on DNA-PEI seeded collagen films. *Tissue Eng.*, 2005; 11:1398-1406.
 44. Gevertz JL, Dunn SM, **Roth CM**. Mathematical model of real-time PCR kinetics. *Biotechnol. Bioeng.*, 2005; 92:346-355.
 45. Sundaram S, Viriyayuthakorn S, **Roth CM**. Oligonucleotide structure influences the interaction between cationic polymers and oligonucleotides. *Biomacromolecules*, 2005; 6:2961-2968; PMID: PMC2519154.
 46. **Roth CM**. Molecular and cellular barriers limiting the effectiveness of antisense oligonucleotides. *Biophys. J.*, 2005, 89:2286-2295; PMID: PMC1366730.
 47. Jayaraman A, Yarmush ML, **Roth CM**. Evaluation of an in vitro model of hepatic inflammatory response by gene expression profiling. *Tissue Eng.*, 2005; 11:50-63.
 48. **Roth CM**, Sundaram S. Engineering synthetic vectors for improved DNA delivery: Insights from intracellular pathways. *Annu. Rev. Biomed. Engr.*, 2004; 6:397-426.
 49. Lee LK and **Roth CM**. Antisense technology in molecular and cellular bioengineering. *Curr. Opin. Biotechnol.*, 2003; 14:505-511.
 50. **Roth CM**. Quantifying gene expression. *Curr. Issues Mol. Biol.*, 2002; 4:93-100.
 51. Jayaraman A, Yarmush ML, **Roth CM**. Molecular bioengineering. *Ind. Eng. Chem. Res.*, 2002; 41:441-455.
 52. Walton SP, Stephanopoulos GN, Yarmush ML, **Roth CM**. Thermodynamic and kinetic characterization of antisense oligodeoxynucleotide binding to a structured mRNA. *Biophys. J.*, 2002; 82:366-377; PMID: PMC1302476.
 53. Jayaraman A, Walton SP, Yarmush ML, **Roth CM**. Rational selection and quantitative evaluation of antisense oligonucleotides. *Biochim. Biophys. Acta*, 2001; 1520:105-114.
 54. **Roth CM**, Kohen RL, Walton SP, Yarmush ML. Coupling of inflammatory cytokine signaling pathways probed by measurements of extracellular acidification rate. *Biophys. Chem.*, 2001; 89:1-12.
 55. Jayaraman A, Yarmush ML, **Roth CM**. Dynamics of gene expression in rat hepatocytes under stress. *Metabolic Eng.*, 2000; 2:239-251.
 56. Roy P, **Roth CM**, Margolies MN, Yarmush ML. Aromatic residues mediate the pressure-induced association of digoxigenin and antibody 26-10. *Biophys. Chem.*, 1999; 83:171-177.
 57. Roy P, **Roth CM**, Margolies MN, Yarmush ML. Effect of pressure on antigen-antibody complexes: modulation by ionic strength and temperature. *Mol. Immunol.*, 1999; 36:1149-1158.
 58. **Roth CM**, Yarmush ML. Nucleic acid biotechnology. *Annu. Rev. Biomed. Engr.*, 1999, 1:265-297.
 59. Andreadis ST, **Roth CM**, Le Doux, JM, Morgan, JR, Yarmush, ML. Large-scale processing of recombinant retroviruses for gene therapy. *Biotechnol. Prog.*, 1999, 15:1-11.
 60. Walton SP, Stephanopoulos GN, Yarmush ML, **Roth CM**. Prediction of antisense oligonucleotide binding affinity to a structured RNA target. *Biotechnol. Bioeng.*, 1999; 65:1-9.
 61. Sundaram S, **Roth CM**, Yarmush ML. Pressure-induced dissociation of antigen-antibody complexes. *Biotechnol. Prog.*, 1998; 14:773-781.
 62. **Roth CM**, Sader JE, Lenhoff AM. Electrostatic contribution to the energy and entropy of protein adsorption. *J. Colloid Interface Sci.*, 1998; 203:218-221.
 63. Rajur SB, **Roth CM**, Morgan JR, Yarmush ML. Covalent protein-oligonucleotide conjugates for efficient delivery of antisense molecules. *Bioconjugate Chem.*, 1997; 8:935-940.
 64. **Roth CM**, Reiken SR, Le Doux JM, Rajur SB, Lu X-M, Morgan JR, Yarmush ML. Targeted antisense modulation of inflammatory cytokine receptors. *Biotechnol. Bioeng.*, 1997; 55:72-81.
 65. **Roth CM**, Lenhoff AM. Improved parametric representation of water dielectric data for Lifshitz theory calculations. *J. Colloid Interface Sci.*, 1996; 179:637-639.
 66. **Roth CM**, Unger KK, Lenhoff AM. A mechanistic model for retention in ion exchange chromatography.

- J. Chromatogr.*, 1996; 726:45-56.
67. **Roth CM**, Neal BL, Lenhoff AM. Van der Waals interactions involving proteins. *Biophys. J.*, 1996; 70:977-987; PMID 1224998.
 68. **Roth CM**, Lenhoff AM. Electrostatic and van der Waals contributions to protein adsorption: comparison of theory with experiment. *Langmuir*, 1995; 11:3500-3509.
 69. **Roth CM**, Lenhoff AM. Electrostatic and van der Waals contributions to protein adsorption: computation of equilibrium constants. *Langmuir*, 1993; 9:962-972.

Conference Proceedings

1. Pierce MC, Higgins LM, Ganapathy V, Kantamneni H, Riman RE, **Roth CM**, Moghe PV. Rare-earth doped nanocomposites enable multiscale targeted short-wave infrared imaging of metastatic breast cancer. *Proc. SPIE*, Vol. 10043 (2017); doi:10.1117/12.2253511.
2. Zevon M, Kantamneni H, Ganapathy V, Higgins L, Mingozi M, Pierce M, Riman R, **Roth CM**, Moghe PV. Early detection and longitudinal imaging of cancer micrometastases using biofunctionalized rare-earth albumin nanocomposites, *Proc. SPIE*, Vol. 9836:9836P (2016); <http://dx.doi.org/10.1117/12.2224678>.

Book Chapters:

1. **Roth CM**. Gene and oligonucleotide delivery, In: Drug Delivery: Principles and Applications, Second Edition (Binghe Wang, Longqin Hu and Teruna Siahaan, eds.), John Wiley & Sons, New York, 2016, Chapter 25, pp. 655-675.
2. **Roth CM**. Electrophoresis: Nucleic acids, In: Encyclopedia of Analytical Science, Second Edition (Paul J. Worsfold, Alan Townshend and Colin F. Poole, eds.), Elsevier, Oxford, 2005, Vol. 2, pp. 456-460.
3. Walton SP, **Roth CM**, Yarmush ML. Antisense technology, In: The Biomedical Engineering Handbook, 2nd ed. CRC Press LLC, Boca Raton, 2000, Chapter 103, pp. 1-19.
4. **Roth CM**, Yarmush ML. Chromatography, size exclusion, In: Flickinger MC, Drew, SW eds., The Encyclopedia of Bioprocess Technology: Fermentation, Biocatalysis, & Bioseparation. John Wiley & Sons, New York, 1999, pp. 639-650.
5. **Roth CM**, Lenhoff AM. Quantitative modeling of protein adsorption, In: Malmsten M, ed., Biopolymers at Interfaces. Marcel Dekker, New York, 1998, pp. 89-118.

Conference Presentations

1. Bento R, Burr A, Erickson P, Sharma K, Roth C, Parekkadan B, “Allometric-like scaling of AAV gene therapy for systemic protein delivery,” American Society of Gene and Cell Therapy Annual Meeting, Los Angeles, CA, May 2023.
2. Appiah Kubi A, Varela Y, Devore DI, Roth CM, “Observing Polyelectrolyte Surfactants and their Interaction with *Pseudomonas Aeruginosa* Biofilms in Cystic Fibrosis,” Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS), Anaheim, CA, November 2022.
3. Varela Y, Chavda H, Erickson P, Parekkadan B, Roth C, “Evaluating Drug Formulations on a 3D Biofilm Growth Model Under Simulated In Vivo Conditions,” American Institute of Chemical Engineers Annual Meeting, Phoenix, AZ, November 2022.
4. Appiah Kubi A, Varela Y, Devore DI, Roth CM, “Observing Polyelectrolyte Surfactants and their Interaction with *Pseudomonas Aeruginosa* Biofilms in Cystic Fibrosis,” National Diversity in STEM Conference, San Juan, PR, October 2022.
5. Roychowdhury S, Roth CM, “Pharmacodynamic Model of Tobramycin and Colistin Activity Against *Pseudomonas Aeruginosa* Biofilms,” Biomedical Engineering Society Annual Meeting, San Antonio, TX, October 2022.
6. Mohamed Y, Xu W, Varela-Soler Y, Devore DI, Roth CM, “Effectiveness of Polyelectrolyte Surfactant Nanoparticles in the Eradication of Bacterial Biofilms,” American Institute of Chemical Engineers Annual Meeting, Boston, MA and Virtual, November 2021.

7. McDonald J, Patel P, Goyal R, Kirn T, Jagpal S, Calderon L, Mainelis G, Devore D, Roth C, "Polyelectrolyte surfactant nanoformulation of tobramycin for treatment of lung Gram-negative biofilm infections," Controlled Release Society Annual Meeting, Virtual, July 2021.
8. Patel P, Goyal R, Holloway M, McDonald J, Davis S, Padhee S, Houghten R, Devore D, Roth C, "Surface Activity of Graft Copolymers Controls Formulations Properties and Enhances Bioactivity of Cationic Antimicrobial Peptides," Biomedical Engineering Society Annual Meeting, Philadelphia, PA, October 2019.
9. Kantamneni H, Donzanti M, Pelka S, Barkund S, Pierce M, Tan MC, Roth C, Ganapathy V, Moghe P, "Real-time Molecular Mapping of Tumor Heterogeneity Using Precision-Targeted Nanophotonic Probes," Biomedical Engineering Society Annual Meeting, Atlanta, GA, October 2018.
10. Ganapathy V, Roth C, Pierce M, Moghe P, Riman R, "Nanophotonic Rare-Earth Based Probes for Early Detection of Cancer," Materials Science & Technology 2018 Conference, Columbus, OH, October 2018.
11. Goyal R, Holloway M, Patel P, Devore DI, Roth CM, "Formulation of Cationic Antimicrobial Peptides for Treatment of Wound Infections," American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 2017.
12. Solbach A, Holloway M, Devore DI, Roth CM, "The Efficacy of a Novel Nanoparticle as a Delivery Vector for Exogenous miR-7 to Cells in Vitro," Biomedical Engineering Society Annual Meeting, Phoenix, AZ, October 2017.
13. Donzanti M, Kantamneni H, Bobadilla C, Zhao X, He S, Tan MC, Pierce M, Riman R, Ganapathy V, Roth C, Moghe P, "Ratiometric Assessment Of Intra-Tumor Heterogeneity Using Tumor Targeted SWIR Emitting Nanoprobes," Biomedical Engineering Society Annual Meeting, Phoenix, AZ, October 2017.
14. MC Pierce, V Ganapathy, LM Higgins, M Zevon, H Kantamneni, RE Riman, CM Roth, PV Moghe, "Rare-earth doped nanocomposites enable multiscale targeted short-wave infrared imaging of metastatic breast cancer," SPIE Conference Diagnosis and Treatment of Diseases in the Breast and Reproductive System III, San Francisco, CA, January 2017.
15. Keyes J, Goyal R, Devore D, Roth C, "The development and characterization of polyelectrolyte polymer-peptide nanoplexes for antimicrobial applications," Annual Biomedical Research Conference for Minority Students, Tampa, FL, November 2016.
16. Kantamneni H, Zevon M, Higgins L, Adler D, Zhao X, Yang S, Tan MC, Pierce M, Riman RE, Ganapathy V, Roth CM, Moghe PV, "Optical Surveillance of Multi-Organ Metastatic Lesions Using Rare Earth Albumin Nanoprobes," Biomedical Engineering Society (BMES) Annual Meeting, Minneapolis, MN, October 2016.
17. PV Moghe, M Zevon, H Kantamneni, V Ganapathy, MC Pierce, CM Roth, RE Riman, "Early detection and longitudinal imaging of cancer micrometastases using biofunctionalized rare earth albumin nanocomposites," SPIE Optics + Photonics, San Diego, CA, August 2016.
18. MC Pierce, V Ganapathy, LM Higgins, M Zevon, H Kantamneni, RE Riman, CM Roth, PV Moghe, "Rare-earth doped nanocomposites for targeted short-wave infrared imaging of cancer," SPIE Translational Biophotonics, Houston TX, May 2016.
19. Zevon M, Ganapathy V, Kantamneni H, Higgins L, Mingozi MP, Riman RE, Roth CM, Pierce M, Moghe PV, "Cancer-Targeted Short-Wave Infra-Red Emitting Rare-Earth Albumin Nanocomposites for Lesion Mapping and Deep-Tissue Imaging," 10th World Biomaterials Congress, Montreal, QC, Canada, May 2016.
20. Zevon M, Kantamneni H, Higgins L, Adler D, Zhao X, Yang S, Tan MC, Pierce M, Riman RE, Ganapathy V, Roth CM, Moghe PV, "Optical imaging and detection of distal site micrometastatic lesions in vivo: Design of rare-earth albumin nanocomposites," American Association for Cancer Research (AACR) Annual Meeting, New Orleans, LA, April 2016.

