

CURRICULUM VITAE

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CONTACT INFORMATION

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EDUCATION AND TRAINING

September, 1984 - June, 1988: Undergraduate Student in the College of Pharmacy and Allied Health Professions, Northeastern University, Boston, MA.

September, 1986 - May, 1988: Undergraduate Honors Student Research Project Entitled "*Preparation and Characterization of Doxorubicin-Dextran Conjugates*" – Major Advisor: Professor Mehdi Boroujerdi.

June, 1988: Bachelor of Science in Pharmacy (*magna cum laude*).

August, 1988 - July, 1992: Doctoral Student in the Department of Industrial and Physical Pharmacy, School of Pharmacy and Pharmacal Sciences, Purdue University, West Lafayette, Indiana.

August, 1988 - June, 1989: Teaching Assistant in the Department of Industrial and Physical Pharmacy.

July, 1989 - June, 1992: Research Assistant in the Department of Industrial and Physical Pharmacy.

July, 1989 - June, 1992: Doctoral Dissertation Research Entitled "*Surface Modification of Biomaterials with Water-Soluble Polymers: A Steric Repulsion Approach*" - Major Advisor: Professor Kinam Park.

July, 1992: Doctor of Philosophy in Pharmaceutical Science/Pharmaceutics.

PROFESSIONAL AND ACADEMIC POSITIONS

August, 1992 – December, 1992: Senior Research Scientist, Columbia Research Laboratories, Madison, WI.

January, 1993 – June, 1999: Assistant Professor, Department of Pharmaceutical Sciences, School of Pharmacy, Northeastern University, Boston, MA.

July, 1999 – April, 2006: Associate Professor (with tenure), Department of Pharmaceutical Sciences, School of Pharmacy, Northeastern University, Boston, MA.

June, 2000 – December, 2000: Visiting Research Scholar. Department of Chemical Engineering, MA Institute of Technology, Cambridge, MA. (Sabbatical leave appointment in Institute Professor Robert Langer's group).

May, 2006 – January, 2010: Full Professor, Department of Pharmaceutical Sciences, School of Pharmacy, Northeastern University, Boston, MA.

February, 2010 – April, 2016: Present: Bouve College Distinguished Professor, Department of Pharmaceutical Sciences, School of Pharmacy, Northeastern University, Boston, MA.

September, 2012 – Present: Affiliate Faculty Member, Department of Chemical Engineering, College of Engineering, Northeastern University, Boston, MA.

September, 2013 – Present: Affiliate Faculty Member, Department of Biomedical Engineering, College of Engineering, Northeastern University, Boston, MA.

January, 2014 – Present: Distinguished Adjunct Professor, Faculty of Pharmacy, King Abdulaziz University, Jeddah, Saudi Arabia.

April, 2016 – Present: University Distinguished Professor, Department of Pharmaceutical Sciences, School of Pharmacy, Northeastern University, Boston, MA.

ADMINISTRATIVE POSITIONS

July, 1995 – June 2000: Pharmaceuticals Group Leader, Department of Pharmaceutical Sciences, School of Pharmacy at Northeastern University, Boston, MA.

September, 2002 – June, 2004: Education and Outreach Coordinator, Molecular Biotechnology Initiative at Northeastern University, Boston, MA.

July 2003 – Present: Co-Director, Nanomedicine Education and Research Consortium (NERC) at Northeastern University, Boston, MA.

July, 2005 – December, 2008: Associate Chairman, Department of Pharmaceutical Sciences, School of Pharmacy at Northeastern University, Boston, MA.

January, 2009 – January, 2010: Interim Chairman, Department of Pharmaceutical Sciences, School of Pharmacy at Northeastern University, Boston, MA.

February, 2010 – April, 2016: Chairman, Department of Pharmaceutical Sciences, School of Pharmacy, Northeastern University, Boston, MA.

RESEARCH INTERESTS

The primary focus of research in my laboratory is on the development of biocompatible materials from natural and synthetic polymers, target-specific drug and gene delivery systems for cancer and infectious diseases, and nanotechnology applications for medical diagnosis, imaging, and therapy. Specific projects that we are currently pursuing include:

- Synthesis of novel polymeric materials for medical and pharmaceutical applications.
- Preparation and characterization of polymeric membranes and microcapsules with controlled permeability properties for medical and pharmaceutical applications.
- Target-specific drug, gene, and vaccine delivery systems for diseases of the gastro-intestinal tract.
- Delivery of DNA and siRNA to mucosal surfaces for gene therapy and vaccination.
- Localized delivery of cytotoxic and anti-angiogenic drugs, siRNA, and genes for solid tumors in novel biodegradable polymeric nanoparticles.
- Intracellular and sub-cellular delivery systems for drugs and genes using target-specific, long-circulating, biodegradable polymeric nanoparticles.
- Role of hypoxia and tumor microenvironment in development of tumor drug resistance, angiogenesis, and metastasis.
- Local administration of drugs and nucleic acid-containing nanovectors immobilized on stents for the treatment of arterial diseases (e.g., coronary restenosis).
- Novel oil-in-water nanoemulsion formulations for drug delivery through the gastrointestinal tract and across the blood-brain barrier.
- Systemic and mucosal vaccination using novel immune-modulatory strategies and delivery systems.
- Intranasal administration of liposomes and nanoemulsions to enhance brain delivery of peptides, proteins, siRNA, and genes.
- Functionalized inorganic nanoparticles - including gold, iron oxide, alloys, and core-shell nanostructures - for biosensing, imaging, and targeted therapeutic applications.

PUBLICATIONS [Google Scholar Hirsch “h” index = 65 and Thompson-Reuters Highly Cited (top 1%) in Pharmacology and Toxicology]

Book Editorship

Amiji, M.M. and Sandmann, B.J. (eds.). *Applied Physical Pharmacy*. Published by McGraw-Hill Medical Publishing Division. New York, NY. 2002.

Amiji, M.M. (ed.) *Polymeric Gene Delivery: Principles and Applications*. Published by CRC Press, LLC (a subsidiary of Taylor and Francis). Boca Raton, FL. 2004.

Amiji, M.M. (ed.). *Nanotechnology for Cancer Therapy*. Published by CRC Press, LLC (a subsidiary of Taylor and Francis). Boca Raton, FL. 2007.

Torchilin, V.P. and **Amiji, M.M.** (eds.). *Handbook of Materials for Nanomedicine*. Publication of the *Biomedical Nanotechnology Series*, (10 Volumes Book Series edited by Torchilin, V.P. and **Amiji, M.M.**). Volume 1, Pan Published by Stanford Publishing, Singapore, 2010.

Amiji, M.M., Cook, T., and Mobley, W.C. (eds.). *Applied Physical Pharmacy – Second Edition*. Published by McGraw-Hill Medical Publishing Division. New York, NY, 2014.

Merkel, O.M. and **Amiji, M.M.** (eds). *Advances and Challenges in the Delivery of Nucleic Acid Therapeutics – Volumes 1 and 2*. E-Book Published by Future Science, LTD, London, UK. 2015. <http://www.futuremedicine.com/doi/book/10.4155/9781910419922>.

Milane, L. and **Amiji, M.M. (eds)**. *Nanotechnology in Inflammatory Diseases*. To be Published by CRC Press, LLC (a subsidiary of Taylor and Francis). Boca Raton, FL. (In preparation).

Book Chapters

Amiji, M. and Park, K. Surface modification of polymeric biomaterials with poly(ethylene oxide): a steric repulsion approach. In Shalaby, S.W., Ikada, Y., Langer, R., and Williams, J. (eds.) *Polymers of Biological and Biomedical Significance*. American Chemical Society Symposium Series Publication, Volume 540. Published by the American Chemical Society, Washington, DC. 1994, pp 135-146.

Amiji, M. and Park, K. Surface modification of polymeric biomaterials with poly(ethylene oxide), albumin, and heparin for reduced thrombogenicity. In Cooper, S.L., Bamford, C.H., and Tsuruta, T. (eds.) *Polymer Biomaterials: In Solution, as Interfaces, and as Solids*. Published by VSP, The Netherlands. 1995, pp 535-552.

Amiji, M., Kamath, K., and Park, K. Albumin-modified biomaterial surfaces for reduced thrombogenicity. In Wise, D.L., Altobelli, D.E., Grasser, J.D., Shwartz, E.R., Trantolo, D.J., and Yaszemski, M. (eds.) *Encyclopedic Handbook of Biomaterials and Bioengineering - Part B Applications. Volume II*. Published by Marcel Dekker, Inc., New York, NY. 1995, pp 1057-1070.

Amiji, M.M. Surface modification of chitosan to improve blood compatibility. In Pandalai, S.G. (eds.). *Recent Research Developments in Polymer Science, Volume III*. Published by Transworld Research Network, Trivandrum, India. 1999, pp 31-39.

Hejazi, R. and **Amiji, M.** Chitosan-based delivery systems: physicochemical properties and pharmaceutical applications. In Dumitriu, S. (eds.). *Polymeric Biomaterials. Second Edition, Revised and Expanded*. Published by Marcel Dekker, Inc., New York, NY. 2001, Chapter 10, pp 213-238.

Kaul, G. and **Amiji, M.** Polymeric gene delivery systems. In Wise, D.L., Hasirci, V., Lewandrowski, K.-U., Yaszemski, M.J., Altobelli, D.W., and Trantolo, D.J. (eds.). *Tissue Engineering and Novel Delivery Systems*. Published by Marcel Dekker, Inc., New York, NY. 2004, Chapter 16, pp 333-367.

Kommareddy, S. and **Amiji, M.** Targeted drug delivery to tumor cells using colloidal carriers. In Lu, D.R. and Oie, S. (eds.). *Cellular Drug Delivery: Principles and Practice*. Published by Humana Press, Inc., Totowa, NJ. 2004, Chapter 10, pp 181-215.

Kaul, G. and **Amiji, M.M.** Protein nanospheres for gene delivery. In Amiji, M.M. (ed.) *Polymeric Gene Delivery: Principles and Applications*. Published by CRC Press, LLC. Boca Raton, FL. 2004, Chapter 27, pp. 429-447.

Kommareddy, S., Shenoy, D.B., and **Amiji, M.M.** Gelatin nanoparticles and their biofunctionalization. In Kumar, C. (ed.). *Nanotechnologies for the Life Sciences, Volume 2: Biological and Pharmaceutical Nanomaterials*. Published by Wiley-VCH, Berlin, Germany. 2005, Chapter 11, pp. 330-353.

Bhavsar, M.D., Shenoy, D.B., and **Amiji, M.M.** Nanoparticles for delivery in the gastrointestinal tract. In Torchilin, V.P. (ed.). *Nanoparticulates as Drug Carriers*. Published by Imperial College Press, London, United Kingdom, 2006, Chapter 26, pp 609-648.

- Shenoy, D.B. and **Amiji, M.M.** An overview of condensing and non-condensing polymeric systems for gene delivery. In Friedmann, T. and Rossi, J (eds.). *Gene Transfer: Delivery and Expression of DNA and RNA – A Laboratory Manual*. Published by Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY. 2007, Chapter 34, pp 395-403.
- Kommareddy, S. and **Amiji, M.M.** Protein nanospheres for gene delivery: preparation and *in vitro* transfection studies with gelatin nanoparticles. In Friedmann, T. and Rossi, J. (ed.). *Gene Transfer: Delivery and Expression of DNA and RNA – A Laboratory Manual*. Published by Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY. 2007, Chapter 52, pp 527-540.
- Kommareddy, S., Shenoy, D.B., and **Amiji, M.M.** Long-circulating polymeric nanocarriers for drug and gene delivery in cancer. In Amiji, M.M. (ed.). *Nanotechnology for Cancer Therapy*. Published by CRC Press, Boca Raton, FL. 2007, Chapter 13, pp 231-242.
- Tiwari, S.B. and **Amiji, M.M.** Nanoemulsions for tumor targeted drug delivery. In Amiji, M.M. (ed.). *Nanotechnology for Cancer Therapy*. Published by CRC Press, Boca Raton, FL. 2007, Chapter 35, pp 723-739.
- Iftemia, N., **Amiji, M.M.**, and Iftemia, I. Nanotechnology applications in cancer diagnosis and therapy. In Yih, T.C. and Talpasanu, I. (ed.). *Micro and Nano Manipulations for Biomedical Applications*. Published by Springer Publishing, New York, NY, 2008, Chapter 2, pp 13-41.
- Magadala, P., van Vlerken, L.E. Shahiwala, A., and **Amiji, M.M.** Multifunctional polymeric nanosystems for tumor-targeted delivery. In Torchilin, V.P. (ed.). *Multifunctional Pharmaceutical Nanocarriers*. Published by Springer Publishing, New York, NY 2008, Chapter 2, pp 33-64.
- Nagesha, D., Devalapally H.K., Sridhar, S., and **Amiji, M.** Multifunctional magnetic nanosystems for tumor imaging, targeted delivery, and thermal therapy. In Torchilin, V.P. (ed.). *Multifunctional Pharmaceutical Nanocarriers*. Published by Springer Publishing, New York, NY 2008, Chapter 14, pp 381-408.
- Bhavsar, M.B., Jain, S., and **Amiji, M.M.** Nanotechnology in oral drug delivery. In Xu, J. J. and Ekins, S. (eds.). *Drug Efficacy, Safety, and Biologics Discovery: Emerging Technologies and Tools*. Published by Wiley Publishing, New York, NY 2009, Chapter 10, pp. 231-275.
- Brito, L., Chadwick, S., and **Amiji, M.M.** Gelatin-based gene delivery systems. In Morishita, M. and Park, K. (eds.). *Biodrug Delivery Systems: Fundamentals, Applications, and Clinical Developments*. Published by Informa Healthcare Group, New York, NY 2009, Chapter 20, pp 323-341.
- Ganta, S., Iyer, A.K., and **Amiji, M.M.** Multifunctional stimuli-responsive nanoparticles for delivery of small and macromolecular therapeutics. In Mahato, R.I. and Narang, A.S. (eds.). *Targeted Delivery of Small and Macromolecular Drugs*. Published by CRC Press, Inc., Boca Raton, FL, 2010 Chapter 20, pp 555-586.
- Iyer, A.K., Ganta, S., and **Amiji, M.M.** Polymeric nanoparticles as target-specific delivery systems. In Torchilin, V.P. and **Amiji, M.M.** (eds.). *Handbook of Materials for Nanomedicine: Volume 1*. Published by Pan Stanford Publishing, Singapore, 2010, Chapter 2, pp 81-130.
- Matthäus, C., Chernenko, T., Miljković, M., Quintero, L., Miljkovic, M., Milane, L., Kale, A., **Amiji, M.**, Torchilin, V., and Diem, M. Raman microspectral imaging of cells and intracellular drug delivery using nanocarrier systems. In Dieing, T., and Hollricher, O., and Toporski, J. (eds.). *Confocal Raman Microscopy*, Springer Series in Optical Science, Volume 158. Published by Springer Verlag, Heidelberg, Germany. 2010, pp. 137-163.

- Iftimia, N., **Amiji, M.**, Milane, L., and Oldenburg, A. Nanotechnology approaches for contrast enhancement in optical imaging and disease targeted therapy. In Iftimia, N., Brugge, W., and Hammer, D.X (eds.). *Advances in Optical Imaging for Clinical Medicine*, Chapter 16. Published by Wiley Publishing, New York, NY. 2011. Chapter 16, pp 455-504.
- Shahiwala, A., Vyas, T.K., and **Amiji, M.M.** Nanotechnology for targeted delivery of drugs and genes. In Nalwa, H.S. (Ed.). *Encyclopedia of Nanoscience and Nanotechnology, 2nd Edition*, Published by American Scientific Publishers, New York, NY. 2011. Volume 19, pp 265-295.
- Kalariya, M., Ganta, S., Attarwala, H., and **Amiji, M.** Multifunctional lipid nano-systems for cancer prevention and therapy. In Souto, E. (ed.). *Advanced Anticancer Approaches with Multifunctional Lipid Nanocarriers*. Published by iSmithers Rapra Publishing, Inc., Billingham, UK. 2011. Chapter 3, pp 29-54.
- Amiji, M.M.** Hornicek, F., and Duan, Z.-F. Gene silencing with nanoparticle-encapsulated siRNA to overcome tumor multidrug resistance. In Srirajaskanthan, R. and Preedy, V.R. (eds.). Published by *Nanomedicine and Cancer*. Science Publishers-CRC Press, Enfield, NH. 2012. Chapter 15, pp 290-306.
- Jain, S. and **Amiji, M.** Macrophage-targeted nanoparticle delivery systems. In Pru'dhomme, R.K. and Svenson, S. (eds.). *Multifunctional Nanoparticles for Drug Delivery Applications: Imaging, Targeting, and Delivery*. Published by Springer Publishing, New York, NY. 2012 Chapter 4, pp 47-84.
- Jain, S. and **Amiji, M.** Target-specific chitosan-based nanoparticle systems for nucleic acid delivery. In Sarmento, B. and das Neves, J. (eds.) *Chitosan-Based Systems for Biopharmaceuticals: Delivery, Targeting, and Polymer Therapeutics*. Published by John Wiley & Sons Publishing, Chichester, West Sussex, UK. 2012 Chapter 15, pp 277-300.
- Singh, A., Chernenko, T., and **Amiji, M.** Theranostic applications of plasmonic nanosystems. In Hepel, M. and Zhong, C.J. (eds.). *Functional Nanoparticles for Bioanalysis, Nanomedicine and Bioelectronic Devices. Volume 2*. Published by American Chemical Society Publications, Washington, DC. 2012 Chapter 15, pp 383-413.
- Iyer, A., Ganesh, S., Zhou, Q.L., and **Amiji, M.** Multifunctional polymeric nano-systems for RNA interference therapy. In Wang., W. and Singh, M. (eds.) *Biological Drug Products: Development and Strategies*. Published by John Wiley Publishers, Nutley, NJ. 2013 Chapter 18, pp 569-600.
- Singh, A., Iyer, A., Ganta, S., and **Amiji, M.** Multifunctional nanosystems for cancer therapy. In Park, K. (ed.). *Biomaterials for Cancer Therapeutics: Diagnosis, Prevention and Therapy*. Published by Woodhead Publishing, Inc., Cambridge, UK. 2013 Chapter 14, pp 387-414.
- Chernenko, T., Milane, L., Matthäus, C., Diem, M., and **Amiji, M.** Raman microspectral imaging for label-free detection of nanoparticle-mediated cellular and sub-cellular drug delivery. In Li, C. and Tian, M. (eds.). *Drug Delivery Applications of Non-Invasive Imaging: Validation from Biodistribution to Sites of Action*. Published by John Wiley & Sons Publishing, Hoboken, NJ. 2013 Chapter 4, pp 70-90.
- Jain, S., and **Amiji, M.** Nanoparticles-in-microsphere oral systems (NiMOS) for nucleic acid therapy in the gastrointestinal tract. In Sarmento, B. and das Neves, J. (eds.) *Mucosal Delivery of Biopharmaceuticals: Biology, Challenges and Strategies*. Published by Springer Science Publishing, New York, NY. 2014 Chapter 11, pp 283-312.