21. Higgins L, Zevon M, Ganapathy V, Kantamneni H, Yang S, Tan MC, Riman RE, Roth CM, Moghe PV, Pierce MC, “High Resolution Imaging of Molecularly Targeted Rare-Earth Based Nanocomposites” The Optical Society: Translating Biomedical Optics from the Scientific Bench to Clinical Practice, Fort Lauderdale, FL, April 2016.
22. Nusblat LM, Roth CM, “Understanding and Modulation of the Glioma Stem Cell Microenvironment,” Biomedical Engineering Society (BMES) Annual Meeting, Tampa, FL, October 2015.
23. Zevon M, Ganapathy V, Kantamneni H, Higgins L, Zhao X, Yang S, Tan MC, Pierce M, Riman RE, Roth CM, Moghe PV, “Rare-Earth Albumin Nanocomposites For Improved Deep Tissue In Vivo Optical Imaging And Micrometastatic Lesion Detection,” Biomedical Engineering Society (BMES) Annual Meeting, Tampa, FL, October 2015.
24. Higgins L, Zevon M, Ganapathy V, Riman RE, Roth CM, Moghe PV, Pierce MC, “High Resolution Imaging of Biofunctionalized Rare-Earth Nanocomposites for Tumor Detection,” Biomedical Engineering Society (BMES) Annual Meeting, Tampa, FL, October 2015.
25. Higgins LM, Hu P, Mingozi M, Ganapathy V, Zevon M, Riman RE, Roth CM, Moghe PV, Pierce MC, “Development of a Preclinical Imaging System for Assessment of Short-wave Infrared Nanocomposite Contrast Agents,” Advances in Optics for Biotechnology, Medicine and Surgery XIV, Vail, CO, July 2015.
26. Zevon M, Ganapathy V, Kantamneni H, Kim P, Adler D, Ganesan S, Pierce M, Riman RE, **Roth CM**, Moghe PV. “Biofunctionalized Rare-earth Albumin Nanocomposites for Tumor Detection and Tracking,” New Jersey Annual Retreat on Cancer, Piscataway, NJ, May 2015.
27. Moretti A, Wang N, **Roth CM**, Urich KE. “Sugar-based amphiphilic polymers: Biocompatible, tunable, and easily formulated nanocarriers for delivery of cancer treatments”, New Jersey Annual Retreat on Cancer, Piscataway, NJ, May 2015.
28. Zevon M, Ganapathy V, Kantamneni H, Mingozi M, Kim P, Adler D, Pierce M, Riman RE, **Roth CM**, Moghe PV. “Early detection and longitudinal imaging of breast cancer metastatic microlesions using short-wave infrared light emitting rare-earth nanoprobe,” American Association for Cancer Research (AACR) Annual Meeting, Philadelphia, PA, April 2015.
29. Hu P, Mingozi M, Higgins LM, Ganapathy V, Zevon M, Riman RE, Roth CM, Moghe PV, Pierce MC, “Small Animal Imaging Platform for Quantitative Short-wave Infrared Emitting Contrast Agents,” SPIE BiOS Conference, San Francisco, CA, February 2015.
30. Zevon M, Ganapathy V, Kim P, Tan MC, Naczynski D, Riman R, **Roth CM**, Moghe PV, “Design of Biofunctionalized Rare-Earth Albumin Nanocomposites for Tumor Microlesion Detection and Tracking,” Biomedical Engineering Society (BMES) Annual Meeting, San Antonio, TX, October 2014.
31. Shreiber DI, **Roth CM**, Moghe PV, ““Boot Camp” Training in Cellular Bioengineering to Accelerate Research Immersion for REU Participants,” Biomedical Engineering Society (BMES) Annual Meeting, San Antonio, TX, October 2014.
32. Urich KE, Gu L, **Roth CM**, Nusblat LM, Mintzer E, Tishbi N, Noble S, Pinson C. “Cationic amphiphilic macromolecules (CAM)-lipid complexes for intracellular siRNA delivery”, Controlled Release Society National Meeting, Honolulu, HI, July, 2013.
33. Mishra S, Devore DI, **Roth CM**, “Intracellular Delivery of siRNA silencing Runx2 Using Alendronate-conjugated Polymer/Lipid Nanocomplexes in a Cell Culture Model of Heterotopic Ossification,” Materials Research Society Spring Meeting, San Francisco, CA, April 2013.
34. **Roth CM**, Moghe PV, “Mentoring Challenges and Opportunities in an REU Setting,” Biomedical Engineering Society (BMES) Annual Meeting, Atlanta, GA, October 2012.

35. Nusblat LM, Carroll M, **Roth CM**, “Crosstalk between M2 Macrophages and Glioma Cancer Stem Cells,” Biomedical Engineering Society (BMES) Annual Meeting, Atlanta, GA, October 2012.
36. Gu, L, Nusblat, LM, **Roth CM**, Uhrich KE. “Cationic amphiphilic macromolecule-lipid complexes for in vitro siRNA delivery”, American Chemical Society National Meeting, Philadelphia, PA, August 2012.
37. Naczynski DJ, Tan MC, Zevon M, Wall, B, Kohl J, Kulesa T, **Roth CM**, Chen S, Riman R, Moghe PV, “Infrared-Emitting, Multifunctional Rare-Earth Doped Nanoparticles in Encapsulated Albumin Nanocarriers for Targeted Tissue Imaging,” 9th World Biomaterials Congress, Chengdu, China, June 2012.
38. Peddada L, Mishra S, Garbuzenko O, Minko T, Devore D, **Roth CM**, “Multifunctional Lipid-polymer Nanoparticles for Enhanced Serum Stability and Intracellular Delivery of Oligonucleotides,” American Society for Gene & Cell Therapy (ASGCT) Annual Meeting, Philadelphia, PA, May 2012
39. Carroll M, Nusblat LM, **Roth CM**, “Role of Inflammatory Pathway and Cells on Glioma Cell Response to Chemotherapy,” 38th Northeast Bioengineering Conference, Philadelphia, PA, March 2012.
40. Shahid MM, Arshad S, Hwang M, Patel P, Yu E, **Roth CM**, “Systematic Nanoparticle Diffusivity Estimation Using Multicellular Tumor Spheroid Model,” 38th Northeast Bioengineering Conference, Philadelphia, PA, March 2012.
41. McCoy M, Nusblat LM, **Roth CM**, “Combined Effects of Carmustine and STAT3 SiRNA Silencing in Glioblastoma Spheroids,” Annual Biomedical Research Conference for Minority Students, St. Louis, MO, November 2011.
42. Poventud-Fuentes I, Zevon M, Naczynski DJ, **Roth CM**, Moghe PV, “Effects of Albumin Nanoparticles’ Physical Characteristics on Tumor Penetration,” Annual Biomedical Research Conference for Minority Students, St. Louis, MO, November 2011 (Received Best Poster Award for Engineering).
43. Peddada L, Joy A, Costache M, Devore D, Garbuzenko O, Minko T, **Roth CM**, “Multifunctional Graft Copolymers Aid Liposomal Delivery of Antisense Oligonucleotides,” Biomedical Engineering Society (BMES) Annual Meeting, Hartford, CT, October 2011.
44. Riman RE, Tan MC, Kumar GA, **Roth CM**, Moghe PV, “Solvothermal Synthesis of Optical Ceramic-Polymer Nanocomposites,” Telluride Science Research Center Workshop on Solution Based Synthesis of Nanomaterials and their Organization for Hybrid Device Structures, Telluride, CO, July 2011.
45. Peddada L, Joy A, Devore D, Garbuzenko O, Minko T, **Roth CM**, “Novel Carrier for Delivery of Antisense Therapeutics,” Annual Retreat on Cancer Research, Piscataway, NJ, May 2011.
46. Naczynski DJ, Andelman T, Riman RE, Chen S, **Roth CM**, Moghe P. “Multifunctional Rare-Earth Doped Nanoparticles in Encapsulated Albumin Nanocarriers for Tumor Targeting,” European Materials Research Society, Nice, France, May 2011.
47. Naczynski DJ, Andelman T, Pal D, Riman R, **Roth CM**, Moghe P. “Multifunctional Rare-Earth Doped Nanoparticles in Encapsulated Albumin Nanocarriers for Tumor Targeting,” American Institute of Chemical Engineers (AIChE) Annual Meeting, Salt Lake City, UT, November 2010.
48. Waite CL, **Roth CM**, “Analysis of Transport Mechanisms Governing Efficient Tumor Penetration and siRNA Delivery by RGD-PAMAM Dendrimers,” American Institute of Chemical Engineers (AIChE) Annual Meeting, Salt Lake City, UT, November 2010.
49. Chou RL, Peddada L, **Roth CM**, “Characterization of Graft Copolymers that Augment Delivery of Antisense Oligodeoxynucleotides,” Biomedical Engineering Society (BMES) Annual Meeting, Austin, TX, October 2010.

50. Sparks SM, Waite CL, Harmon AM, **Roth CM**, Uhrich KE. "Oligoethyleneimine-functionalized nanoscale amphiphilic macromolecules for intracellular delivery of nucleic acids", American Chemical Society National Meeting, Boston, MA, August, 2010.
51. Iyer VV, Androulakis IP, **Roth CM**, Ierapetritou MG, "Effects of Triadimefon on the Metabolism of Cultured Hepatocytes", 10th IEEE International Conference on Bioinformatics and Bioengineering, Philadelphia, PA, June 2010.
52. Waite CL, **Roth CM**, "Analysis of Transport Mechanisms Governing Efficient Tumor Penetration and siRNA Delivery by RGD-PAMAM Dendrimers," Polymers in Drug Delivery Symposium, Piscataway, NJ, May 2010.
53. Naczynski DJ, Andelman T, Pal D, Riman R, **Roth CM**, Moghe P. "Multifunctional Rare-Earth Doped Nanoparticles in Encapsulated Albumin Nanocarriers for Tumor Targeting," Society for Biomaterials Annual Meeting, Seattle, WA, April 2010.
54. Waite CL, **Roth CM**, "PAMAM-RGD Conjugates for siRNA Delivery through a Three-Dimensional Tumor Model of Malignant Glioma", American Institute of Chemical Engineers (AIChE) Annual Meeting, Nashville, TN, November 2009.
55. Yang H, **Roth CM**, Ierapetritou MG, "Design of Amino Acid Supplementation for Hepatocyte Culture using Flux and Pathway Analysis", American Institute of Chemical Engineers (AIChE) Annual Meeting, Nashville, TN, November 2009.
56. Iyer VV, **Roth CM**, Ierapetritou MG, "Understanding Mechanisms of Conazole Toxicity in Cultured Hepatocytes", American Institute of Chemical Engineers (AIChE) Annual Meeting, Nashville, TN, November 2009.
57. Naczynski D, Andelman T, Riman R, **Roth C**, Moghe P. "Near-Infrared Imaging of Rare-Earth Doped Nanoparticles in Encapsulated Albumin Nanocarriers," Biomedical Engineering Society (BMES) Annual Meeting, Pittsburgh, PA, October 2009.
58. Peddada L, Harris NK, Devore DI, **Roth CM**, "Co-delivery of Chemotherapeutic Drugs and Antisense Oligonucleotides using Polymer-Lipid Complexes", Biomedical Engineering Society (BMES) Annual Meeting, Pittsburgh, PA, October 2009.
59. Demirdirek B, Waite CL, **Roth CM**, Uhrich, KE. "Conjugation of Peptides to Amphiphilic Scorpion-like Polymeric Micelles for Targeting Drug Delivery", American Chemical Society National Meeting, Washington, DC, August, 2009.
60. Peddada L, Harris NK, Devore DI, **Roth CM**, "Graft Copolymer-Liposome Complexes Enhance Delivery of Antisense Oligonucleotides", ACS Colloid and Surface Science Symposium, New York, NY, June 2009.
61. Waite CL, **Roth CM**, "Poly(amidoamine) Dendrimer-RGD Conjugates Enhance siRNA Delivery Through a Multicellular Spheroid Model of Malignant Glioma and Mediate RNAi-induced STAT3 Silencing", Annual Retreat on Cancer Research, Piscataway, NJ, May 2009.
62. Yang H, **Roth CM**, Ierapetritou MG, "Design of Amino Acid Supplementation for Hepatocyte Culture using Flux and Pathway Analysis", The Third Annual Systems Toxicology Symposium, Environmental Bioinformatics and Computational Toxicology Center, Piscataway, NJ, May 2009.
63. Iyer VV, Androulakis IP, **Roth CM**, Ierapetritou MG, "Understanding Mechanisms of Conazole Toxicity in Cultured Hepatocytes", The Third Annual Systems Toxicology Symposium, Environmental Bioinformatics and Computational Toxicology Center, Piscataway, NJ, May 2009.
64. **Roth CM**, "Polyelectrolyte Complexes for Delivery of Oligonucleotides", RNAi World Congress, Boston, MA, May 2009.