- Deshpande, D., Jamal-Allial, A., Sankhe, K., and **Amiji, M.** Nanotechnology applications in local arterial drug delivery. In Domb, A. and Khan, W. (eds). *Advances in Delivery Science and Technology - Focal Controlled Drug Therapy*. Published by the Controlled Release Society - Springer Science Publishing, New York, NY. 2014 Chapter 17, pp 359-385.
- Ganesh, S., Iyer, A.K., and **Amiji, M.M.** Combinatorial-designed hyaluronic acid nanoparticles for tumor targeted drug and small interfering RNA delivery. In Collins, M. (ed.). *Hyaluronic Acid for Biomedical and Pharmaceutical Applications*. Published by Simthens Rapra, Shrewsbury, The United Kingdom. 2014 Chapter 3, pp 57-88.
- Iyer, A.K., Ganesh, S., and **Amiji, M.M.** Nano-platforms for tumor-targeted delivery of nucleic acid therapies. In Alonso, M.J. and Fuentes, M.G. (eds). *Nano-Oncologicals: New Targeting and Delivery Approaches*. Published by the Controlled Release Society - Springer Publishing, New York, NY. 2014 Chapter 10, pp 269-291.
- Singh, A., Oka, A.J., Pandya, P., and **Amiji, M.M.** Multimodal nano-systems for cancer diagnosis, imaging, and therapy. In Alonso, M.J. and Fuentes, M.G. (eds). *Nano-Oncologicals: New Targeting and Delivery Approaches*. Published by the Controlled Release Society - Springer Publishing, New York, NY. 2014 Chapter 13, pp 351-388.
- Singh, A., Iyer, A., and **Amiji, M.** Polymeric nano-systems for integrated image-guided cancer therapy. In V.P. Torchilin (ed.). *Handbook of Nano-Biomedical Research: Fundamentals, Applications, and Recent Developments. Volume 1: Materials for Nanomedicine*. Published by World Scientific Publishing, Singapore. 2014 Chapter 6, pp 199-233.
- Ganta, S., Singh, A., Coleman, T.P., Williams, D., and **Amiji, M.** Pharmaceutical nanotechnology: overcoming drug delivery challenges in contemporary medicine. In Ge, Y., Li, S., Wang, S., and Moore, R. (eds.). *Nanomedicine: Principles and Perspectives - Volumes 1 & 2*. Published by Springer Publishing, New York, NY. 2014 Chapter 10, pp 191-236.
- Shah, R., Brito, L., Singh, M., O'Hagan, D., and **Amiji, M.** Emulsions as vaccine adjuvants. In Foged, C., Rades, T., Perrie, Y., and Hook, S. (eds). *Subunit Vaccine Delivery*. Published by the Controlled Release Society - Springer Publishing, New York, NY 2014 Chapter 4, pp 59-76.
- Shah, L., Iyer, A., Talekar, M., and **Amiji, M.** Image-guided delivery of therapeutics to the brain. In Devarajan, P. and Jain, S. (eds). *Targeted Drug Delivery – Concepts and Design*. Published by the Controlled Release Society - Springer Publishing, New York, NY 2015, Chapter 4, pp 151-178.
- Attarwala, H. and **Amiji, M.** Multi-compartmental oral delivery systems for oligonucleotide therapeutics. In Merkel, O.M. and **Amiji, M.M.** (eds). *Advances and Challenges in the Delivery of Nucleic Acid Therapeutics – Volume 2*. E-Book Published by Future Science, LTD, London, UK. 2015, Chapter 14, pp 71-86.
- Attarwala, H. and **Amiji, M.** Biodegradable polyester-based multi-compartmental delivery systems for oral nucleic acid therapy. In Majeti, R. (ed.). *Handbook of Polyester Drug Delivery Systems*. Pan Stanford Publishing, Singapore. (In press).
- Singh, A., Tran, T.H., and **Amiji, M.** Redox-responsive nano-delivery systems for cancer therapy. In V. Weissig and A. Prokop (eds.). *Advances in Nanotherapeutics for Cancer. Volume 3*. Published by Springer Publishing, New York, NY. 2016 (In press).

Peer-Reviewed Articles

- Amiji, M.,** Park, H., and Park, K. Study on the prevention of surface-induced platelet activation by albumin coating. *Journal of Biomaterials Science, Polymer Edition*, **3**: 375-388 (1992).
- Amiji, M.** and Park, K. Prevention of protein adsorption and platelet adhesion on surfaces by PEO/PPO/PEO triblock copolymers. *Biomaterials* **13**: 682-692 (1992).
- Amiji, M.** and Park, K. Surface modification by radiation-induced grafting of PEO/PPO/PEO triblock copolymers. *Journal of Colloid and Interface Science*, **155**: 251-255 (1993).
- Amiji, M.** and Park, K. Surface modification of polymeric biomaterials with poly(ethylene oxide), albumin, and heparin for reduced thrombogenicity. *Journal of Biomaterials Science, Polymer Edition*, **4**: 217-234 (1993).
- Knuth, K., **Amiji, M.**, and Robinson, J.R. Hydrogel delivery system for vaginal and oral applications: formulation and biological considerations. *Advances in Drug Delivery Reviews*, **11**: 137-167 (1993).
- Amiji, M.** and K. Park. Analysis on the surface adsorption of PEO/PPO/PEO triblock copolymers by radiolabelling and fluorescence techniques. *Journal of Applied Polymer Science*, **52**: 539-544 (1994).
- Amiji, M.M.** Permeability and blood compatibility properties of chitosan-poly(ethylene oxide) blend membranes for hemodialysis. *Biomaterials*, **16**: 593-599 (1995).
- Amiji, M.M.** Pyrene fluorescence study of chitosan self-association in aqueous solution. *Carbohydrate Polymers* **26**: 211-213 (1995).
- Amiji, M.**, Shah, E., and Boroujerdi, M. Photophysical characterization of insulin denaturation and aggregation at hydrophobic interfaces. *Drug Development and Industrial Pharmacy*, **21**: 1661-1669 (1995).
- Patel, V.R. and **Amiji, M.M.** pH-sensitive swelling and drug release properties of chitosan-poly(ethylene oxide) semi-interpenetrating polymer network. In R. Ottenbrite, S. Huang, and K. Park (eds.) *Hydrogels and Biodegradable Polymers for Bioapplications*. American Chemical Society Symposium Series Publication. Volume 627. American Chemical Society, Washington, DC. 1996, pp 209-220.
- Patel, V.R. and **Amiji, M.M.** Preparation and characterization of freeze-dried chitosan-poly(ethylene oxide) hydrogels for site-specific antibiotic delivery in the stomach. *Pharmaceutical Research* **13**: 588-593 (1996).
- Amiji, M.M.** Surface modification of chitosan membranes by complexation-interpenetration of anionic polysaccharides for improved blood compatibility in hemodialysis. *Journal of Biomaterials Science, Polymer Edition*, **8**: 281-298 (1996).
- Amiji, M.**, Tailor, R., Ly, M., and Goreham, J. Gelatin-poly(ethylene oxide) semi-interpenetrating polymer network with pH-sensitive swelling and enzyme-degradable properties for oral drug delivery. *Drug Development and Industrial Pharmacy*, **23**: 575-582 (1997).
- Amiji, M.M.** Synthesis of anionic poly(ethylene glycol) derivative for chitosan surface modification in blood-contacting applications. *Carbohydrate Polymers*, **32**: 193-199 (1997).
- Amiji, M.M.** Platelet adhesion and activation on an amphoteric chitosan derivative bearing sulfonate groups. *Colloids and Surfaces. Part B: Biointerfaces*, **10**: 263-271 (1998).
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- Qaqish, R.B. and **Amiji, M.M.** Synthesis of fluorescent chitosan derivative and its application for the study of chitosan-mucin interactions. *Carbohydrate Polymers* **38**: 99-107 (1999).
- Shah, S., Qaqish, R., Patel, V., and **Amiji, M.** Evaluation of the factors influencing stomach-specific delivery of antibacterial agents for *Helicobacter pylori* infection. *Journal of Pharmacy and Pharmacology*, **51**: 667-672 (1999).
- Anderson, D., Nguyen, T., and **Amiji, M.** Chitosan-Pluronic® physical interpenetrating network: membrane fabrication and protein permeability studies. In M. El-Nokaly and H. Soini (eds.). *Polysaccharides in Pharmaceutical and Cosmetic Applications*. American Chemical Society Symposium Series Publication, Volume 737. American Chemical Society, Washington, DC 1999, pp 178-186.
- McQueen, C., Silvia, A., Lai, P.K., and **Amiji, M.** Surface and blood interaction properties of poly(ethylene oxide)-modified chitosan microspheres. *S.T.P Pharma Sciences*. **10**: 95-100 (2000). [Year 2000 **thematic issue** on "Chitosan in Drug Delivery Systems"].
- Anderson, D., Nguyen, T., Lai, P.K., and **Amiji, M.** Evaluation of the permeability and blood-compatibility properties of membranes formed by physical interpenetration of chitosan with PEO/PPO/PEO triblock copolymers. *Journal of Applied Polymer Science*, **80**: 1274-1284 (2001).
- Anderson, D. and **Amiji, M.** Preparation and evaluation of sustained drug release from Pluronic® polyol rectal suppositories. *International Journal of Pharmaceutical Compounding*, **5**: 234-237 (2001).
- Lynn, D.M., **Amiji, M.M.**, and Langer, R. pH-responsive biodegradable polymer microspheres: rapid release of encapsulated material within the range of intracellular pH. *Angewandte Chemie, International Edition*, **40(9)**: 1707-1710 (2001).
- Amiji, M.M.**, Lai, P.-K., Shenoy, D.B., and Rao, M. Intratumoral administration of paclitaxel in an *in situ* gelling poloxamer 407 formulation. *Pharmaceutical Development and Technology*, **7(2)**: 195-202 (2002).
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- Nsereko, S. and **Amiji, M.** Localized delivery of paclitaxel in solid tumors from biodegradable chitin microparticle formulations. *Biomaterials*, **23(13)**: 2723-2731 (2002).
- Kaul, G. and **Amiji, M.** Long-circulating poly(ethylene glycol)-modified gelatin nanoparticles for intracellular delivery. *Pharmaceutical Research*, **19 (7)**: 1062-1068 (2002).
- Kaul, G., Potineni, A., Lynn, D.M., Langer, R., and **Amiji, M.M.** Surface-modified polymeric nanoparticles for tumor-targeted delivery. *surFACTS – Official Newsletter of Surfaces in Biomaterials Foundation*. **7(2)**: 1-6 (2002).
- Chawla, J.S. and **Amiji, M.M.** Biodegradable poly(epsilon-caprolactone) nanoparticles for tumor-targeted delivery of tamoxifen. *International Journal of Pharmaceutics*, **249 (1-2)**: 127-138 (2002).
- Taqieddin, E., Lee, C., and **Amiji, M.** Perm-selective chitosan-alginate hybrid microcapsules for enzyme immobilization technology. *Pharmaceutical Engineers – Journal of the International Society of Pharmaceutical Engineers*. **22 (6)**: 112-114 (2002).
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- Chawla, J.S. and **Amiji, M.M.** Cellular uptake and concentrations of tamoxifen upon administration in poly(epsilon-caprolactone) nanoparticles. *The AAPS PharmSci*, **5 (1)**: Article E3 (2003).
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- Hejazi, R. and **Amiji, M.** Stomach-specific anti-*H. pylori* therapy. II: Gastric residence studies of tetracycline-loaded chitosan microspheres in gerbils. *Pharmaceutical Development and Technology*, **8**: 253-262 (2003).
- Kaul, G., Lee-Parsons, C., and **Amiji, M.** Poly(ethylene glycol)-modified gelatin nanoparticles for intracellular delivery. *Pharmaceutical Engineers – Journal of the International Society of Pharmaceutical Engineers*. **23 (5)**: 108-114 (2003).
- Taqieddin, E. and **Amiji, M.** Enzyme immobilization in novel alginate-chitosan core-shell microcapsules. *Biomaterials*, **25 (10)**: 1937-1945 (2004).
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- Xu, J. and **Amiji, M.M.** Gene delivery and transfection in human pancreatic cancer cells using epidermal growth factor receptor-targeted gelatin nanoparticles. *The AAPS Journal*, **12**: S2, (2010).

INTRAMURAL AND EXTRAMURAL RESEARCH SUPPORT (Total = \$38M, as PI = \$18M)

Current Funding

Source: National Cancer Institute of the National Institutes of Health proposal in response to the NCI's Alliance for Nanotechnology in Cancer RFA CA-09-013 "Cancer Nanotechnology Platform Partnership U01 Grant" program (1U01-CA151452)

Title: Combinatorial-Designed Nano-Platforms to Overcome Tumor Drug Resistance

Amount: \$2,317,537 (total)

Duration: September, 2010 – August, 2016 (with NCE)

Role: Principle Investigator

Source: National Science Foundation, Interdisciplinary Graduate Education and Training (IGERT) Grant (DGE-0965843)

Title: IGERT-Nanomedical Science and Technology

Amount: \$3,178,512 (total)

Duration: September, 2010 – August, 2016 (with NCE)

Role: Co-Principal Investigator (PI: Prof. Srinivas Sridhar, The Nanomedicine Education and Research Consortium (NERC), Northeastern University)

Source: Nemucore Medical Innovations, Inc., Wellesley, MA. Sub-Contract of NCI proposal in response to Request for Application "Academic-Industrial Partnerships for Translation of In Vivo Imaging Systems for Cancer Investigations (R01)" PAR-10-169 (1R01-CA158881)

Title: Integrated Image-Guided Targeted Therapy for Refractory Ovarian Cancer

Amount: \$3,138,368 (total), NU share: \$823,893

Duration: April, 2011 – March, 2016

Role: Principal Investigator

Source: National Institute of General Medical Sciences, National Institutes of Health R01 grant in response to RFA "PAR-10-142 Interface of the Life and Physical Sciences" (1R01-GM098117)

Title: Impact of Lipids on Compound Absorption: Mechanistic Studies and Modeling

Amount: \$2,315,953 (total); Co-PI Share: \$238,330

Duration: July, 2012 – June, 2017

Role: Co-Investigator (PI: Rebecca Carrier, Department of Chemical Engineering, Northeastern University)

Source: National Institute of Diabetes, and Digestive Diseases, and Kidney Diseases (NIDDK) of the National Institutes of Health. (1 R01 DK098655)

Title: Hepatic Insulin Resistance and Metabolic Disease

Amount: \$2,427,993 (total), NU share: \$212,447

Duration: April 1, 2013 – March 31, 2018

Role: PI of NU Sub-Contract (PI: Morris F. White, Children's Hospital/Harvard Medical School, Boston, MA)

Source: National Cancer Institute of the National Institutes of Health, R21 Proposal in response to PAR13-146 "NCI Exploratory/Developmental Research Grant Program (NCI Omnibus R21)". (R21 proposal CA-179652-A1).

Title: Targeted Platinates/siRNA Combination Therapy for Resistant Lung Cancer

Amount: \$427,625 (total)

Duration: April 1, 2014 – March 31, 2016

Role: Principal Investigator

Source: National Institute of Diabetes, and Digestive Diseases, and Kidney Diseases (NIDDK) of the National Institutes of Health.

Title: Heat Shock Protein 90 in Alcoholic Liver Disease: Targeting Macrophage Function

Amount: \$1,570,350 (total), NU Share: \$75,000

Duration: August 1, 2015 – July 31, 2020

Role: PI of NU Sub-Contract (PI: Pranoti Mandrekar, University of Massachusetts Medical School, Worcester, MA)

Source: Northeastern University-Houston Methodist Research Institute Collaboration Grant

Title: Non-Viral Telomerase Gene Therapy in Progeria

Amount: \$75,000 (total)

Duration: August 1, 2015 – July 31, 2016

Role: Principal Investigator (in Collaboration with Dr. John P. Cooke, Houston Methodist Research Institute, Houston, TX)

Source: Glaxo-Smith Kline Vaccines, Cambridge, MA

Title: Pharm Sci Industrial Graduate Fellowship Program (designated to Mr. Rushit Lodaya)

Amount: \$165,000 (total)

Duration: October, 2015 – September, 2018

Role: Principal Investigator

Source: Dicerna Pharmaceuticals, Inc. Cambridge, MA

Title: Pharm Sci Industrial Graduate Fellowship Program (designated to Ms. Dongyu Chen)

Amount: \$165,000 (total)

Duration: October, 2015 – September, 2018

Role: Principal Investigator

Source: Targagenix, Inc., Stony Brook, NY - Sub-Contract of NCI SBIR Contract

Title: Nanoemulsion Formulation and IND Enabling Studies of a Novel Cancer Stem Cell Cytotoxic Agent

Amount: \$330,000 (total)

Duration: November, 2015 – October, 2018

Role: Principal Investigator

Past Funding

Source: National Institutes of Health, Biomedical Research Support Grant

Title: Prevention of Protein Adsorption on Poly(Ethylene Oxide)-Modified Surfaces

Amount: \$2,000 (total).

Duration: June, 1993 - May, 1994

Role: Principal Investigator

Source: Northeastern University, 1995 Research and Scholarship Development Fund

Title: Development of Blood-Compatible Hemodialysis Membranes from Chitosan

Amount: \$10,000 (total)

Duration: July, 1995 - December, 1996 (with 6-months no-cost extension)

Role: Principal Investigator

Source: Bristol-Myers Squibb Pharmaceutical Research Institute, Kenilworth, NJ.

Title: Development of Novel Thermogelling System for Localized Delivery of Taxol®

Amount: \$8,000 (total)

Duration: July, 1996 - June, 1997

Role: Principal Investigator.

Source: Roche Laboratories, Inc., Nutley, NJ.

Title: HPLC Assay Development for Mycophenolic Acid and Mycophenolic Acid Glucuronide

Amount: \$10,000 (total)

Duration: July 1996 - December, 1996

Role: Co-Principal Investigator (PI: Prof. Rafaat Seifeldin, Department of Pharmacy Practice, Northeastern University)

Source: Northeastern University, Honors Program Research Funds

Title: Undergraduate Honors Students Research Initiatives

Amount: \$5,000.

Duration: July 1997 - June 1999.

Role: Principal Investigator.

Source: Pharmaceutical Research and Manufacturers of America Foundation, Undergraduate Pharmaceutics Research Fellowship. (On behalf of Ms. Phung-Kim Lai, B.S. student in the class of 1999).

Title: Novel Thermogelling Paclitaxel Formulation for Intra-Tumoral Delivery

Amount: \$5,000 (total)

Duration: January, 1999 - December, 1999

Role: Principal Investigator.