65. Iyer VV, Androulakis IP, **Roth CM**, Ierapetritou MG, "Understanding Mechanisms of Conazole Toxicity in Cultured Hepatocytes", National Academy of Sciences Symposium on Toxicity Pathway-based Risk Assessment, Washington, DC, May 2009.
66. Gianella PE, Waite CL, **Roth CM**, "STAT3 Silencing for Enhanced Sensitivity of Malignant Glioma Cells to Carmustine", Northeast Bioengineering Conference, Cambridge, MA, April 2009.
67. Peddada L, Harris NK, Devore DI, **Roth CM**, "Novel Graft Copolymers Enhance Cationic Lipid Mediated Delivery of Oligonucleotides", American Institute of Chemical Engineers (AIChE) Annual Meeting, Philadelphia, PA, November 2008.
68. **Roth CM**, Sheth P, Jain A, Shah V, Dunn SM. Prediction of SiRNA Functionality Using Sequence and Thermodynamic Properties", American Institute of Chemical Engineers (AIChE) Annual Meeting, Philadelphia, PA, November 2008.
69. Hamed SE and **Roth CM**, "Characterization of Resistance to Chemotherapy in Glioma Cell Lines", American Institute of Chemical Engineers (AIChE) Annual Meeting, Philadelphia, PA, November 2008.
70. Lagos J and **Roth CM**, "Influence of MicroRNAs in the De-Differentiation of Primary Rat Hepatocytes", American Institute of Chemical Engineers (AIChE) Annual Meeting, Philadelphia, PA, November 2008.
71. Waite CL, Sparks SM, Uhrich KE, **Roth CM**, "RGD-Targeting of PAMAM Dendrimers for Efficient Delivery of siRNA to Malignant Glioblastoma Cells", American Institute of Chemical Engineers (AIChE) Annual Meeting, Philadelphia, PA, November 2008.
72. Yang H, **Roth CM**, Ierapetritou MG, "Effects of Hormone and Amino Acid Supplementation in Optimal Liver Specific Functions of Hepatocytes", American Institute of Chemical Engineers (AIChE) Annual Meeting, Philadelphia, PA, November 2008.
73. Iyer V, **Roth CM**, Ierapetritou MG, "Effects of Glucose and Insulin Levels on HepG2 Cell Metabolism", American Institute of Chemical Engineers (AIChE) Annual Meeting, Philadelphia, PA, November 2008.
74. Hamed SS, **Roth CM**. "Cell Cycle Analysis of Resistance to Chemotherapy in Glioma Cell Lines", NIH Quantitative Systems Pharmacology Conference, Bethesda, MD, October 2008.
75. **Roth CM**, Peddada LY, Harris NK, Devore DI. Novel Graft Copolymers for Intracellular Delivery of Oligonucleotides, Oligonucleotide Therapeutics Conference, Boston, MA, October 2008.
76. Sparks SM, Harmon AM, Waite CL, **Roth CM**, Uhrich, KE. "Aminated Amphiphilic Scorpion-like Macromolecules as Delivery Vehicles for Nucleic Acids", American Chemical Society National Meeting, Philadelphia, PA, August, 2008.
77. Waite CL, Sparks SM, Uhrich KE, **Roth CM**, "Acetylation of PAMAM Dendrimer for siRNA Delivery to Cancer Cells", ACS Symposium: Biomaterials in Medicine and Personal Care, New Brunswick, NJ, April 2008.
78. **Roth CM**, "Computational Modeling of Liver Function", The Second Annual Systems Toxicology Symposium, Environmental Bioinformatics and Computational Toxicology Center, Piscataway, NJ, April 2008.
79. Georgopoulos PG, Welsh WJ, Isukapalli S, Ierapetritou M, Androulakis I, **Roth CM**, Tong W, "Progress in Developing Infrastructure for a Virtual Liver I: Essential Concepts and Modules," The Second Annual Systems Toxicology Symposium, Environmental Bioinformatics and Computational Toxicology Center, Piscataway, NJ, April 2008.
80. Yang H, **Roth CM**, Ierapetritou MG, "Effects of Amino Acid Supplementation in Hepatic Metabolism", The Second Annual Systems Toxicology Symposium, Environmental Bioinformatics and Computational Toxicology Center, Piscataway, NJ, April 2008.

81. Waite CL, Sparks SM, Uhrich KE, **Roth CM**, "Acetylation of PAMAM Dendrimer for siRNA Delivery to Cancer Cells", 34th Northeast Bioengineering Conference, Providence, RI, April 2008.
82. Peddada L, Harris NK, Devore DI, **Roth CM**, "Novel Graft Copolymers for Intracellular Delivery of Oligonucleotides", 34th Northeast Bioengineering Conference, Providence, RI, April 2008.
83. **Roth CM**, "Rational Design of Polymeric Vectors for Intracellular Delivery of Oligonucleotides", Materials Research Society Symposium, Boston, MA, November 2007.
84. Guzikowski SA, Ierapetritou MG, **Roth CM**, "Metabolic Analysis of Xenobiotic Metabolism in Hepatocytes", American Institute of Chemical Engineers (AIChE) Annual Meeting, Salt Lake City, UT, November 2007.
85. Sundaram S, Hwang ME, Lee LK, **Roth CM**, "Tuning antisense oligonucleotide backbone chemistry for improved polymer-mediated delivery and gene silencing", American Institute of Chemical Engineers (AIChE) Annual Meeting, Salt Lake City, UT, November 2007.
86. Yang H, **Roth CM**, Ierapetritou MG, "Effects of amino acid supplementation in optimal liver specific functions of hepatocytes", American Institute of Chemical Engineers (AIChE) Annual Meeting, Salt Lake City, UT, November 2007.
87. Muzzio FJ, Tomassone MS, **Roth CM**, "NSF-NIH IGERT Program in Nanopharmaceutical Science and Engineering", 2nd Annual NCI Alliance for Nanotechnology in Cancer Investigators Meeting, Bethesda, MD, October, 2007.
88. Friedlander R, Sundaram S, Peddada L, **Roth CM**, "Coupled Effects of Oligonucleotide Chemistry, Polymer Molecular Mass and Cell Type on Gene Silencing", Biomedical Engineering Society (BMES) Annual Meeting, Los Angeles, CA, September 2007.
89. Sundaram S, Hwang ME, **Roth CM**, "Effects of antisense oligonucleotide backbone chemistry on cellular delivery using polymers", Biomedical Engineering Society (BMES) Annual Meeting, Los Angeles, CA, September 2007.
90. Hamed SE and **Roth CM**, "Cell Cycle Analysis Of Glioma Cell Response To Chemotherapeutics", Biomedical Engineering Society (BMES) Annual Meeting, Los Angeles, CA, September 2007.
91. Sparks SM, Wang J, del Rosario L, Waite CL, Harmon A, **Roth CM**, Uhrich, KE. "Synthesis of Functionalized Amphiphilic Scorpion-like Macromolecules for Biomedical Applications", American Chemical Society National Meeting, Boston, MA, August, 2007.
92. Sundaram S, Lee LK, Hwang ME, **Roth CM**, "Molecular Design and Cellular Delivery of Oligonucleotides", 1st International Conference on Biomolecular Engineering, Coronado, CA, January 2007.
93. Sundaram S, Lee LK, Hwang ME, **Roth CM**, "Relationships between molecular properties of polymer-oligonucleotide complexes and cellular antisense activity", American Institute of Chemical Engineers (AIChE) Annual Meeting, San Francisco, CA, November 2006.
94. Guzikowski SA, Ierapetritou MG, **Roth CM**, "Metabolic and Genomic Analysis of Acetaminophen Metabolism", American Institute of Chemical Engineers (AIChE) Annual Meeting, San Francisco, CA, November 2006.
95. Yang H, **Roth CM**, Ierapetritou MG, "Insights into Hepatic Metabolism from Flux Balance and Pathway Analyses", American Institute of Chemical Engineers (AIChE) Annual Meeting, San Francisco, CA, November 2006.
96. Burley MR, **Roth CM**, "Effects of Retinoic Acid on Hepatocyte Morphology, Proliferation and Function", American Institute of Chemical Engineers (AIChE) Annual Meeting, San Francisco, CA, November 2006.

97. Sundaram S, Lee LK, Hwang ME, **Roth CM**, "Role of oligonucleotide backbone on interactions with and cellular delivery by polymers", Oligonucleotide Therapeutics Society, New York, NY, October 2006.
98. Sundaram S, Lee LK, Hwang ME, **Roth CM**, "Interplay of polymer and oligonucleotide properties in antisense delivery", Biomedical Engineering Society (BMES) Annual Meeting, Chicago, IL, October 2006.
99. Hwang ME, Sundaram S, Lee LK, **Roth CM**, "Interplay of polymer and nucleic acid properties in antisense effectiveness", Biomedical Engineering Society (BMES) Annual Meeting, Chicago, IL, October 2006.
100. Hamed SE and Roth CM, "Relationship of chemotherapeutic dose response curves to cell cycle effects", Biomedical Engineering Society (BMES) Annual Meeting, Chicago, IL, October 2006.
101. Sundaram S, Lee LK, Hwang ME, **Roth CM**, "Role of vector in the dynamics of antisense activity", 232nd American Chemical Society National Meeting and Exposition, San Francisco, CA, September 2006.
102. Guzikowski SA, Tischfield SE, Ierapetritou MG, **Roth CM**, "Metabolic and Genomic Analysis of Acetaminophen Metabolism and Induced Hepatotoxicity", 232nd American Chemical Society National Meeting and Exposition, San Francisco, CA, September 2006.
103. **Roth CM** and Hamed S, "Modeling chemotherapeutic dose response curves via cell cycle effects", DIMACS Workshop on Computational Tumor Modeling, Piscataway, NJ, August 2006.
104. Lee LK, Sundaram S, **Roth CM**, "Biophysical Characterization of Antisense Delivery Systems", 1st Annual Methods in Bioengineering Conference, Boston, MA, July 2006.
105. Yang H, Yarmush ML, **Roth CM**, Ierapetritou MG, "Analysis of Albumin and Urea Synthesis Rates in Isolated Hepatocytes using Metabolic Control Theory", 9th Int. Symp. on Process Engineering + 16th European Symposium on Computer Aided Process Engineering, Garmisch-Partenkirchen, Germany, July 2006.
106. Sundaram S, Lee LK, **Roth CM**, "Role of vector in the dynamics of antisense activity", 32nd Northeast Bioengineering Conference, Easton, PA, April 2006.
107. Guzikowski SA, Ierapetritou MG, **Roth CM**, "Modeling Regulatory and Metabolic Mechanisms for Acetaminophen-induced Hepatotoxicity", 32nd Northeast Bioengineering Conference, Easton, PA, April 2006.
108. **Roth CM**, "Molecular and Materials Design for Cellular Delivery of Oligonucleotides", Materials Research Society Symposium, Boston, MA, December 2005.
109. Sangari R, Dunham B, Lee LK, Roth CM, "A Comparison of the Cellular Effects of Antisense Oligonucleotides and Small Interfering RNAs", American Institute of Chemical Engineers (AIChE) Annual Meeting, Cincinnati, OH, November 2005.
110. Tischfield S, Guzikowski S, Ierapetritou M, Roth CM, "A Bioinformatics Approach to Modeling Cytochrome P450 Gene Regulation in Hepatocytes", American Institute of Chemical Engineers (AIChE) Annual Meeting, Cincinnati, OH, November 2005.
111. Vitolo JL, Androulakis IP, **Roth CM**, "Computational Analysis of Combinatorial Gene Regulation in the Liver", American Institute of Chemical Engineers (AIChE) Annual Meeting, Cincinnati, OH, November 2005.
112. Lee LK, Williams CL, **Roth CM**, "An anionic polymer enhances cationic lipid-mediated delivery of antisense oligonucleotides", American Institute of Chemical Engineers (AIChE) Annual Meeting, Cincinnati, OH, November 2005.

113. Sundaram S, Lee LK, **Roth CM**, “Quantitative evaluation of the role of vector in the dynamics of antisense effects”, American Institute of Chemical Engineers (AIChE) Annual Meeting, Cincinnati, OH, November 2005.
114. Ierapetritou MG, Sharma N, Yang H, Guzikowski SA, Yarmush ML, **Roth CM**, “Optimization and Control of Metabolic Activities in Hepatocytes”, American Institute of Chemical Engineers (AIChE) Annual Meeting, Cincinnati, OH, November 2005.
115. Yang E, Vitolo JL, **Roth CM**, Androulakis IP, “Mixed-Integer Reformulations of Network Component Analysis”, American Institute of Chemical Engineers (AIChE) Annual Meeting, Cincinnati, OH, November 2005.
116. Yang E, Vitolo JL, **Roth CM**, Androulakis IP, “New approaches for enabling temporal expression profiling analysis”, American Institute of Chemical Engineers (AIChE) Annual Meeting, Cincinnati, OH, November 2005.
117. Moghe PV, **Roth CM**, Uhrich KE, “Graduate BME Curriculum on Integratively Engineered Biointerfaces”, Biomedical Engineering Society (BMES) Annual Meeting, Baltimore, MD, October 2005.
118. **Roth CM**, Nicolini AM, Dunn SM, “Component analyses of inflammatory gene expression in hepatocytes”, Biomedical Engineering Society (BMES) Annual Meeting, Baltimore, MD, October 2005.
119. Sundaram S, Lee LK, Oddo, J, Viriyayuthakorn S, **Roth CM**, “The role of vector in the dynamics of antisense activity”, Biomedical Engineering Society (BMES) Annual Meeting, Baltimore, MD, October 2005.
120. Lee LK, Williams CL, **Roth CM**, “Poly(propylacrylic acid) enhances cationic lipid-mediated delivery of antisense oligonucleotides”, Biomedical Engineering Society (BMES) Annual Meeting, Baltimore, MD, October 2005.
121. Dunham BM, Lee LK, Li Z, **Roth CM**, “A Comparison of the Cellular Effects of Antisense Oligonucleotides and Small Interfering RNAs”, Biomedical Engineering Society (BMES) Annual Meeting, Baltimore, MD, October 2005.
122. Lee LK, Dunham BM, Li Z, **Roth CM**, “A Comparison of the Cellular Effects of Antisense Oligonucleotides and Small Interfering RNAs”, Oligonucleotide Therapeutic Society, New York, NY, September 2005.
123. **Roth CM**, “Design and Delivery of Oligonucleotides for Antisense and RNA Interference to Mammalian Cells”, Biochemical Engineering XIV, Harrison Hot Springs, BC (Canada), July 2005.
124. Sundaram S, Viriyayuthakorn S, **Roth CM**, “Implications of Oligonucleotide Structure for the Design of Polymeric Oligonucleotide Delivery Vectors”, Mid-Atlantic Biochemical Engineering Conference, Piscataway, NJ, April 2005.
125. Burley MR, **Roth CM**, “Effects of Retinoic Acid on Hepatocyte Morphology and Function”, Mid-Atlantic Biochemical Engineering Conference, Piscataway, NJ, April 2005.
126. Nicolini A, Dunn SM, **Roth CM**, “Independent Component Analysis of Gene Expression Profiles in the Hepatic Inflammatory Response”, 31st Northeast Bioengineering Conference, Hoboken, NJ, April 2005.
127. Lee LK, Williams C, **Roth CM**, “Influence of a Neutralizing Polymer on Cationic Polymer Mediated Delivery of Antisense Oligonucleotides”, 31st Northeast Bioengineering Conference, Hoboken, NJ, April 2005.
128. Dasgupta A, Hughey R, Hart RP, Toner M, Larue L, **Roth CM**, Moghe PV, “Cadherin-based Biomolecular Strategies for Hepatic Differentiation of Murine Embryonic Stem Cells”, Symposium of the New Jersey Commission on Stem Cell Research, New Brunswick, NJ, November 2004.

129. **Roth CM**, “Molecular and Cellular Barriers Limiting the Effectiveness of Antisense Oligonucleotides”, American Institute of Chemical Engineers (AIChE) Annual Meeting, Austin, TX, November 2004.
130. Vitolo J, Ketonis C, **Roth CM**, “Bioinformatic Evaluation of Gene Regulation in Inflammatory Responses”, AIChE Annual Meeting, Austin, TX, November 2004.
131. Jayaraman A, Vitolo JL, Yarmush ML, **Roth CM**, “Systems biology approaches to understanding acute and chronic inflammatory responses in hepatocytes”, AIChE Annual Meeting, Austin, TX, November 2004.
132. Sundaram S, Shah N, **Roth CM**, “Implications of oligonucleotide structure for the design of polymeric oligonucleotide delivery vectors”, AIChE Annual Meeting, Austin, TX, November 2004.
133. Barnes BM, Lee LK, Li Z, **Roth CM**, “A Comparison of the Cellular Effects of Antisense Oligonucleotides and Short Interfering RNAs”, AIChE Annual Meeting, Austin, TX, November 2004.
134. Burley MR, **Roth CM**, “Effects of Retinoic Acid on Hepatocyte Morphology and Function”, AIChE Annual Meeting, Austin, TX, November 2004.
135. Katz, **Roth CM**, Dunn MG, “Multifactorial Approach to Gene Augmented Tissue Engineering”, Society for Biomaterials, Philadelphia, PA, October 2004.
136. **Roth CM** and Shreiber DI, “Undergraduate Scholarship in the Biomedical Engineering Honors Academy at Rutgers University”, Biomedical Engineering Society (BMES) Annual Meeting, Philadelphia, PA, October 2004.
137. Vitolo JL, Ketonis C, **Roth CM**, “Bioinformatic Evaluation of Gene Regulation in Inflammatory Responses”, Biomedical Engineering Society (BMES) Annual Meeting, Philadelphia, PA, October 2004.
138. Sundaram S, Shah N, **Roth CM**, “Implications of oligonucleotide structure for the design of polymeric oligonucleotide delivery vectors”, Biomedical Engineering Society (BMES) Annual Meeting, Philadelphia, PA, October 2004.
139. Barnes BM, Lee LK, Li Z, **Roth CM**, “A Comparison of the Cellular Effects of Antisense Oligonucleotides and Short Interfering RNAs”, Biomedical Engineering Society (BMES) Annual Meeting, Philadelphia, PA, October 2004.
140. Burley MR, **Roth CM**, “Effects of Retinoic Acid on Hepatocyte Morphology and Function”, Biomedical Engineering Society (BMES) Annual Meeting, Philadelphia, PA, October 2004.
141. Viriyayuthakorn S, Sundaram S, **Roth CM**, “Implications of Oligonucleotide Structure for the Design of Polymeric Oligonucleotide Delivery Vectors”, Biomedical Engineering Society (BMES) Annual Meeting, Philadelphia, PA, October 2004.
142. Gevertz, Dunn SM, **Roth CM**, “Understanding the Efficiency of Real-time PCR via a Novel Mathematical Model”, Biomedical Engineering Society (BMES) Annual Meeting, Philadelphia, PA, October 2004.
143. Nicolini A, Dunn SM, **Roth CM**, “Statistical Analysis of Gene Expression Data”, Biomedical Engineering Society (BMES) Annual Meeting, Philadelphia, PA, October 2004.
144. **Roth CM**, Vitolo JL, Jayaraman A, Yarmush ML, “Systems Biology Approaches to Understanding Acute and Chronic Inflammatory Responses in Hepatocytes”, American Society for Biochemistry and Molecular Biology (ASBMB) Annual Meeting, Boston, MA, June 2004.
145. Burley MR, **Roth CM**, “Control of Hepatocyte Differentiation through Gene Regulation”, American Institute of Chemical Engineers (AIChE) Annual Meeting, San Francisco, CA, November 2003.
146. Sundaram S, Shah N, **Roth CM**, “Effect of Oligonucleotide Structure on Oligoplex Properties”, American Institute of Chemical Engineers (AIChE) Annual Meeting, San Francisco, CA, November 2003.

147. Shah N, Sundaram S, **Roth CM**, "Study of Oligoplex Uptake in HepG2 Cells: Effect of Oligonucleotide Structure", Biomedical Engineering Society (BMES) Annual Meeting, Nashville, TN, October 2003.
148. **Roth CM**, "Integrating Molecular Thermodynamics and Systems Biology to Improve the Effectiveness of Antisense Oligonucleotides", 29th Northeast Bioengineering Conference, Newark, NJ, March 2003.
149. Sundaram S, **Roth CM**, "Effect of Oligonucleotide Structure on Behavior of Oligoplexes", 29th Northeast Bioengineering Conference, Newark, NJ, March 2003.
150. Walton SP, Jayaraman A, Stephanopoulos GN, Yarmush ML, **Roth CM**, "Characterization of Molecular and Cellular Events Limiting the Effectiveness of Antisense Oligonucleotides", Engineering in Medicine Society/Biomedical Engineering Society (EMBS/BMES) Meeting, Houston, TX, October 2002.
151. Hamed SS, Burley MR, **Roth CM**, "Gene Expression Changes in Serum-deprived Hepatocytes", The 6th New Jersey Symposium on Biomaterials Science, Somerset, NJ, October 2002.
152. Jayaraman A, Yarmush ML, **Roth CM**, "Dynamics of Gene and Protein Expression in Hepatocytes under Stress: Comparison of Cell Culture, Organ, and Whole Body Models of Inflammation", American Institute of Chemical Engineers (AIChE) Annual Meeting, Reno NV, November 2001.
153. Walton SP, Jayaraman A, Stephanopoulos GN, Yarmush ML, **Roth CM**, "Prediction of Antisense Oligonucleotide Binding Affinity", AIChE Annual Meeting, Reno NV, November 2001.
154. Jayaraman A, Yarmush DM, Yarmush ML, **Roth CM**, "Expression Profiling of the Acute-phase Response", American Burn Association Annual Meeting, Boston, MA, April 2001.
155. Jayaraman A, Yarmush DM, Yarmush ML, **Roth CM**, "Expression Profiling of Inflammatory Responses in Hepatocytes", American Chemical Society (ACS) National Meeting, San Diego, CA, March 2001.
156. Walton SP, Jayaraman A, Stephanopoulos GN, Yarmush ML, **Roth CM**, "Thermodynamics and Kinetics of Oligonucleotide Binding", ACS National Meeting, San Diego, CA, March 2001.
157. Jayaraman A, Yarmush ML, **Roth CM**, "Genomic and Proteomic Analysis of Stress Responses in Hepatocytes", AIChE Annual Meeting, Los Angeles, CA, November 2000.
158. Walton SP, Jayaraman A, Stephanopoulos GN, Yarmush ML, **Roth CM**, "Selection and Evaluation of Antisense Oligonucleotide Therapeutics", AIChE Annual Meeting, Los Angeles, CA, November 2000.
159. Roy P, **Roth CM**, Margolies MN, Yarmush ML, "The Role of aromatic amino acids in the high pressure association of antigen-antibody complexes", AIChE Annual Meeting, Los Angeles, CA, November 2000.
160. Jayaraman A, Yarmush ML, **Roth CM**, "Dynamics of Stress Response mRNA and Protein Expression in Rat Hepatocytes", ACS National Meeting, San Francisco, CA, March 2000.
161. Walton SP, Jayaraman A, Stephanopoulos GN, Yarmush ML, **Roth CM**, "Prediction of Antisense Oligonucleotide Binding Affinity", ACS National Meeting, San Francisco, CA, March 2000.
162. **Roth CM** (Speaker), Roy P, Margolies MN, Yarmush ML, "Effect of Pressure on the Complex Between Digoxigenin and Antibody 26-10", ACS National Meeting, San Francisco, CA, March 2000.
163. Walton SP (Speaker), Jayaraman A, Stephanopoulos GN, Yarmush ML, **Roth CM**, "Rational Selection of Antisense Oligonucleotide Therapeutics", AIChE National Meeting, Dallas, TX, November 1999.
164. Walton SP, Jayaraman A, Stephanopoulos GN, Yarmush ML, **Roth CM**, "Prediction of Antisense Oligonucleotide Binding Affinity and Activity in Cell Culture", EMBS/ BMES Meeting, Atlanta, GA, October 1999.

165. Walton SP, Jayaraman A, Stephanopoulos GN, Yarmush ML, **Roth CM**, "Directed Discovery and Analysis of Antisense Oligonucleotides" (poster), Biochemical Engineering XI, Park City, UT, July 1999.
166. Yarmush ML and **Roth CM**, "Molecular Design and Delivery of Antisense Oligonucleotides", Summer Bioengineering Conference, Big Sky, MT, June 1999.
167. Roy P, **Roth CM**, Yarmush ML, "Effect of Pressure on Antigen-Antibody Binding: Ionic Strength and Temperature Studies", AIChE National Meeting, Miami, FL, November 1998.
168. Rajur SB, **Roth CM**, Morgan JR, Yarmush ML. "Synthetic Conjugates of *N*-acetylgalactoside and Oligonucleotides for Use as Molecular Therapeutics", ACS National Meeting, Boston, MA, August 1998.
169. Roy P, **Roth CM**, Yarmush ML, "Antigen-Antibody Interactions under High Hydrostatic Pressures: The Effect of Ionic Strength and Temperature Perturbations", ACS National Meeting, Boston, MA, August 1998.
170. Sundaram S, Yarmush ML, and **Roth CM**, "Pressure-induced Dissociation of Antigen-Antibody Complexes", AIChE Annual Meeting, Los Angeles, CA, November 1997.
171. **Roth CM**, Morgan JR, and Yarmush ML, "Interactions Among Inflammatory Cytokines and their Receptors", AIChE Annual Meeting, Los Angeles, CA, November 1997.
172. Le Doux JM, Davis HE, Andreadis ST, **Roth CM**, Morgan JR, Yarmush ML, "Evaluation of Extracellular Events in Retrovirus Mediated Gene Transfer", BMES Meeting, San Diego, CA, October 1997.
173. **Roth CM**, Rajur SB, Morgan JR, Yarmush ML, "Targeted Antisense Modulation of Inflammatory Cytokine Receptors", BMES Meeting, San Diego, CA, October 1997.
174. **Roth CM**, Rajur SB, Reiken SR, Morgan JR, Yarmush ML, "Receptor Targeted Antisense for Modulation of Inflammatory Responses", Nucleic Acids: Integrating Molecular Diagnosis and Therapy, San Diego, CA, November 1996.
175. **Roth CM**, Morgan JR, Yarmush ML, "Improving the Effectiveness of Antisense Oligonucleotides", AIChE Annual Meeting, Chicago, IL, November 1996.
176. de Phillips PD, **Roth CM**, and Lenhoff AM, "Quantitative Characterization of Protein Ion-Exchange Retention, and Implications for Stationary-Phase Selection", ACS National Meeting, New Orleans, LA, March 1996.
177. **Roth CM**, Lu XM, Le Doux JM, Morgan JR, Yarmush ML, "Asialoglycoprotein Linked Antisense DNA Blocks In Vitro Expression of the IL-6 Signal Transducer in Hepatocytes", AIChE Annual Meeting, Miami, FL, November 1995.
178. **Roth CM**, de Phillips PD, and Lenhoff AM, "A Mechanistic Model of Retention in Protein Ion Exchange Chromatography", AIChE Annual Meeting, Miami, FL, November 1995.
179. **Roth CM**, Unger KK, and Lenhoff AM, "Manipulation of Ion Exchange Retention via Charge and Nonionic Surface Properties", Eighteenth International Symposium on Column Liquid Chromatography, Minneapolis, MN, May 1994.
180. **Roth CM**, Johnson CA, and Lenhoff AM, "Protein Ion-Exchange Chromatography - A Molecular Biophysics View", ACS National Meeting, San Diego, CA, March 1994
181. **Roth CM** and Lenhoff AM, "Electrostatic and van der Waals Contributions to Protein Adsorption", Mid-Atlantic Biochemical Engineering Consortium, Philadelphia, PA, March 1994.

182. **Roth CM** and Lenhoff AM, "Electrostatic and van der Waals Contributions to Protein Adsorption", 8th International Conference on Surface and Colloid Science, Adelaide, South Australia, Australia, February 1994.
183. **Roth CM**, Neal BL, and Lenhoff AM, "Colloidal Modeling of Proteins", AIChE Annual Meeting, St. Louis, MO, November 1993
184. Haggerty L, **Roth CM**, Yoon BJ, and Lenhoff AM, "Insights into Protein Ion-Exchange Retention through Molecular Modeling of Protein Adsorption", ACS National Meeting, Denver, CO, March 1993.
185. **Roth CM**, Wu P, and Lenhoff AM, "On the Use of Molecular Structure to Predict Chromatographic Retention", AIChE Annual Meeting, Miami, FL, November 1992.
186. **Roth CM** and Lenhoff AM, "Towards the Prediction of Protein Chromatographic Retention" (poster), Sixteenth International Symposium on Column Liquid Chromatography, Baltimore, MD, June 1992.
187. **Roth CM** and Lenhoff AM, "Prediction of Retention in Ion-Exchange Chromatography", ACS National Meeting, San Francisco, CA, April 1992.
188. **Roth CM** and Lenhoff AM, "Electrostatic Contributions to Protein Adsorption at Low Surface Coverages", AIChE Annual Meeting, Los Angeles, CA, November 1991.
189. **Roth CM** and Lenhoff AM, "Molecular Electrostatics Computations as a Predictor of Linear Protein Adsorption Equilibria," Eleventh International Symposium on HPLC of Proteins, Peptides, and Polynucleotides, Washington, D.C., October 1991.