Source: Northeastern University, 1999 Research and Scholarship Development Fund

Title: Stomach-Specific Antibiotic Delivery for *H. pylori* Infection

Amount: \$10,000 (total)

Duration: July, 1999 - June, 2000

Role: Principal Investigator

Source: EOS Pharmaceuticals Corporation, Woburn, MA (through National Institutes of Health, Small Business Innovation Research Program, Phase I Grant)

Title: Stomach-Specific Anti-*H. pylori* Therapy

Amount: \$50,000 (total, ~ 45% of the total SBIR funding)

Duration: July, 2000 – June, 2001

Role: Principal Investigator

Source: American Association of Pharmaceutical Scientists and American Foundation for Pharmaceutical Education, 2000-2001 "Gateway" Research Scholar Program. (On behalf of Mr. Chi-Sing Nip, Pharm.D. student, Class of 2001)

Title: Perm-selective Membranes from Chitosan for Extracorporeal Removal of β -2-Microglobulin

Amount: \$5,000 (total)

Duration: July, 2000 – June, 2001

Role: Principal Investigator

Source: Braintree Laboratories, Inc., Braintree, MA

Title: Analysis of Phosphate Binding to Cationic Polymers

Amount: \$31,000 (total)

Duration: December, 2000 – June, 2001

Role: Principal Investigator

Source: Pharmaceutical Research and Manufacturers of America Foundation, Undergraduate Pharmaceutics Research Fellowship. (On behalf of Ms. Erica J. Waugh, Pharm.D. student in the class of 2002)

Title: Novel Biodegradable Long-Circulating Nanoparticles for Tumor-Selective Drug Delivery

Amount: \$5,000 (total)

Duration: January, 2001 – December, 2001

Role: Principal Investigator

Source: Braintree Laboratories, Inc., Braintree, MA

Title: Chitosan-Iron Complexes as Polymeric Phosphate Binders

Amount: \$15,000 (total)

Duration: January, 2002 – June, 2002

Role: Principal Investigator

Source: Northeastern University, Undergraduate Research Fund. (On behalf of Ms. Nikita Mody, Pharm.D. student in the class of 2004)

Title: Tumor-Selective Gene Delivery Systems

Amount: \$3,000 (total)

Duration: January, 2002 – June, 2002

Role: Principal Investigator

Source: Northeastern University, 2002 Research and Scholarship Development Fund
Title: Immobilized Enzyme System for Detection and Detoxification of Chemical Warfare Agents
Amount: \$5,006 (total)
Duration: July, 2002 - June, 2003
Role: Principal Investigator

Source: Alfred P. Sloan Foundation, New York, NY
Title: Multi-Track Professional Masters Degree Program in Biotechnology
Amount: \$75,000 (total)
Duration: July, 2002 – June 2004 (with one year no-cost extension)
Role: Co-Investigator (PI: Prof. William Detrich, Department of Biology, Northeastern University).

Source: Boston Scientific Corporation. Watertown, MA
Title: Drug Interactions with Poly(vinyl alcohol) Embolic Microspheres: Part I
Amount: \$33,256 (total)
Duration: February, 2003 – December, 2003
Role: Principal Investigator

Source: National Cancer Institute, National Institutes of Health (R01-CA95522-01A2)
Title: Long-Circulating Tumor-Selective DNA Delivery Systems
Amount: \$744,100 (total)
Duration: July, 2003 – June, 2007* (with one-year no-cost extension)
Role: Principal Investigator

Source: National Science Foundation, Major Research Instrumentation Grant (MRI-0320638)
Title: Acquisition of Scanning Electron Microscope for Nanoscience and Biotechnology
Amount: \$477,846 (total)
Duration: July, 2003 – June, 2004
Role: Co-Investigator (PI: Prof. Donald Heiman, Department of Physics, Northeastern University)

Source: Roger Williams Medical Center, Providence, RI. Subcontract of the Department of Defense Grant DAMD17-03-0716
Title: Drug Encapsulation in Poly(Epsilon-Caprolactone) Nanoparticles
Amount: \$20,119 (total)
Duration: October, 2003 – September, 2005 (with one year no-cost extension)
Role: Principal Investigator

Source: Boston Scientific Corporation. Watertown, MA
Title: Drug Interactions with Poly(vinyl alcohol) Embolic Microspheres: Part II
Amount: \$44,865 (total)
Duration: February, 2004 – December, 2004
Role: Principal Investigator

Source: American Foundation for Pharmaceutical Education, Undergraduate Gateway Research Scholarship. (On Behalf of Ms. Stephanie Whalen, PharmD Class of 2006)
Title: Novel Gold Nanoparticle Sensor for Non-invasive Glucose Measurements
Amount: \$5,000 (total)
Duration: June, 2004 – December, 2004

Role: Principal Investigator

Source: Boston Scientific Corporation, Natick, MA

Title: Preparation and Characterization of Drug-Loaded SIBS Copolymer Microsphere Formulations

Amount: \$100,019 (total)

Duration: October, 2004 – December, 2005 (with no-cost extension)

Role: Principal Investigator

Source: Novavax, Inc., Malvern, PA.

Title: Nanocarrier Formulation Optimization Studies

Amount: \$60,543 (total)

Duration: May, 2005 – December, 2005

Role: Principal Investigator

Source: American Foundation for Pharmaceutical Education, Undergraduate Gateway Research Scholarship. (On Behalf of Mr. Zeu Hong Tzeng, PharmD Class of 2007)

Title: Thiolated Gelatin Nanoparticles for Intracellular siRNA Delivery

Amount: \$5,000 (total)

Duration: July, 2005 – June, 2006

Role: Principal Investigator

Source: Northeastern University, 2005 Research and Scholarship Fund

Title: Functionalized Gold Nanoparticles as Novel Mitochondria-Targeted Vectors

Amount: \$15,000 (total)

Duration: July, 2005 – June, 2006

Role: Co-Investigator (PI: Prof. Volkmar Weissig, Department of Pharmaceutical Sciences, Northeastern University)

Source: Transport Pharmaceuticals, Inc., Framingham, MA

Title: Evaluation of Formulation Properties Used in Iontophoretic Drug Delivery Device

Amount: \$58,875 (total)

Duration: August, 2005 – July, 2006

Role: Principal Investigator

Source: Boston Scientific Corporation. Malborough, MA

Title: Drug Interactions with Poly(vinyl alcohol) Embolic Microspheres: Part III

Amount: \$125,208 (total)

Duration: March, 2006 – February, 2007

Role: Principal Investigator

Source: Transport Pharmaceuticals, Inc., Framingham, MA

Title: Evaluation of Formulation Properties Used in Iontophoretic Drug Delivery Device: Part II

Amount: \$72,952 (total)

Duration: August, 2006 – July, 2007

Role: Principal Investigator

Source: Parsalus Pharmaceuticals, Inc., Boston, MA

Title: Preliminary Micellar Characterization Studies of Lipopeptide Molecules

Amount: \$12,372 (total)

Duration: October, 2007 – January, 2008

Role: Principal Investigator

Source: The Michael J. Fox Foundation for Parkinson's Research

Title: Feasibility of Intranasal Delivery of GDNF for Parkinson's Disease

Amount: \$74,800 (total)

Duration: November, 2007 – December, 2008

Role: Co-Investigator (PI: Prof. Barbara Waszczak, Department of Pharmaceutical Sciences, Northeastern University)

Source: Microfluidics, Inc., Newton, MA

Title: HPLC Studies of Drug Encapsulation in Polymeric Nanoparticle Formulations

Amount: \$13,549 (total)

Duration: May, 2008 – July, 2008

Role: Principal Investigator

Source: BioCure, Inc., Norcross, GA

Title: Cellular Uptake and Trafficking Properties of siRNA-Loaded Polymeric Nano-Vesicles

Amount: \$28,414 (total)

Duration: July, 2008 – June, 2009

Role: Principal Investigator

Source: National Cancer Institute of the National Institutes of Health, Nanotechnology Characterization Laboratory, Frederick, MD.

Title: Multifunctional Nanoemulsions for Brain Tumor Imaging and Therapy

Amount: Undisclosed (complete preclinical characterization studies)

Duration: July, 2006 – December, 2009

Role: Principal Investigator

Source: National Cancer Institute of the National Institutes of Health, Nanotechnology Characterization Laboratory, Frederick, MD.

Title: Engineered Gelatin-Based Nanovectors for Pancreatic Cancer Gene Therapy

Amount: Undisclosed (complete preclinical characterization studies)

Duration: July, 2007 – December, 2009

Role: Principal Investigator

Source: Physical Sciences, Inc., Andover, MA. Sub-Contract of the National Cancer Institute STTR Phase I Application in response to RFA "Image Guided Cancer Interventions" (STTR R41/R42) (1R41-CA132256-01).

Title: Endoscopically Guided OCT Imaging for Early Cancer Screening

Amount: 87,933 (total)

Duration: May, 2008 – December, 2009

Role: Principal Investigator of NU Sub-contract (PI: Dr. Nick Iftemia, Physical Sciences, Inc., Andover, MA)

Source: BioCure, Inc., Norcross, GA. Sub-contract funding from the National Cancer Institute Phase I SBIR contract.

Title: Targeted Multifunctional Polymersomes for Cancer Therapy

Amount: \$66,958 (total)

Duration: September, 2009 – June, 2010

Role: Principal Investigator

Source: Physical Sciences, Inc., Andover, MA. Sub-Contract of the National Cancer Institute STTR Phase I Application in response to RFA "Image Guided Cancer Interventions" (STTR R41/R42) (1R41-CA135911-01).