Invited Presentations:

1. "Taking Charge of Drug Delivery: Polyelectrolyte Nanomedicines for Oligonucleotides and Antibiotics," Laboratory for Biomaterials Research, Rutgers University, via Zoom, June 2020.
2. "Engineered Nanomedicines to Overcome Physiological Barriers to Oligonucleotide and Peptide Delivery," Missouri University of Science & Technology, Rolla, MO, October 2017.
3. "Nanomedicines for Oligonucleotide Delivery: Applications to Cancer," Cancer Pharmacology Research Program, Rutgers Cancer Institute of New Jersey, New Brunswick, NJ, April 2017.
4. "Multifunctional Nanomedicines for Overcoming Multiscale Barriers to Oligonucleotide Delivery," Targeted Therapeutics and Translational Nanomedicine Center, University of Pennsylvania, Philadelphia, PA, January 2016.
5. "Overcoming Systemic and Cellular Barriers to Oligonucleotide Delivery", The 12th New Jersey Symposium on Biomaterials Science, Somerset, NJ, October 2014.
6. "Nanocomplexes for Oligonucleotide Delivery," Roche Corporation, Nutley, NJ, January 2010.
7. "Biomaterials and Tissue Engineering," Southeast Biomedical Engineering Career Conference, Washington, DC, October 2009.
8. "Polyelectrolyte Complexes for Delivery of Oligonucleotides", RNAi World Congress, Boston, MA, May 2009.
9. "Computational Modeling of Liver Function", The Second Annual Systems Toxicology Symposium, Environmental Bioinformatics and Computational Toxicology Center, Piscataway, NJ, April 2008.
10. "Engineering Intracellular Delivery of Oligonucleotides", Enzon Corporation, Piscataway, NJ, January 2008.

11. "Rational Design of Polymeric Vectors for Intracellular Delivery of Oligonucleotides", Materials Research Society Symposium, Boston, MA, November 2007.
12. "Engineering Intracellular Delivery of Oligonucleotides", Roche Corporation, Nutley, NJ, October 2007.
13. "Molecular Design and Cellular Delivery of Oligonucleotides", Department of Biomedical Engineering, City College of New York, New York City, NY, March 2007.
14. "Molecular Design and Cellular Delivery of Oligonucleotides", Pfizer Corporation, February 2007.
15. "Molecular Design and Cellular Delivery of Oligonucleotides", Chromocell Corporation, December 2005.
16. "Molecular and Materials Design for Cellular Delivery of Oligonucleotides", Materials Research Society Symposium, Boston, MA, December 2005.
17. "Molecular Design and Cellular Delivery of Oligonucleotides", Department of Chemical Engineering, University of Delaware, Newark, DE, November 2005.
18. "Bionanotechnology", Center for Advanced Information Processing Annual Review, Piscataway, NJ, March 2003.
19. "Computational Design of Nucleic Acid Sequences and Delivery Vectors", The 6th New Jersey Symposium on Biomaterials Science, Somerset, NJ, October 2002.
20. "Similarities and Differences between Antisense and Gene Delivery", The International Working Group on Non-viral Gene Delivery, Somerset, NJ, May 2002.
21. "Non-viral Gene Delivery", New Jersey Center for Biomaterials Industrial Board Meeting, Piscataway, NJ, March 2002.
22. "Genomic and Proteomic Analysis of Stress Responses in Hepatocytes", The 5th New Jersey Symposium on Biomaterials Science, Somerset, NJ, November 2000.
23. "Molecular Bioengineering of Inflammatory Responses", Department of Chemical Engineering, Northeastern University, Boston, MA, March 2000.
24. "Molecular Bioengineering of Inflammatory Responses", Department of Chemical Engineering, University of Connecticut, Storrs, CT, March 2000.
25. "Molecular Bioengineering of Inflammatory Responses", Departments of Chemical and Biomedical Engineering, University of Rochester, Rochester, NY, February 2000.
26. "Molecular Bioengineering of Inflammatory Responses", Center for Engineering in Medicine and Shriners Burns Hospital, Boston, MA, February 2000.
27. "Molecular Bioengineering of Inflammatory Responses", Department of Chemical and Biochemical Engineering, Rutgers University, Piscataway, NJ, January 2000.
28. "Targeted Antisense Modulation of Inflammatory Responses", Harvard-MIT Division of Health Sciences & Technology, Cambridge, MA, October 1996.
29. "Targeted Antisense Modulation of Inflammatory Responses", Department of Chemical and Biochemical Engineering, University of Maryland, Baltimore County, Baltimore, MD, April 1996.
30. "Electrostatic and van der Waals Contributions to Protein Adsorption", Department of Chemical Engineering, University of Maryland, College Park, MD, April 1996.

31. "Targeted Antisense Modulation of Inflammatory Responses", Department of Bioengineering, University of Toledo, Toledo, OH, March 1996.
32. "Targeted Antisense Modulation of Inflammatory Responses", Department of Chemical Engineering, Yale University, New Haven, CT, March 1996.
33. "Electrostatic and van der Waals Contributions to Protein Adsorption", Department of Chemical Engineering, New Jersey Institute of Technology, Newark, NJ, October 1994.
34. "Electrostatic and van der Waals Contributions to Protein Adsorption", Shriners Burns Hospital, Boston, MA, August 1994.
35. "Electrostatic and van der Waals Contributions to Protein Adsorption", Department of Chemical Engineering, City University of New York, New York, NY, March 1994.
36. "Electrostatic and van der Waals Contributions to Protein Adsorption", Department of Chemical and Biochemical Engineering, Rutgers University, Piscataway, NJ, February 1994.
37. "Electrostatic and van der Waals Contributions to Protein Adsorption", Department of Chemical Engineering, Columbia University, New York, NY, January 1994.
38. "Electrostatic and van der Waals Contributions to Protein Adsorption", Department of Chemical and Biochemical Engineering, University of Maryland, Baltimore County, Baltimore, MD, August 1993.

Patent Activity:

1. Naczynski DJ, Tan M-C, Riman RE, **Roth CM**, Moghe PV, "Multifunctional Infrared Emitting Composites (CIP)," U.S. application number 17/234,669, filed 19-Apr-2021.
2. Naczynski DJ, Tan M-C, Riman RE, **Roth CM**, Moghe PV, "Multifunctional Infrared Emitting Composites (CIP)," U.S. application number 17/079,733, filed 26-Oct-2020.
3. Naczynski DJ, Tan M-C, Riman RE, **Roth CM**, Moghe PV, "Multifunctional Infrared Emitting Composites (CIP)," U.S. Patent number 10,814,017, filed 9-April 2019; issued 27-Oct-2020.
4. Devore DI, **Roth CM**, "Graft Copolymer Polyelectrolyte Complexes for Drug Delivery (CIP)," U.S. Patent number 9,789,194, filed 29-Feb-2016; issued 17-Oct-2017.
5. Devore DI, **Roth CM**, "Graft Polymers for Enhanced Intracellular Delivery of Antisense Molecules (divisional)," U.S. Patent number 9,574,041, filed 23-Feb-2015; issued 21-Feb-2017.
6. Devore DI, **Roth CM**, "Graft Copolymer Polyelectrolyte Complexes for Drug Delivery," U.S. Patent number 9,271,933, filed 14-Mar-2013; issued 01-March-2016.
7. Uhrich KE, Sparks SM, Gu L, Harmon A, **Roth CM**, Federici CL, "Amphiphilic Macromolecules for Nucleic Acid Delivery," U.S. Patent number 8,846,850 B2, filed 12-Feb-2012; issued 30-Sept-2014.
8. Naczynski DJ, Tan M-C, Riman RE, **Roth CM**, Moghe PV, "Multifunctional Infrared Emitting Composites," U.S. Patent number 10,286,088 filed 7-May 2012; issued 14-May 2019.
9. Devore DI, **Roth CM**, "Graft Polymers for Enhanced Intracellular Delivery of Antisense Molecules," U.S. Patent number 8,962,757, filed 26-Nov-2008; issued 24-Feb-2015.

Research Funding

Current Funding

Exploratory Research Grant (1R21 AI151746) NIH <i>Surface Active Polyelectrolyte Nanomedicine for Treatment of Lung Infections in Cystic Fibrosis</i> Role: Principal Investigator	01/24/20-12/31/23 \$420,025
Research Experiences for Undergraduates (EEC-1950509) NSF <i>REU Site: Cellular Bioengineering - From Biomaterials to Stem Cells</i> Role: Participating Faculty (PI: D. Shreiber)	03/01/21-02/29/24 \$428,840

Past Funding (Rutgers University)

Equipment Leasing Fund The State Of New Jersey <i>Acquisition of a DNA Microarrayer and Scanner</i> Role: Principal Investigator (sole)	01/01/02-12/31/02 \$133,648
Undergraduate Research Forum Award New Jersey Center for Biomaterials <i>Correlating Changes in Gene Expression with Function in Cultured Hepatocytes</i> Role: Principal Investigator (student: Salaheldin Hamed)	06/01/02-12/31/02 \$1,000
Rutgers Undergraduate Research Fellow <i>Transcriptional Control of Albumin Expression in Hepatocytes</i> Role: Principal Investigator (student: Kevin Smith)	07/01/02-6/30/03 \$1,500
Transitional Career Award The Whitaker Foundation <i>Effect of DNA Structure on Polymer-DNA Complex Formation and Delivery</i> Role: Principal Investigator (sole)	04/01/02-03/31/03 \$70,940
Charles and Johanna Busch Memorial Award <i>Molecular Specificity and Cellular Dynamics of Antisense Oligonucleotides</i> Role: Principal Investigator (sole)	07/01/02-06/30/04 \$20,000
Rutgers Dialogue Grant <i>The Biomedical Engineering Honors Academy: An Undergraduate Community Of Research Scholarship</i> Role: Principal Investigator (sole)	01/01/03-06/30/03 \$7,000
Rutgers Undergraduate Research Fellow <i>Intracellular Delivery Mechanisms of Polymer/Antisense Oligonucleotide Complexes</i> Role: Principal Investigator (student: Neha Shah)	07/01/03-6/30/04 \$1,500
Rutgers Undergraduate Research Fellow <i>Bioinformatic Prediction of Inflammatory Gene Regulation</i> Role: Principal Investigator (student: Constantinos Ketonis)	07/01/03-6/30/04 \$1,500
Rutgers Undergraduate Research Fellow <i>Quantitative analysis of intracellular trafficking of oligonucleotides</i> Role: Principal Investigator (student: Sandra Viriyayuthakorn)	07/01/04-6/30/05 \$1,500
R01 GM065913-03S1 NIH - Research Supplement for Underrepresented Minorities <i>Efficient and Selective Delivery of Oligonucleotides</i> Role: Principal Investigator (sole)	08/01/04-07/31/05 \$46,028

Type G Starter Grant American Chemical Society/Petroleum Research Fund <i>Interplay of Colloidal and Specific Interactions in Nanoparticle Adsorption</i> Role: Principal Investigator (sole)	09/01/03-8/31/05 \$35,000
Academic Excellence Fund Rutgers University <i>A BIACore Biosensor for Biomolecular Interactions</i> Role: co-PI (PI: L. Hu)	01/01/05-12/31/05 \$250,000
REU Supplement NSF <i>Molecular Systems Bioengineering</i> Role: Principal Investigator (sole)	04/01/03-03/31/05 \$24,000
Rutgers Undergraduate Research Fellow <i>Gene Regulation in Hepatocytes</i> Role: Principal Investigator (student: David Wayman)	07/01/05-6/30/06 \$2,000
Merck Research Laboratories <i>MRL/BPR&D Undergraduate Research Grants Program (BME)</i> Role: Principal Investigator	09/01/05-08/31/08 \$16,350
Charles and Johanna Busch Memorial Award <i>Inhibition of DNA Repair Using Short Interfering RNA in Glioma Cells</i> Role: Principal Investigator (sole)	07/01/06-06/30/08 \$25,000
Bioengineering Research Grant (5 R01 GM65913) NIH <i>Efficient and Selective Delivery of Oligonucleotides</i> Role: Principal Investigator (sole)	08/01/02-07/31/08 \$1,057,687
CAREER Award (BES-0238617) NSF <i>Molecular Systems Bioengineering</i> Role: Principal Investigator (sole)	04/01/03-03/31/09 (NCE) \$400,000
IGERT (DGE-0333196) NSF <i>IGERT: Integrative Education and Research on Biointerfacial Engineering</i> Role: Investigator (PI: P. Moghe)	10/01/03-08/31/08 \$3,600,000
Metabolic Engineering (BES-0519563) NSF <i>Molecular Network Control of Hepatocyte Metabolism</i> Role: Principal Investigator (with 3 co-PIs)	09/15/05-08/31/09 (NCE) \$998,659
Quantitative Systems Biotechnology (BES-0424968) NSF <i>QSB: Experimental and Computational Studies to Optimize Hepatocyte Function</i> Role: co-PI (PI: M. Ierapetritou)	09/01/04-08/31/09 (NCE) \$498,363
IGERT (DGE-0504497) NSF <i>IGERT: NanoPharmaceutical Engineering and Science</i> Role: Investigator (PI: F. Muzzio)	10/01/05-08/31/10 \$3,500,000
Aresty Center for Undergraduates	09/01/11-12/31/11

<i>Isolation and Characterization of Stem Cells in Glioblastoma Cell Lines</i> Role: PI (Mentor to Molly Carroll)	\$2,300
Graduate Fellowship Program NJCCR <i>Novel Carrier for Antisense Cancer Therapeutics</i> Role: PI/Mentor (Fellow: Lavanya Peddada)	12/01/09-11/30-11 \$50,000
Aresty Center for Undergraduates <i>Isolation and Characterization of Stem Cells in Glioblastoma Cell Lines</i> Role: PI (Mentor to Molly Carroll)	01/01/12-05/31/12 \$1,000
Research Grant (2R01 EB008278-07) NIH <i>Efficient Cellular Delivery of Oligonucleotides</i> Role: Principal Investigator (with 2 co-PIs)	07/01/09-06/30/12 \$687,550
Research Grant (R01GM082974) NIH Bioinformatics Analysis of Control Mechanisms of Hypermetabolism Role: Co-PI (PI: I. Androulakis)	09/01/08-06/30/12 \$1,200,000
Nanoscale Interdisciplinary Research Teams NSF <i>NIRT: Ligand Nanodisplay for Cellular Internalization and Super-Activation</i> Role: co-PI (PI: P. Moghe)	09/01/06-08/31/12 \$1,000,000
Research Experiences for Undergraduates (EEC-085131) NSF <i>REU Site: Cellular Bioengineering - From Biomaterials to Stem Cells</i> Role: Principal Investigator (with 1 co-PI)	09/01/09-08/31/13 \$300,000
Peer Reviewed Orthopedic Research Program (W81XWH-10-2-0139) DoD <i>Integrated Proteomic Analysis and siRNA Therapy for Treatment of Heterotopic Ossification</i> Role: PI (with 4 co-PIs)	09/30/10-10/29/13 \$509,590
Research Grant (1R21EB015169) NIH <i>Albumin-Encapsulated Rare Earth Nanoprobes for Multifunctional Tissue Imaging</i> Role: Multiple Principal Investigator (with MPIs Moghe & Riman)	04/01/12-03/31/15 \$407,047
Research Experiences for Undergraduates (EEC-1262924) NSF <i>REU Site: Cellular Bioengineering - From Biomaterials to Stem Cells</i> Role: co-PI (PI: D. Shreiber)	03/01/13-02/28/17 \$361,288
Research Grant (ISFP 6-16) New Jersey Health Foundation <i>In vivo Efficacy Study of Graplon/antisense in Tumor Growth Control</i> Role: Principal Investigator (co-PI D. Devore)	06/27/16-12/31/18 \$50,000
Research Grant (1R01EB018378) NIH <i>Rare Earth Nanoprobes for Optical Imaging and Disease Tracking</i> Role: Multiple Principal Investigator (with MPIs Moghe & Riman)	04/15/14-03/31/18 \$2,079,753
Research Grant (ISFP 15-18)	12/23/17-8/31/19

New Jersey Health Foundation
Smart Polyelectrolyte Nanomedicine for Cystic Fibrosis Pneumonia
 Role: Principal Investigator (co-PI D. Devore) \$50,000

Research Experiences for Undergraduates (EEC-1559968) 10/01/16-09/30/21
 NSF \$412,491
REU Site: Cellular Bioengineering - From Biomaterials to Stem Cells
 Role: co-PI (PI: D. Shreiber)

Past Funding (Massachusetts General Hospital/Shriners Burns Hospital)

Biomedical Engineering Research Grant 01/01/98-12/31/00
 The Whitaker Foundation \$194,274 (total costs)
Molecular and Cellular Engineering of Antisense Therapeutics
 Role: Principal Investigator (sole)

Project 8510 1/1/99-12/31/01
 Shriners Hospitals for Children \$318,960
The Role of IGF Binding Proteins in Burn-induced Hypermetabolism and Wasting
 Role: Principal Investigator (with 1 co-PI)

Project 8460 1/1/99-12/31/01
 Shriners Hospitals for Children \$236,674
Research Computer Facility
 Role: Principal Investigator (with 1 co-PI)

Project 8570 1/1/00-12/31/02
 Shriners Hospitals for Children \$465,747
Molecular Mechanisms of Albumin Regulation Under Inflammatory Stress
 Role: Co-PI (PI: M. Yarmush)

BES 9910186 09/01/00-8/31/03
 NSF \$420,781
Engineering and Analysis of Pressure-Sensitive Antibodies
 Role: Co-PI (PI: M. Yarmush)

Teaching

University of Delaware

1994 Instructor in "Heat and Mass Transfer" (CHEG 342)
 Enrollment: 22 students

Massachusetts General Hospital, Center for Engineering in Medicine

1996-1998 Lecturer and laboratory instructor for "Laboratory in Molecular and Cellular
 Sciences" (CEM 010), 3 lectures + 3 lab sessions
 Cumulative enrollment: 48 students

1997 Lecturer and administrative coordinator for "Case Studies in Bioengineering" (CEM
 030)
 Enrollment: 10 students

Harvard-MIT Division of Health Science and Technology

1997-1999 Organizer for "Biomedical Engineering Seminar: Section on Molecular and Cellular
 Processes" (HST 590),
 Enrollment: ~30 students/year

- 1999 Lecturer in “Tutorial in Medical Engineering and Medical Physics” (HST 596), 1 lecture
Enrollment: 10 students
- 2001 Lecturer in “Laboratory in Molecular and Cellular Sciences” (HST 505), 3 lectures and 3 laboratory sessions
Enrollment: 18 students

Rutgers University

- 2001 Instructor, “Enzyme Engineering” (155:534)
Enrollment: 5 students
- 2001-2004, (6x)
2022-23 Instructor, “Biomedical Thermodynamics and Kinetics” (125:314)
Cumulative enrollment: 342 students
- 2001-2002 (2x) Instructor, “Chemical Engineering Analysis I” (155:201)
Cumulative enrollment: 80 students
- 2002 Co-instructor, “Introduction to Biomedical Engineering” (125:201), 8 lectures
Enrollment: 85 students
- 2003-2008 (6x) Co-instructor, “BME Measurements and Analysis Laboratory” (125:314), 2 lectures + laboratories
Cumulative enrollment: ~400 students
- 2004-2007 (4x) Instructor, “Advanced Chemical Engineering Thermodynamics” (155:511)
Cumulative enrollment: 55 students
- 2005-2010 (4x) Instructor, “Integrative Molecular and Cellular Bioengineering” (125:584)
Cumulative enrollment: 39 students
- 2008 Lead Instructor, “BME Measurements and Analysis Laboratory” (125:315)
Enrollment: 72 students
- 2008 Instructor, “Preparing Future Faculty II” (125:632)
Enrollment: 11 students
- 2010 Instructor, “Preparing Future Faculty I” (125:631)
Enrollment: 9 students
- 2009, 2011 (2x) Instructor, “Pharmaceutical Organic Nanotechnology (Drug Delivery)” (155:544)
Cumulative enrollment: 29 students
- 2009, 2011 (2x) Instructor, “Nanotechnology in Cancer” (01:090:101)
Cumulative enrollment: 40 students
- 2009-2011 (3x) Instructor, “Chemical Engineering Kinetics” (155:411)
Cumulative enrollment: 183 students
- 2012-2021 (8x) Instructor, “Drug Delivery Principles and Applications” (125:590/155:544)
Cumulative enrollment: 229 students
- 2012-14 (3x) Instructor, “Introduction to Biochemical Engineering” (155:411)
Cumulative enrollment: 269 students
- 2013-18 (6x) Instructor, “Teaching in the Engineering Curriculum” (155:605)

	Cumulative enrollment: 60 students
2016-17 (2x)	Instructor, “Biological Foundations of Chemical Engineering” (155:210) Cumulative enrollment: 234 students
2018-20 (2x)	Instructor, “Opportunities and Challenges in Nanomedicine” (090:101) Cumulative enrollment: 36 students
2019-20 (2x)	Instructor, “Biochemical Engineering” (155:531) Cumulative enrollment: 38 students
2021	Instructor, “Clinical Practicum” (125:628) Enrollment: 36 students
2021	Co-Instructor, “Integrative Molecular and Cellular Bioengineering” (125:584) Enrollment: 33 students

Teaching Workshops Attended (Rutgers)

2022	OTEAR: School & Department Customization of SIRS for Actionable Data
2021	CTAAR: Remote/Online Instruction in Spring 2021: What We Learned
2020	CTAAR: Quantitative Disciplines Online Teaching Roundtable
2020	CTAAR: Zoom Integration with Canvas Training
2020	CTAAR: Peer Review of Online Teaching
2020	CTAAR: Options for Giving your Remote Final Exam
2018	TLT: Using Kaltura in Canvas

Advising Responsibilities

Visiting Scientist

Former Visiting Scientists

Michael Masterson-Smith (Ph.D., UCLA), April 2013 - October 2013
Isolation and Characterization of Glioma Stem Cells
Current position: Chief Strategist, Creative Sciences, Inc.

Current Visiting Scientists

David Devore (Ph.D. Rutgers), June 2021-present
Polyelectrolyte Surfactants for Nanomedicine
Concurrent position: CEO, Graplon Technologies, LLC

Priya Chary (M.S. Rutgers), September 2023-present
Nanomedicine for Treatment of Biofilm Infections

Postdoctoral Fellows

Former postdocs

Arul Jayaraman (Ph.D., U. California, Irvine), June 1998 - December 2000
Measuring and Manipulating Gene Expression in Hepatocytes
Current position: Professor, Chemical Engineering, Executive Associate Dean, Texas A&M University

Li Kim Lee (Ph.D., University College of London), January 2003-December 2006
Efficient and Selective Delivery of Antisense Oligonucleotides
Current position: Analytics Manager, Condé Nast International

Abraham Joy (Ph.D., Tulane) (co-supervised with J. Kohn)
Novel PPAA-Jeffamine Graft Copolymers for Oligonucleotide Delivery
Current position: Professor and Chair of Bioengineering, Northeastern University

Vidya Iyer (Ph.D., Iowa State U.) (co-supervised with M. Ierapetritou), 2007-2010
Integrated Measurement and Modeling of Hepatic Metabolism
Current position: CMC Technical Manager, Bristol-Myers Squibb

Swati Mishra (Ph.D., U. Massachusetts), December 2010 - October 2012
Silencing Genes Driving the Osteogenic Phenotype in Heterotopic Ossification
Current position: Research Scientist, Oregon Health Sciences University

Ritu Goyal (Ph.D., Inst. Genomics & Integrative Biology, Delhi, India), December 2015-February 2017
Tunable Graft Copolymers for Delivery of Peptides and Oligonucleotides
Current position: Project Manager, CytoSorbents, Inc.

Graduate Students

Former students

S. Patrick Walton, Chemical Engineering (MIT), Sc.D. 2002
Thermodynamics and Kinetics of Antisense Oligonucleotide Hybridization
Current position: Associate Professor, Chemical Engineering, Michigan State University

Sumati Sundaram, Chemical and Biochemical Engineering, Ph.D. 2007
Interplay of Polymer and Oligonucleotide Properties on the Effectiveness of Antisense Oligonucleotides
Current position: Director of Cell Biology, Biostage

Hong Yang, Chemical and Biochemical Engineering, Ph.D. 2010
Design and Analysis of Amino Acid Supplementation in Hepatocyte Culture Using In Vitro Culture and Mathematical Modeling
(co-supervised with M. Ierapetritou)
Current position: Regulatory CMC Reviewer, FDA

Salaheldin Hamed, Biomedical Engineering, Ph.D. 2010
Mechanisms of Chemotherapeutic Resistance in Glioma: Mathematical Modeling and Gene Expression Profiling
Current position: Clinical Pharmacology, FDA

Carolyn Waite, Chemical and Biochemical Engineering, Ph.D. 2011
Engineering tumor-targeted poly(amidoamine) (PAMAM) dendrimers for improved penetration and cellular delivery of short-interfering RNA (siRNA) through solid tumors
Current position: Associate Director, Oncology Scientific Engagement, Daiichi Sankyo

Lavanya Peddada, Biomedical Engineering, Ph.D. 2011
Design of Poly(alkylene oxide) Graft Copolymer Chemistries for Improved Antisense Delivery
Current position: Senior Scientist, Janssen Pharmaceuticals (Johnson & Johnson)

Dominik Naczynski, Chemical and Biochemical Engineering, Ph.D. 2012
Engineering of Albumin Nanoparticles for Cancer Cell Imaging and Drug Delivery
(co-supervised with P. Moghe)

Current position: Senior Vice President, Tavistock Life Sciences

Tsirisoa (Aina) Andrianarijaona, Molecular BioSciences, Ph.D. 2013
Dynamics of Signaling in Hepatocyte Adhesion and Effects on Function
Current position: Lecturer, Rowan University

Leora Nusblat, Biomedical Engineering, Ph.D. 2014
Cross Talk between Macrophages and Glioma Stem Cells
Current position: Course facilitator, Hofstra Medical School

Margot Zevon, Biomedical Engineering, Ph.D. 2016
SWIR Emitting Rare Earth Albumin Nanocomposites for Targeted Imaging, Molecular Phenotyping, and Improved Drug Delivery to Tumors
(co-supervised with P. Moghe)
Current position: Senior Scientist, Abcam

Xiaowan Li, Chemical & Biochemical Engineering, M.S. January 2017
Physiologically Based Pharmacokinetic Modeling of Nanoparticles in Rodents
Current position: Chemist, Soma Labs

Harini Kantamneni, Chemical & Biochemical Engineering, Ph.D. 2019
Short Wave Infrared Multicolor Nanoprobe Based Diagnostics for Distal Site Metastatic Surveillance and Molecular Phenotyping
(co-supervised with P. Moghe)
Current position: Scientist, bluebird bio

Pooja Patel, Biomedical Engineering, M.S. 2019
Antimicrobial Nanostructured Hydrogel Wound Dressing for the Treatment of Chronic Wounds
Current position: Associate Scientist, Pfizer

Jessica McDonald, Chemical & Biochemical Engineering, M.S. 2019
“Smart” Aerosolized Nanomedicine for Cystic Fibrosis Pneumonia

Joseph Farag, Biomedical Engineering, M.S. May 2022
A Mechanistic Model to Study Biofilm Structure and Metabolism in Antibiotic Activity

William Xu, Biomedical Engineering, M.S. October 2022
Polyelectrolyte Surfactant Nanomedicine for Cystic Fibrosis Lung Infection

Ingy Razouk, Biomedical Engineering, M.S. October 2023
Nebulization of Polyelectrolyte Surfactant Nanomedicine for Treatment of Lung Bacterial Infections