Title: Enhanced Contrast Optical Imaging for Screening of Early Stage Pancreatic Cancer

Amount: \$115,071 (total)

Duration: August, 2008 – July, 2010

Role: Principal Investigator of NU Sub-contract (PI: Dr. Nick Iftemia, Physical Sciences, Inc., Andover, MA)

Source: National Cancer Institute/National Science Foundation, Interdisciplinary Graduate Education and Training (IGERT) Grant (DGE-0504331)

Title: IGERT-Nanomedical Science and Technology

Amount: \$3,320,168 (total)

Duration: October, 2005 – September, 2010

Role: Co-Investigator (PI: Prof. Srinivas Sridhar, The Nanomedicine Education and Research Consortium (NERC), Northeastern University)

Source: National Cancer Institute of the National Institutes of Health. R01 proposal in response to NCI's Alliance for Nanotechnology in Cancer RFA "Cancer Nanotechnology Platform Partnership Grant" program (1R01-CA119617-01)

Title: Nanotherapeutic Strategy for Multidrug Resistant Tumors

Amount: \$1,329,399 (total)

Duration: October, 2005 – July, 2011 (with no-cost extension)

Role: Principle Investigator

Source: National Cancer Institute of the National Institutes of Health. ARRA Administrative Supplement for "Cancer Nanotechnology Platform Partnership Grant" (1R01-CA119617-S1)

Title: Nanotherapeutic Strategy for Multidrug Resistant Tumors

Amount: \$200,000 (total)

Duration: August, 2009 – July, 2011 (with no-cost extension)

Role: Principle Investigator

Source: Forsyth Institute, Boston, MA. Sub-Contract of the National Institute of Dental and Craniofacial Research's R21 Proposal in Response to Program Announcement PA-03-107 "NIH Exploratory/Developmental Research Grant Program" (1R21-DE018782-01A2).

Title: Nanoparticle-Based Antimicrobial Photochemotherapy in Biofilms

Amount: \$140,092 (Sub-contract total)

Duration: August, 2009 – July, 2011

Role: Principal Investigator on NU Subcontract (PI: Dr. Nikos Soukos, Forsyth Institute, Boston, MA)

Source: Medix Corporation, Mexico City, Mexico

Title: Stomach-Specific Non-Antibiotic *H. pylori* Therapy

Amount: \$399,759 (total)

Duration: October, 2008 – May, 2012 (with NCE)

Role: Principal Investigator

Source: Nemucore Medical Innovations, Inc., Sub-Contract of NCI Phase 1 SBIR grant.

Title: EGFR-Targeted Nanoemulsions for Imaging and Therapy of Ovarian Cancer

Amount: \$ 79,310

Duration: September, 2010 – August, 2012

Role: Principle Investigator on NU Sub-Contract

Source: National Cancer Institute of the National Institutes of Health, R21 Proposal in response to RFA PAR-07-034 "Nanoscience and Nanotechnology in Biology and Medicine". (1R21-CA135594)

Title: Nano-Delivery of Mitochondria-Targeted Ceramide to Overcome Tumor Drug Resistance

Amount: \$355,232 (total)

Duration: January, 2010 – December, 2012 (with NCE)

Role: Principal Investigator

Source: National Institute of Diabetes, and Digestive Diseases, and Kidney Diseases (NIDDK) of the National Institutes of Health. R01 proposal in response to RFA “*Nanoscience and Nanotechnology in Biology and Medicine*” program (1R01-DK080477).

Title: Oral Gene Therapy with NiMOS for Inflammatory Bowel Disease

Amount: \$1,334,500 (total)

Duration: March, 2008 – February, 2013 (with NCE)

Role: Principle Investigator

Source: National Institute of Neurological Disorders and Stroke of the National Institutes of Health, R21 Proposal in response to RFA PAR-08-232 “*NINDS Exploratory/Developmental Projects in Translational Research (R21)*”. (1R21-NS066984)

Title: Multifunctional Nanoemulsions for Modulation of BBB Transport

Amount: \$429,000 (total)

Duration: February, 2010 – April, 2013 (with NCE)

Role: Principal Investigator

Source: Northeastern University-Dana Farber Cancer Institute Joint Research Program

Title: Evaluating Synergy between Inhibition of Replication and Promotion of Apoptosis in the Treatment of Ovarian Cancer

Amount: \$100,000 (total)

Duration: July 1, 2012 – June 31, 2014

Role: Principal Investigator (in Collaboration with Dr. Michael Goldberg, Dana-Farber Cancer Institute)

Source: Merrimack Pharmaceuticals, Inc., Cambridge, MA

Title: *In Vivo* Imaging Study

Amount: \$35,000 (total)

Duration: August 1, 2014 – June, 2015

Role: Principal Investigator

Source: Novartis Vaccine and Diagnostics, Cambridge, MA

Title: Pharm Sci Industrial Graduate Fellowship Program (designated to Ms. Ruchi Shah)

Amount: \$159,300 (total)

Duration: May, 2012 – August, 2015

Role: Principal Investigator

Source: Northeastern University Tier-1 Grant

Title: A Cyber-Physical Platform for Rapid Development of Nano-Delivery Systems

Amount: \$50,000 (total)

Duration: July 1, 2014 – December, 2015

Role: Principal Investigator (in Collaboration with Dr. Ravi Sundaram, College of Computer and Information Science, Northeastern University)

Source: National Cancer Institute of the National Institutes of Health proposal in response to NCI's Alliance for Nanotechnology in Cancer RFA CA-09-012 "Center of Cancer Nanotechnology Excellence (CCNE) U54 Grant" program (1U54-CA151881. Project #3).

Title: Multi-Modal Therapy for Pancreatic Cancer with Targeted Nanovectors

Amount: \$1,420,972 (total project funding); \$13.9 million (total CCNE funding)

Duration: September, 2010 – December 2015 (with NCE)

Role: Principle Investigator of Project #3 (CCNE PI: Prof. Vladimir Torchilin, Department of Pharmaceutical Sciences, Northeastern University)

PATENTS AND INVENTION DISCLOSURES

Amiji, M.M. "Biocompatible Articles and Method of Making Same". United States Patent Number 5,885,609. Issued: March 1999.

Amiji, M.M. "Drug Delivery Using pH-Sensitive Semi-Interpenetrating Network Hydrogels". United States Patent Number 5,904,927. Issued: May 1999.

Langer, R.S., Lynn, D.M., Putnam, D., **Amiji, M.M.**, and Anderson, D.G. "Biodegradable Poly(Beta-Amino Esters) and Uses Thereof". United States Patent Number 6,998,115. Issued: February, 2006.

Langer, R.S., Lynn, D.M., Putnam, D., **Amiji, M.M.**, and Anderson, D.G. "Biodegradable Poly(Beta-Amino Esters) and Uses Thereof". European Patent Application. (Serial number 019775410-2115-US0131270, Filed: October, 2001).

Amiji, M.M. and Taqieddin, E.S. "Hybrid Immobilized Catalytic System with Controlled Permeability" United States Patent Application US2004/0266026, Pending (Filed: January, 2003).

Amiji, M.M., Shenoy, D.B., and van Vlerken, L.E. "Nanoparticulate Delivery Systems for Treating Multi-drug Resistance". United States Patent Application, US2006/0257493, Pending (Filed: April, 2006).

Amiji, M.M. and Tiwari, S.K. "Novel Nanoemulsion Formulations" United States Patent Application US2007/0148194, Pending (Filed: November, 2006).

Hirt, T., Lu, Z., Meir, W., and **Amiji, M.** "Mucoadhesive Vesicles for Drug Delivery". PCT and United States Patent Application PCT/US2008/12/157,144. Pending (Filed: August, 2008).

Hanson, R., **Amiji, M.**, and Weissig, V. "Precision-Guided Nanoparticle System for Drug Delivery" PCT and United States Patent Application PCT/US2008/01766, Pending (Filed: February, 2008).

Amiji, M. and Iyer, A.K. "Multi-Functional Self-Assembling Polymeric Nanosystems". PCT and United States Patent Application US200961/246,355 and WO 2010042823-A1 Pending (Filed: September, 2009).

Amiji, M., Kalariya, M., Jain, S., and Attarwala, A. "Multi-Compartmental Macrophage Delivery". PCT and United States Patent Application US 20130243689-A1 and WO 2011119881-A1, Pending (Filed: March, 2011).

Amiji, M., Ganta, S., and Tsai, P.-C. "Multimodal Diagnostic Technology for Early Stage Cancer Lesions". PCT and United States Patent Application US 20130224120-A1 and WO 2011119822-A1, Pending (Filed March, 2011).

Amiji, M. and Iyer, A.K. "Biodegradable Polymeric Buffers". PCT and United States Patent Application WO 2014008283-A3, Pending (Filed: July, 2013).

Amiji, M. and Singh, A. "*Releasable Magnetic Cell Capture Technology*". PCT and United States Patent Application WO 2014110578-A1, Pending (Filed: January, 2014).

Amiji, M., Trivedi, M., and Singh, A. "*Mitochondrial Reprogramming by Non-Viral Nucleic Acid Delivery*". Provisional United States Patent Application (Filed: September, 2014).

Amiji, M., Singh, A., Nascimento, A.V., and Su, M.J. "*Cellular Reprogramming by Modulation of Extracellular Vesicle (Exosome) Composition*". Provisional United States Patent Application (Filed: September, 2014).

PRESENTATIONS

American Association of Pharmaceutical Scientists Annual Meeting, Orlando, FL. Poster presentation entitled "*Adsorption Isotherms of Doxorubicin on Oxidized Dextran*". November, 1988.

Controlled Release Society Annual Meeting, San Francisco, CA. Podium presentation entitled "*Mucoadhesive Hydrogels Effective at Neutral pH*". March, 1989.

Society for Biomaterials Annual Meeting, Santa Fe, NM. Podium presentation entitled "*The Minimum Amount of Biologically Active Fibrinogen Necessary for Surface-Induced Platelet Activation*". April, 1989.

NIH Conference on Cardiovascular Science and Technology, Bethesda, MD. Podium presentation entitled "*Mechanism of Surface Passivation by Albumin*". May 1990.