Christine Shi, Biomedical Engineering, M.S. January 2024
Polyelectrolyte Surfactant Cationic Antimicrobial Nanospray Formulation for the Treatment of Biofilm Wound Infections

Current students

Yadiel Varela-Soler, Chemical & Biochemical Engineering, Ph.D. expected October 2025
Nanomedicine for Biofilm Lung Infections

Post-baccalaureate Trainee

Charity Williams, Chemical and Biochemical Engineering, Sept. 2004-Sept. 2005
Efficient and Selective Delivery of Antisense Oligonucleotides

Laboratory Technician

Michael Holloway (Ph.D.), February 2017-August 2018
Tunable Graft Copolymers for Delivery of Peptides and Oligonucleotides

Non-thesis Masters Researchers

Brandee Barnes, Chemical and Biochemical Engineering, M.S. 2005
Cellular Effectiveness of Antisense Oligonucleotides and Short Interfering RNAs
Current position: Director of Brand Engagement, Hilton Supply Management

Jeffrey Ly, Biomedical Engineering, M.S. 2007
Delivery of Oligonucleotides Using a pH-sensitive Polymer
Current position: Principal Scientist, Merck

Stephen Guzikowski, Chemical and Biochemical Engineering, M.S. 2008
Coupling of Xenobiotic and Central Metabolism in Hepatocytes
(co-supervised with M. Ierapetritou)
Current position: Research Scientist, Bristol-Myers Squibb

Sana Yousaf, Business and Science (Chem. Eng. Concentration), M.B.S., 2015
Gene silencing of c-src towards Breast Cancer Treatment
Current position: Design Assurance Engineer, Omnicell

Gneya Harish Pandya, Chemical & Biochemical Engineering, M.Eng. 2020
Formulation of microRNA for in vivo Delivery
Current position: Engineer, CRISPR Therapeutics

Undergraduate Theses

Kevin Smith, Biology, B.S. 2003
Transcriptional Control of Albumin Expression in Hepatocytes

Constantinos Ketonis, Biomedical Engineering, B.S. 2004
Bioinformatic Evaluation of Inflammatory Responses

Ioannis Kramvis, Genetics, B.S. 2005
NF- κ B Activation in Acute and Chronic Inflammatory States of a Hepatocyte Culture System

Johanna Sotiris, Biochemistry, B.S. 2005
Fluorescence Microscopy Localization of NF- κ B / I- κ B Family Constituents in Hepatic Response to Pro-Inflammatory Stimuli

Jeremy Grubin, Biomedical Engineering, B.S. 2005
Quantitative Analysis of Chemotherapeutic Activity

Anthony Nicolini, Biomedical Engineering, B.S. 2005
Independent and Principal Components Analysis of Gene Expression in Inflammatory Responses

Samuel Tischfield, Genetics, B.S. 2006
Transcriptional Regulation of Hepatic Gene Expression
(co-supervised with M. Ierapetritou)

Lily Cheung Chang, Chemical & Biochemical Engineering, B.S. 2008
Cell Growth and Urea Production in HepG2 Cells Under Different Insulin and Glucose Concentrations
(co-supervised with M. Ierapetritou)

Melissa Lash, Chemical & Biochemical Engineering, B.S. 2011
Amphiphilic Macromolecules Used as Therapeutic Delivery Systems
(co-supervised with K. Uhrich)

Brittany Gladney, Chemical & Biochemical Engineering, B.S. 2011
Analysis of Hepatocyte Spreading Via Heparin Immobilization

William Xu, Biomedical Engineering, B.S. 2020
Nanoparticle Drug Delivery for Cystic Fibrosis

Himani Chavda, Chemical & Biochemical Engineering, B.S. 2022
Evaluating Anti-Biofilm Drug Formulations Under Simulated in vivo Conditions

Veronica Farag, Biomedical Engineering, B.S. 2023
Optimizing an In-vivo Simulator to Evaluate Anti-biofilm Drug Formulations

Swarnima Roychowdhury, Biomedical Engineering, B.S. 2023
Simulating In-vivo Antimicrobial Formulations in P. aeruginosa Biofilms

Alisha Zhu, Biomedical Engineering, B.S. 2023
Examining the Relationship Between Biophysical Properties of Antimicrobial Peptides (AMPs) and their Drug Efficacies

Undergraduate Research Students

<u>Student</u>	<u>Department/Program</u>	<u>Dates</u>	<u>Placement</u>
Sarah Shenouda	Biomed. Eng.	05/23-present	Current student
Sughosha Rao	Biomed. Eng.	09/23-present	Current student
Nikhil Bagchi	Biomed. Eng.	08/22-5/23	Phd prog., CBE, Johns Hopkins
Veronica Farag	Biomed. Eng.	05/22-5/23	Phd prog., BME, Columbia
Angela Appiah-Kubi	Chem. Eng./Kean U.	06/22-08/22	Phd prog., Georgetown
Youssef Mohamed	Chem. Eng./Vanderbilt	06/21-08/21	Harvard Dental School
Alexandra Hobbs	Chem. Biochem. Eng.	05/21-05/22	Junior, Rutgers
Swarnima Roychowdhury	Biomed. Eng.	05/20-6/23	Phd prog., BME, Georgia Tech.
Alisha Zhu	Biomed. Eng.	09/20-5/23	Rutgers
Ingy Razouk	Biomed. Eng.	09/20-5/22	BS/MS, Rutgers
Joseph Farag	Biomed. Eng.	11/20-05/21	Phd prog., Pharmacol., Buffalo
Faith Northern	Biochemistry/Vassar	06/20-08/20	Phd prog., Sociology, NYU
Himani Chavda	Chem. Biochem. Eng.	01/20-05/23	
William Xu	Biomed. Eng.	05/19-05/20	BS/MS, Rutgers
Fabian Hernandez	U. Texas Austin	05/18-08/18	Senior, UT Austin
Amanda Solbach	Texas A&M San Antonio	05/17-08/17	Senior, Texas A&M SA
Pooja Patel	Biomed. Eng.	10/16-5/17	BS/MS, Rutgers
Jamal Keyes	Physics (Jackson St.)	05/16-08/16	Japan Exchange Teaching Prog.
Yulei Zhang	Chem. Biochem. Eng.	01/14-5/14	Senior, Rutgers
Shaili Tanna	Biomed. Eng.	10/13-12/14	Senior, Rutgers
Julius Taylor	Chem. Eng. (Tuskegee U)	05/13-08/13	Chevron
Boris Sotnikov	Genetics	05/11-05/13	Puraderma
Molly Carroll	Biomed. Eng.	09/10-5/12	U. Wisconsin, BME
Neil Raju	Biomed. Eng.	05/11-12/11	Junior, Rutgers
Maya Saltzman	Biomed. Eng.	05/11-12/11	Rutgers NJ Med.
Michael McCoy	Biological Eng. (U. Missouri)	05/11- 08/11	Cornell, Biomed. Eng.
Izmarie Poventud-Fuentes#	Industrial Biotech. (UPR)	05/11- 08/11	U. Pennsylvania, Pharmacology
Kyle Minor#	Chem. Biochem. Eng.	07/10-5/11	Merck
Meagan O'Kane	Biomed. Eng.	01/10-5/11	Celgene
Robert Chou	Biomed. Eng. (U. Texas)	06/10-08/10	Genentech
Rasraj Rana	Biology	01/10-5/10	
Timothy Chiang	Biomed. Eng.	09/09-5/10	Cornell, Biomed. Eng.
Brittany Gladney	Chem. Biochem. Eng.	09/09-5/11	RWJMS, MD studies
David Pal#	Biomed. Eng.	9/08-3/10	Princeton, Environmental Sci.

Ankita Modh	Cell Biol./Psych.	1/09-5/09	Applying to med school
Paul Gianella	Biomed. Eng.	12/07-5/09	Albert Einstein
Hiren Patel	Biomed. Eng.	09/08-12/08	Industrial intern
Lily Cheung Chang*	Chem. Biochem. Eng.	9/07-5/08	Princeton, Chem. Eng.
Ariell Joiner	Chem. Biochem. Eng./Math	5/07-5/08	U. Michigan, Pharmacology
Pratik Sheth^	Biomed. Eng.	1/07-5/08	
Anik Jain^	Biomed. Eng.	1/07-5/08	Dendreon Corp.
Vinit Shah^	Biomed. Eng.	1/07-5/08	Johnson & Johnson
Ronn Friedlander	Biomed. Eng.	9/06-5/08	Harvard/MIT, Bioeng.
Lindsay Mignone	Biomed. Eng.	9/06-5/08	Rutgers, Biomed. Eng. MS
Timothy Lin*	Biomed. Eng.	5/06-5/08	RU Cell DNA Repos.
Wan Tang	Biomed. Eng.	2/06-5/07	Rutgers, Biomed. Eng. MS
Stephanie Loh	Biomed. Eng.	5/07-8/07	Sophomore, Rutgers
Mark Hwang	Biomed. Eng.	4/05-5/07	UIUC, MD/PhD
Camil Aponte	Mathematics (RISE)	6/06-8/06	Washington U., Math
Kimberley Argen	Biomed. Eng.	6/06-8/06	UT San Antonio, Biomed Eng.
Sam Tischfield	Genetics/Comp. Sci.	5/05-5/06	Cornell, Systems Biology
David Wayman	Biomed. Eng.	9/04-5/06	UCSD, Pharmacology
Rashmeet Sangari	Chem. Biochem. Eng.	9/04-5/06	Merck
Salah Issa	Chem. Biochem. Eng.	5/05-4/06	Merck
Kenneth Gwanmesia	Physics (RISE)	6/05-8/05	Rutgers, Chemical Eng.
Jennifer Oddo	Biomed. Eng.	5/04-5/05	Biotech startup
Sandra Viriyayuthakorn	Biomed. Eng.	1/04-5/05	Bristol Myers Squibb
Jeremy Grubin	Biomed. Eng.	9/03-5/05	Mt. Sinai, MD
Anthony Nicolini	Biomed. Eng.	9/02-5/05	Georgia Tech, Biomed. Eng.
Johanna Sotiris	Biochemistry	9/03-5/05	U. Penn., Surgery
Ioannis Kramvis	Biochemistry/Genetics	9/02-5/05	Childrens Hospital, Boston
Jana Gevertz	Math (REU)	5/04-8/04	Princeton U., Applied Math
Aaron Seto	Biomed. Eng.	9/03-5/04	Rutgers, Biomed. Eng.
Karthik Ravindran	Biomed. Eng.	5/03-5/04	U. Wisconsin Med. School
Jennifer Seto	Chem. Biochem. Eng.	1/03-5/03	MIT, Chem. Eng.
Constantinos Ketonis	Biomed. Eng.	9/02-5/04	Thomas Jefferson, MD/PhD
Zhuting Li	Biomed. Eng.	9/02-5/04	Boston U., Biomed. Eng.
Neha Shah	Biomed. Eng.	9/02-5/04	U. Minnesota, Biomed. Eng.
Salaheldin Hamed	Biomed. Eng.	9/02-5/03	Rutgers, Biomed. Eng.
Sandra Gonzalez	Chem. Biochem. Eng.	9/02-5/03	Johnson & Johnson
Kevin Smith	Cell Biology	9/01-5/03	U. Pennsylvania, Mol. Biol.
Julia Ansari	Chem. Biochem. Eng.	1/02-5/02	
Vamsi Rani	Biomed. Eng.	5/01-5/02	Rutgers, Genetics
Monir Parikh	Biomed. Eng.	5/01-8/01	Refine Technologies
Reynand Valenzuela	Grad Stud. Career Prog.	5/01-8/01	Stevens Inst.
George Ford	Biomed. Eng.	1/01-5/01	NJIT, Bioinformatics

*cosupervised (50%) with Marianthi Ierapetritou

^cosupervised (50%) with Stan Dunn

#cosupervised (50%) with Prabhas Moghe

M.S. and Ph.D. Committees (beyond advisees)

<u>Student</u>	<u>Degree</u>	<u>Department</u>	<u>Thesis Advisor(s)</u>
Siddarth Ganesh	M.S.	Biomed. Eng.	B. Parekkadan
Robert Kearney	M.Eng.	Biomed. Eng.	S. Chundawat
Mohit Kumar	Ph.D.*	Chem. Biochem. Eng.	S. Chundawat
Antonio De Chellis	M.S.	Chem. Biochem. Eng.	S. Chundawat
Jake Siebert	Ph.D.*	Biomed. Eng.	P. Moghe
Raphaella Bento	Ph.D.*	Mol. Biosci.	B. Parekkadan
Dharanidaran Jayachandran	Ph.D.	Chem. Biochem. Eng.	S. Chundawat
Yannuo Li	Ph.D.	Chem. Biochem. Eng.	I. Androulakis
Zachary Power	M.S.	Chem. Biochem. Eng.	S. Chundawat

Xiang Ren	Ph.D.	Chem. Biochem. Eng.	P. Georgopoulos
Fleurie Kelley	Ph.D.*	Chem. Biochem. Eng.	B. Schuster
Ryan Skinner	M.S.	Biomed. Eng.	L. Cai
Sweta Gargatte	M.S.	Chem. Biochem. Eng.	H. Zhang
Joseph Decker	M.Eng.	Biomed. Eng.	L. Cai
Chandra Kanth Bandi	Ph.D.	Chem. Biochem. Eng.	S. Chundawat
Alexandra Burr	Ph.D.	Biomed. Eng.	B. Parekkadan
Nanxia Zhao	Ph.D.	Chem. Biochem. Eng.	P. Moghe
Lauren Timmens	Ph.D.	Biomed. Eng.	B. Parekkadan
Caroline Wood	Ph.D.	Biomed. Eng.	J. Sy
Mihir Moghe	M.S.	Chem. Biochem. Eng.	D. Shreiber
Akash Dagia	M.S.	Chem. Biochem. Eng.	S. Chundawat
Namratha Subhash	M.S.	Chem. Biochem. Eng.	S. Chundawat
Apostolos Zournas	M.S.	Chem. Biochem. Eng.	C. Dismukes
Jiahe Xu	M.S.	Chem. Biochem. Eng.	T. Asefa
Rebecca Chmielowski	Ph.D.	Chem. Biochem. Eng.	P. Moghe
Yuanshu Zhou	M.S.	Chem. Biochem. Eng.	R. Riman
Jia Li	M.S.	Chem. Biochem. Eng.	M. Dutt
Vibha Narayanan	M.S.	Chem. Biochem. Eng.	S. Chundawat
Rohit Rao	Ph.D.	Biomed. Eng.	I. Androulakis
Alison Acevedo	Ph.D.	Biomed. Eng.	I. Androulakis
Bin Zhang	M.S.	Chem. Biochem. Eng.	M. Dutt
Seul-A Bae	Ph.D.	Chem. Biochem. Eng.	I. Androulakis
Joseph Molde	Ph.D.	Biomed. Eng.	J. Kohn
Ho-Chung Chen	M.S.	Chem. Biochem. Eng.	S. Chen
John Mattick	M.S.	Chem. Biochem. Eng.	I. Androulakis
Sally Stras	Ph.D.	Chem. Biochem. Eng.	S. Sofou
Trevan Locke	Ph.D.	Chem. Biochem. Eng.	S. Sofou
Bahar Demirek	Ph.D.	Chemistry	K. Uhrich
Geetartha Uppaladadium	M.S.	Chem. Biochem. Eng.	M. Dutt
Xiaolei Chu	M.S.	Chem. Biochem. Eng.	M. Dutt
Varsha Rane	M.S.	Biomed. Eng.	S. Sofou
Jennifer Chan	Ph.D.	Biomed. Eng.	K. Uhrich
Kristopher White	Ph.D.	Chem. Biochem. Eng.	R. Olabisi
Agnes Yeboah	Ph.D.	Chem. Biochem. Eng.	M. Yarmush
Shuang Chen	Ph.D.	Chem. Biochem. Eng.	J. Kohn
Michelle Sempkowski	Ph.D.	Biomed. Eng.	S. Sofou
Fikret Aydin	Ph.D.	Chem. Biochem. Eng.	M. Dutt
Leebyn Chong	Ph.D.	Chem. Biochem. Eng.	M. Dutt
Vidyalakshmi Muthukumar	M.S.	Chem. Biochem. Eng.	M. Dutt
Li Gu	Ph.D.	Chemistry	K. Uhrich
Charles Zhu	Ph.D.	Biomed. Eng.	S. Sofou
Elizabeth Stucky	Ph.D.	Chem. Biochem. Eng.	M. Yarmush/D. Shreiber
Oleg Milberg	Ph.D.	Chem. Biochem. Eng.	M. Yarmush
Perry Yin	Ph.D.	Biomed. Eng.	K. Lee
Bharatram Muralidharan	M.S.	Chem. Biochem. Eng.	M. Dutt
Ana Gomez	M.S.	Biomed. Eng.	S. Sofou
Sabrina Snyder	Ph.D.	Biomed. Eng.	K. Uhrich
Sujata Sundaram	Ph.D.	Biomed. Eng.	P. Sinko
Spyros Stamatelos	Ph.D.	Biomed. Eng.	P. Georgopoulos
Alex Harmon	Ph.D.	Chemistry	K. Uhrich
Jennifer Kim	M.S.	Biomed. Eng.	L. Cai
Kinsuk Shah	M.S.	Biomed. Eng.	D. Axelrod
Vani Mathur	M.S.	Biomed. Eng.	P. Moghe
Nicole Iverson	Ph.D.	Biomed. Eng.	P. Moghe
Kevin Nikitczuk	Ph.D.	Biomed. Eng.	M. Yarmush
Er Liu	Ph.D.	Biomed. Eng.	P. Moghe
Arnold Luk	Ph.D.	Biomed. Eng.	J. Kohn

Eric Yang	Ph.D.	Biomed. Eng.	I. Androulakis
Nicole Plourde	Ph.D.	Chem. Biochem. Eng.	P. Moghe
Ashish Misra	Ph.D.	Chem. Biochem. Eng.	S. Kim
Carlos Caicedo-Carvajal	Ph.D.	Biomed. Eng.	T. Shinbrot/R. Foty
James Wu	M.S.	Chem. Biochem. Eng.	I. Androulakis
Kevin Nikitczuk	M.S.	Biomed. Eng.	M. Yarmush
Chris Gaughan	Ph.D.	Chem. Biochem. Eng.	D. Shreiber
Eddie Davis	Ph.D.	Chem. Biochem. Eng.	M. Ierapetritou
Natesh Parashurama	Ph.D.	Chem. Biochem. Eng.	M. Yarmush
Eric Novik	Ph.D.	Biomed. Eng.	M. Yarmush
Eric Wallenstein	Ph.D.	Biomed. Eng.	M. Yarmush
Ram Sharma	Ph.D.	Chem. Biochem. Eng.	P. Moghe
Tim Maguire	Ph.D.	Biomed. Eng.	M. Yarmush
Nripen Sharma	Ph.D.	Chem. Biochem. Eng.	M. Yarmush/M. Ierapetritou
Anouska Dasgupta	Ph.D.	Chem. Biochem. Eng.	P. Moghe
Evangelia Chnari	Ph.D.	Chem. Biochem. Eng.	P. Moghe
Jordan Katz	Ph.D.	Biomed. Eng.	M. Dunn
Jintae Lee	Ph.D.	Chem. Biochem. Eng.	H. Pedersen
Eric Semler	Ph.D.	Chem. Biochem. Eng.	P. Moghe
Thomas Brieva	Ph.D.	Chem. Biochem. Eng.	P. Moghe
Michael Weiner	M.S.	Biomed. Eng.	J. Kohn
S. Patrick Walton	Ph.D.	Chem. Eng. (MIT)	M. Yarmush/G. Stephanopoulos

**Degree in progress*

Professional Service

University Service:

- Biotechnology Training Program, Executive Committee, 2018-present
- School of Graduate Studies, Executive Council, 2018-2019
- School of Graduate Studies, Student Awards Committee, 2018-2020
- Mentoring Executive Committee member, Rutgers Connection Network Faculty to Faculty Mentoring Program, 2017-18, 2018-19
- Graduate School of New Brunswick, Physical and Mathematical Sciences and Engineering Area Committee, 2015-2017, 2011-2013, 2015-2017
- University Teaching Awards Committee, 2015
- Director, Rutgers-NSF REU in Cellular Bioengineering, 2009-2012
- Graduate School of New Brunswick, Teaching Awards Committee, 2010-2012
- Biomedical Research Advisory Committee, 2008-2010, 2012
- University Hearing Board, 2007-08
- Chair, Admissions Committee, NSF IGERT Training Program on Integratively Engineered Biointerfaces, Fall 2003
- Faculty Participant, Rutgers NSF CAREER Workshop, Spring 2003 and 2005
- Rutgers Representative, Science Day 2001, organized by the Science Coalition, Washington, D.C.

School of Engineering Service:

- Dean's Advisory Committee on Appointments and Promotions, 2012-2015
- Dean's Executive Advisory Board Committee, 2010-2011
- Member, Committee on Committees, 2004-2007
- Faculty Advisor, Rutgers University Bioengineering Society (undergraduate professional society), 2011-2013

Departmental Service:

- Vice Chair, Department of Biomedical Engineering, 2020-present
- Member, Promotion Review Committee, Department of Biomedical Engineering, 2018-present.
- Graduate Program Director, Department of Chemical and Biochemical Engineering, 2013-2019.
- Member, Faculty Search Committee, Department of Biomedical Engineering, 2014-2017, 2000 -

2001, 2002 - 2003

- ABET Committee, Department of Chemical and Biochemical Engineering, 2011-2013.
- ABET Committee, Department of Biomedical Engineering, 2011-2013.
- Chair, Faculty Search Committee, Department of Chemical and Biochemical Engineering, 2006-07, 2007-08; Member, 2001-02, 2005-06, 2008-2012, 2015-18
- Class of 2013 Advisor, Department of Biomedical Engineering, 2010-2013
- Senior Advisor, Department of Chemical and Biochemical Engineering, 2009-2010
- Newsletter Coordinator, Department of Biomedical Engineering, 2010
- Undergraduate Director, Department of Biomedical Engineering, 2006-2008
- Faculty Coordinator, Departmental Seminar Series, Department of Chemical and Biochemical Engineering, 2000 - 2003, 2005-2006
- Member, Graduate Admissions Committee, Department of Chemical and Biochemical Engineering, 2000 - 01, 2002 - 2004
- Founding Director, BME Honors Academy, Department of Biomedical Engineering, Summer 2002 - May 2006
- Track Advisor, Tissue Engineering and Molecular Bioengineering undergraduate track, Department of Biomedical Engineering, Summer 2002 - May 2006

Professional Conference Sessions Organized/Chaired

- Session entitled “In Honor of Martin Yarmush II”, 2017 AIChE Annual Meeting
- Session entitled “High-Throughput Technologies”, 2008 AIChE Annual Meeting
- Session entitled “Metabolic Engineering for Tissues and Organs”, 2007 AIChE Annual Meeting
- Session entitled “BioMEMS and Biosensing”, 2006 AIChE Annual Meeting
- Total of four sessions entitled “Engineering Improvements in Cancer Diagnostics and Therapy: Novel Therapeutic Approaches”, “Engineering Improvements in Cancer Diagnostics and Therapy: Experimental and Computational Methods”, “Advances in Systems Biology: Methods”, and “Advances in Systems Biology: Applications”, 2005 AIChE Annual Meeting
- Session entitled “Quantitative Systems Biotechnology”, Biochemical Engineering XIV (2005), Harrison Hot Springs, BC (Canada)
- Two sessions entitled “Systems Biology - Omics Technology Applications (I and II)”, and one session entitled “Simulation of Biomolecules I: Computational Representation of Genomics and Proteomics”, 2004 AIChE Annual Meeting
- Two sessions entitled “Qualification and Analysis of Intracellular Processes (I and II)”, 2003 AIChE Annual Meeting
- Session entitled “Gene Delivery”, 2002 EMBS/BMES Annual Meeting
- Session entitled “Intracellular Processes”, 2002 AIChE Annual Meeting
- Session entitled “Focus on Viral Vaccines and Gene Therapy”, 2001 AIChE Annual Meeting
- Session entitled “Biospecific Interactions: (1) Fundamentals in Molecular Recognition and (2) Applications in Affinity Separations”, 2000 ACS National Meeting
- Session entitled “Receptor Mediated Cell Processes”, 1997 AIChE Annual Meeting

K-12 Service

- Science Curriculum Committee, Princeton Charter School, 2014-present
- Judge, The North Jersey Regional Science Fair, 2008
- Project SUPER Career Exploration Orientation (middle school girls), 2006

Peer Review

Editorial Boards

AIMS Bioengineering

Open Biotechnology Journal

Annual Review of Biomedical Engineering, Editorial Committee, 2019

Journals

AAPS Journal, ACS Biomaterials Science, ACS Chemical Biology, ACS Applied Materials & Interfaces, Acta Biomaterialia, Advanced Drug Delivery Reviews, Advanced Functional Materials, Advanced Healthcare Materials, AIChE Journal, Annals of Biomedical Engineering, Annual Review of Biomedical Engineering, Biochimica Biophysica Acta, Bioconjugate Chemistry, Biomacromolecules, Biomaterials, Bioinformatics, Biophysical Journal, BioResearch Open Access, Biotechnology and Bioengineering, Biotechnology Progress, BMC Bioinformatics, Cancer Research, Cellular Oncology, ChemBioChem, Chemistry - A European Journal, Clinical Lipidology, Experimental Cell Research, Expert Opinion in Drug Delivery, Expert Opinion in Drug Metabolism and Toxicity, Expert Reviews in Molecular Medicine, International Journal of Pharmaceutics, Journal of American Chemical Society, Journal of Bioactive and Compatible Polymers, Journal of Biological Engineering, Journal of Controlled Release, Journal of Membrane Biology, Journal of Theoretical Biology, Macromolecular Biosciences, Metabolic Engineering, Molecular Pharmaceutics, NanoLIFE, Nanomedicine, Nucleic Acids Research, Particle and Particle Systems Characterization, Pattern Recognition Letters, Pharmaceutical Research, Physiological Reports, PLoS One, Polymers, Proceedings of the National Academy of Sciences, RSC Advances, Science Translational Medicine, Science Advances, Small, Theranostics, Tissue Engineering

Grants

NIH, NSF, The Whitaker Foundation, Army Research Office, ACS Petroleum Research Fund, Austrian Science Fund, Israel Science Foundation, Juvenile Diabetes Foundation, North Carolina Biotechnology Center, New Jersey Center for Biomaterials

Review Panels

- NIH BBBT-M, “Topics in Instrumentation and Systems Development”, 2023
- NIH ZRG1, “Innovative Research in Cancer Nanotechnology”, 2021
- NIH ZAI1, AWA-M, “Combating Antibiotic Resistant Bacteria Interdisciplinary Research Unit”, 2020
- NIH ZRG1 SBIB-Q03 (Medical Imaging) study section, 2020
- NIH SBIR study section on “Platform Technologies for Nucleic Acid Delivery,” 2018-2019 (3x)
- NIH Special Emphasis Panel in Molecular and Cellular Substrates of Complex Brain Disorders (co-Chair), 2017
- NIH Gene and Drug Delivery study section, permanent member, 2011-2017
- NIH SBIR study section on “RNAi Cancer Therapeutics Using Nanotechnology,” 2013
- NIH Gene and Drug Delivery study section, member Feb. 2010, May 2010 and June 2011
- NSF REU panel, 2009, 2010, 2011
- NIH RC1 Challenge grant panel, 2009
- NSF Biochemical Engineering and Biotechnology panel, 2006
- NIH Modeling and Analysis of Biological Systems study section, 2004
- NSF CAREER panel, 2003 and 2006