Surfaces in Biomaterials Foundation First Annual Meeting, Minneapolis, MN. Podium presentation entitled "*Mechanism Study on the Prevention of Surface-Induced Platelet Activation by Adsorbed Albumin*". March, 1991.

Society for Biomaterials Annual Meeting, Scottsdale, AZ. Podium presentation entitled "*Prevention of Protein Adsorption and Platelet Adhesion by Steric Repulsion*". May, 1991.

American Chemical Society National Meeting, Washington, DC. Podium presentation entitled "*Surface Passivating Effect of PEO/PPO/PEO Triblock Copolymers*". August, 1992.

American Chemical Society National Meeting, Washington, DC. Podium presentation entitled "*Analysis on the Surface Adsorption of PEO/PPO/PEO Triblock Copolymers*". August, 1992.

American Association of Pharmaceutical Scientists Annual Meeting, San Antonio, TX. Podium presentation entitled "*Prevention of Protein Adsorption on Surfaces by PEO/PPO/PEO Triblock Copolymers*". November, 1992.

Society for Biomaterials Annual Meeting, Boston, MA. "*Adsorption Behavior of PEO/PPO/PEO Triblock Copolymers on DDS-Glass*". April, 1994.

Society for Biomaterials Annual Meeting, Boston, MA. Podium presentation entitled "*Development of Poly(ethylene oxide)-Chitosan Blend Membranes for Hemodialysis*". April, 1994.

American Chemical Society Annual Meeting, Washington, DC, Podium presentation entitled "*Chitosan-Poly(ethylene oxide) Semi-IPN as a pH-Sensitive Drug Delivery System*". August, 1994.

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- American Association of Pharmaceutical Scientists Annual Meeting, Orlando, FL. Podium presentation entitled *"Pyrene Fluorescence Study of Insulin Denaturation and Aggregation at Hydrophobic Interfaces"*. November, 1994.
- Controlled Release Society Annual Meeting, Seattle, WA. Poster presentation entitled *"Chitosan-Poly(Ethylene Oxide) Hydrogels for pH-Sensitive Oral Drug Delivery"*. August, 1995.
- American Chemical Society's Conference on Formulations and Drug Delivery, Boston, MA. Podium presentation entitled *"Site-specific Oral Delivery of Antibiotics using pH-Sensitive Hydrogels"*. October, 1995.
- American Association of Pharmaceutical Scientists, Eastern Regional Meeting, New Brunswick, NJ. Poster presentation entitled *"Site-Specific Delivery of Antibiotics for the Treatment of Helicobacter pylori Infection in Peptic Ulcer Disease"*. June, 1995.
- Fifth World Biomaterials Congress, Toronto, Ontario, Canada. Podium presentation entitled *"Surface Modification of Chitosan Hemodialysis Membranes with Anionic Polysaccharides"*. June, 1996.
- Surfaces in Biomaterials '96 Symposium, Chandler, AZ. Poster presentation entitled *"Modification of Chitosan Membrane Surfaces by Complexation-Interpenetration of Anionic Polysaccharides"* September, 1996.
- Nineteenth Annual Undergraduate Research Seminar, Morgantown, WV. Poster presentation entitled *"Factors Influencing Stomach-Specific Antibiotic Delivery for H. pylori Infection"*. October, 1997.
- First International Symposium on Advanced Biomaterials, Montréal, Quebec, Canada. Podium presentation entitled *"Chitosan Surface Modification with Anionic Poly(Ethylene Glycol) Derivative for Improved Blood Compatibility."* October, 1997.
- American Association of Pharmaceutical Scientists Annual Meeting, Boston, MA. Poster presentation entitled *"The Role of Gastric pH and Mucin Permeability on Localized Antibiotic Delivery for H. pylori Infection"*. November, 1997.
- American Association of Pharmaceutical Scientists Annual Meeting, Boston, MA. Poster presentation entitled *"Mucoadhesive Chitosan Microspheres for Stomach-Specific Antibiotic Delivery"*. November, 1997.
- American Association of Pharmaceutical Scientists Annual Meeting, Boston, MA. Poster presentation entitled *"Surface Modification of Chitosan by Polyelectrolyte Complexation-Interpenetration to Improve Biocompatibility"*. November, 1997.
- Society for Biomaterials Annual Meeting, Providence, RI. Podium presentation entitled *"Novel Thermogelling Paclitaxel Formulation for Localized Delivery"*. May, 1999.
- Society for Biomaterials Annual Meeting, Providence, RI. Podium presentation entitled *"Surface Modification of Chitosan Microspheres to Improve Biocompatibility"*. May, 1999.
- Controlled Release Society Annual Meeting, Boston, MA. Poster presentation entitled *"Membranes Formed by Physical Interpenetration of Chitosan with PEO/PPO/PEO Triblock Copolymers"*. June, 1999.
- American Association of Pharmaceutical Sciences Annual Meeting. Indianapolis, IN. Poster presentation entitled *"Preparation and Characterization of Cross-linked Chitosan Microspheres for Delivery of Tetracycline Locally in the Stomach"*. November, 2000.
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- American Association of Pharmaceutical Sciences, Pharmaceutical Congress of the Americas, Orlando, FL. Poster presentation entitled *"Intratumoral Administration of Paclitaxel in a Thermogelling Pluronic® F-127 Formulation"*. March, 2001.
- American Association of Pharmaceutical Sciences, Pharmaceutical Congress of the Americas, Orlando, FL. Poster presentation entitled *"Biodegradable Chitin-Paclitaxel Microparticle Formulations for Localized Drug Delivery"*. March, 2001.
- American Association of Pharmaceutical Scientists, Pharmaceutical Congress of the Americas, Orlando, FL. Poster presentation entitled *"Permselective Membranes Prepared by Physical Interpenetration of Chitosan with PEO/PPO/PEO Triblock Copolymers"*. March, 2001.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled *"Poly(epsilon-caprolactone) Nanoparticles for Intracellular Delivery of Tamoxifen"*. April, 2001.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled *"Poly(ethylene glycol)-Modified Gelatin Nanoparticles as Long-Circulating Intracellular Delivery Vehicle"*. April, 2001.
- American Association of Pharmaceutical Scientists Annual Meeting, Denver, CO. Poster presentation entitled *"Poly(epsilon-caprolactone) Nanoparticles for Intracellular Delivery of Tamoxifen"*. October, 2001.
- American Association of Pharmaceutical Scientists Annual Meeting, Denver, CO. Poster presentation entitled *"Perm-Selective Alginate-Chitosan Hybrid Microcapsules for Enzyme Immobilization"*. October, 2001.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled *"Long-Circulating, pH-Sensitive Poly(beta-amino ester) Nanoparticles for Tumor-Selective Paclitaxel Delivery"*. April, 2002.
- American Association of Pharmaceutical Scientists Annual Meeting, Toronto, Ontario, Canada. Poster presentation entitled *"Cellular Uptake, Trafficking, and DNA Transfection Studies with Poly(ethylene glycol)-Modified Gelatin Nanoparticles"*. November, 2002.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled *"In Vitro Evaluation of DNA Delivery to Tumor Cells Using Poly(ethylene glycol)-Modified Gelatin Nanoparticles"*. April, 2003.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled *"Effect of Chemical Cross-linking of Chitosan Microspheres on Gastric Residence and Local Tetracycline Concentrations in Fasted Gerbils for Local Treatment of H. pylori Infection"*. April, 2003.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled *"Chitosan Stabilized Colloidal Gold Complexes: Cationic Probes for Intracellular DNA Trafficking and Delivery"*. April, 2003.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled *"Plasmid DNA Encapsulation in a Hybrid Nanoparticles-in-Microsphere System for Oral Delivery"*. April, 2004.
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- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled *"Preparation of Thiolated Gelatin Nanoparticles for Rapid Intracellular Delivery in Response to Glutathione"*. April, 2004.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled *"Polymeric Nanoparticles for Targeted and Controlled Tamoxifen Delivery in Breast Cancer: In Vitro and In Vivo Investigations"*. April, 2004.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled *"Biodistribution and Targeting Potential of Poly(ethylene glycol)-Modified Gelatin Nanoparticles in Tumor-Bearing Mice"*. April, 2004.
- American Association of Pharmaceutical Scientists Annual Meeting, Baltimore, MD. Poster presentation entitled *"Polymeric Nanoparticles for Targeted and Controlled Tamoxifen Delivery in Breast Cancer: In-vitro and In-vivo Investigations"*. November, 2004.
- American Association of Pharmaceutical Scientists Annual Meeting, Baltimore, MD. Poster presentation entitled *"Preparation of Thiolated Gelatin Nanoparticles for Rapid Intracellular Delivery in Response to Glutathione"*. November, 2004.
- American Association of Pharmaceutical Scientists Annual Meeting, Baltimore, MD. Poster presentation entitled *"Biodistribution and Targeting Potential of Poly(ethylene glycol)-Modified Gelatin Nanoparticles in Tumor-Bearing Mice"*. November, 2004.
- American Association of Pharmaceutical Scientists Annual Meeting, Baltimore, MD. Poster presentation entitled *"Nanoparticles-in-Microsphere Hybrid Systems for Oral DNA Vaccine Delivery"*. November, 2004.
- Materials Research Society Fall National Meeting, Boston, MA. *"Biomedical Applications of Gold Nanoparticles Functionalized Using Hetero-Bifunctional Poly(ethylene glycol) Spacer"*. December, 2004.
- Materials Research Society Fall National Meeting, Boston, MA. *"Biodegradable Polymeric Nanoparticles for Tumor-Selective Tamoxifen Delivery: In Vitro and In Vivo Studies"*. December, 2004.
- Materials Research Society Fall National Meeting, Boston, MA. *"Biodistribution and Tumor-Targeting Potential of Poly(ethylene glycol)-Modified Gelatin Nanoparticles"*. December, 2004.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled *"Polymeric Nanoparticles for Targeted and Controlled Tamoxifen Delivery in Breast Cancer: In-Vitro and In-Vivo Investigations"*. April, 2005.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled *"Plasmid DNA Encapsulation in a Hybrid Nanoparticles-in-Microsphere System for Oral Delivery"*. April, 2005.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled *"Improved Oral Delivery of Hydrophobic Drugs with Novel Nanoemulsion Formulations"* April, 2005.
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- Nano Science and Technology Institute's Nano2005 Conference and Trade Show, Anaheim, CA. "*Biomedical Applications of Gold Nanoparticles Functionalized Using Hetero-bifunctional Poly(ethylene glycol) Spacer*". May, 2005.
- Nano Science and Technology Institute's Nano2005 Conference and Trade Show, Anaheim, CA. "*Super-paramagnetic Iron Oxide-Gold Core-Shell Nanoparticles for Biomedical Applications*". May, 2005.
- American Association of Pharmaceutical Scientists Annual Meeting, Nashville, TN. Poster presentation entitled "*Formulation Optimization for the Nanoparticles-In-Microsphere Hybrid Oral Delivery System Using Factorial Design*". November, 2005.
- American Association of Pharmaceutical Scientists Annual Meeting, Nashville, TN. Poster presentation entitled "*Formulation Development and In Vivo Biodistribution Studies of Poly(ethylene glycol)-Modified Thiolated Gelatin Nanoparticles*". November, 2005.
- American Association of Pharmaceutical Scientists Annual Meeting, Nashville, TN. Poster presentation entitled "*Novel Nanoemulsions for Improved Oral Delivery of Hydrophobic Drugs*". November, 2005.
- American Association of Pharmaceutical Scientists Annual Meeting, Nashville, TN. Poster presentation entitled "*Nanoemulsion Formulations for Improved CNS Drug Delivery*". November, 2005.
- American Association of Pharmaceutical Scientists Annual Meeting, Nashville, TN. Poster presentation entitled "*Application of Statistical Factorial Design for the Preparation of Poly(styrene-*b*-isobutylene-*b*-styrene) Triblock Copolymer Microspheres*". November, 2005.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled "*Intracellular Delivery of Saquinavir in Biodegradable Polymeric Nanoparticles for HIV/AIDS*". April, 2006.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled "*Improved Oral Delivery of Saquinavir in Nanoemulsion Formulations for HIV/AIDS*". April, 2006.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled "*Development, Characterization and Transfection of the Plasmid DNA Encapsulated in Nanoparticles-in-Microsphere Formulations for Oral Delivery*". April, 2006.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. Poster presentation entitled "*Tumor-Targeted Delivery of Hydrophobic Drugs in pH-Sensitive Poly(ethylene oxide)-Modified Poly(beta-amino ester) Nanoparticles*". April, 2006.
- Society for Biomaterials Annual Meeting, Pittsburgh, PA. Podium presentation entitled "*Modulation of Intracellular Ceramide Using Polymeric Nanoparticles to Overcome Multidrug Resistance in Tumor Cells*". April, 2006.
- Society for Biomaterials Annual Meeting, Pittsburgh, PA. Poster presentation entitled "*Development of the Nanoparticles-in-Microsphere Hybrid Formulations for Oral Delivery of Plasmid DNA*". April, 2006.
- Society for Biomaterials Annual Meeting, Pittsburgh, PA. Poster presentation entitled "*Novel Nanoemulsions for Improved Oral Delivery of Hydrophobic Drugs*". April, 2006.
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- Nano Science and Technology Institute's Nano2006 Conference and Trade Show, Boston, MA. Podium presentation entitled *"Modulation of Intracellular Ceramide Using Polymeric Nanoparticles to Overcome Multidrug Resistance in Tumor Cells"*. May, 2006.
- Nano Science and Technology Institute's Nano2006 Conference and Trade Show, Boston, MA. Poster presentation entitled *"Formulation Optimization for the Nanoparticles-in-Microsphere Hybrid Oral Delivery Systems Using Factorial Design"*. May, 2006.
- Nano Science and Technology Institute's Nano2006 Conference and Trade Show, Boston, MA. Poster presentation entitled *"Novel Nanoemulsions for Improved Oral Delivery of Poorly Soluble Drugs"*. May, 2006.
- Nano Science and Technology Institute's Nano2006 Conference and Trade Show, Boston, MA. Poster presentation entitled *"Characterization and In Vivo Biodistribution Studies with Poly(ethylene glycol)-Modified Thiolated Gelatin Nanoparticles"*. May, 2006.
- Controlled Release Society Annual Meeting, Vienna, Austria. Poster presentation entitled *"Poly(Styrene-*b*-Isobutylene-*b*-Styrene) Triblock Copolymer Microspheres for Sustained Release Drug Delivery"*. July, 2006.
- Society of Neuroscience 2006 Annual Meeting, Atlanta, GA. Poster presentation entitled *"Brain Delivery of Proteins by the Intranasal Route of Administration Using Cationic Liposomes"*. October, 2006
- The First National Cancer Institute's Alliance in Nanotechnology Principal Investigator Meeting. San Diego, CA. Poster presentation entitled *"Multifunctional Nanosystems to Overcome Drug Resistance in Cancer"*. October, 2006.
- The First National Cancer Institute's Alliance in Nanotechnology Principal Investigator Meeting. San Diego, CA. Poster presentation entitled *"Modulation of Multidrug Resistance in Cancer with Polymer Blend Nanoparticles"*. October, 2006.
- American Association of Pharmaceutical Scientists Annual Meeting, San Antonio, TX. Poster presentation entitled *"Tumor-Targeted Delivery of Hydrophobic Drugs in pH-Sensitive Poly(ethylene oxide)-Modified Poly(beta-amino ester) Nanoparticles"*. November, 2006.
- American Association of Pharmaceutical Scientists Annual Meeting, San Antonio, TX. Poster presentation entitled *"Development and Characterization of Nanoemulsion Formulations Containing Multimodal Therapeutics for Brain Tumor"*. November, 2006.
- American Association of Pharmaceutical Scientists Annual Meeting, San Antonio, TX. Poster presentation entitled *"Biodegradable Polymeric Nanoparticles for Intracellular Saquinavir Delivery in HIV/AIDS"*. November, 2006.
- American Association of Pharmaceutical Scientists Annual Meeting, San Antonio, TX. Poster presentation entitled *"Oral Plasmid DNA Administration and Transfection Using Nanoparticles-in-Microsphere Formulations"*. November, 2006.
- American Association of Pharmaceutical Scientists Annual Meeting, San Antonio, TX. Poster presentation entitled *"Modulation of Multidrug Resistance in Cancer with Polymer Blend Nanoparticles"*. November, 2006.
- American Association of Pharmaceutical Scientists Annual Meeting, San Antonio, TX. Poster presentation entitled *"Tumor-Targeted sFlt-1 Gene Delivery Using Long-Circulating Thiolated Gelatin Nanoparticles"*. November, 2006.
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- American Association of Pharmaceutical Scientists Annual Meeting, San Antonio, TX. Poster presentation entitled *"Improved Oral Delivery of Saquinavir in Nanoemulsion Formulations for HIV/AIDS"*. November, 2006.
- Controlled Release Society Annual Meeting, Long Beach, CA. Poster presentation entitled *"Gastrointestinal Gene Delivery in Mice using Polymeric Nanoparticles-in-Microsphere Oral System"*. July, 2007.
- Controlled Release Society Annual Meeting, Long Beach, CA. Poster presentation entitled *"Design and Development of a Polymer-Blend Nanoparticle Drug Delivery System to Overcome Multidrug Resistance in Cancer"*. July, 2007.
- Controlled Release Society Annual Meeting, Long Beach, CA. Poster presentation entitled *"Paclitaxel and Ceramide Combination Therapy in Biodegradable Polymeric Nanoparticles to Overcome Multidrug Resistance in Cancer"*. July, 2007.
- The Second National Cancer Institute's Alliance in Nanotechnology Principal Investigator Meeting. Chapel Hill, NC. Poster presentation entitled *"Nanoparticulate Therapeutic Strategy for Intracellular Ceramide Modulation to Lower Apoptotic Threshold and Overcome Multidrug Resistance in Cancer"*. October, 2007.
- American Association of Pharmaceutical Scientists Annual Meeting, San Diego, CA. Poster presentation entitled *"Modulation of Intracellular Ceramide Metabolism with Biodegradable Polymeric Nanoparticle-Encapsulated Tamoxifen to Overcome Multidrug Resistance in Cancer."* November, 2007.
- American Association of Pharmaceutical Scientists Annual Meeting, San Diego, CA. Poster presentation entitled *"Multifunctional Polymer Blend Nanoparticles for Temporal-Controlled Release of Combination Therapeutics to Overcome Multidrug Resistance of Cancer"*. November, 2007.
- American Association of Pharmaceutical Scientists Annual Meeting, San Diego, CA. Poster presentation entitled *"Development of Novel Biodegradable Polymeric Nanoparticles-in-Microsphere Formulation for Local Plasmid DNA Delivery in the Gastrointestinal Tract"*. November, 2007.
- American Association of Pharmaceutical Scientists Annual Meeting, San Diego, CA. Poster presentation entitled *"HER2/neu Receptor-Targeted Engineered Gelatin Nanovectors for Gene Delivery and Transfection in Pancreatic Cancer Cells"*. November, 2007.
- American Chemical Society Annual Meeting, New Orleans, LA. Podium presentation entitled *"Gene Delivery and Transfection Studies with Lipopolyplexes in Human Endothelial and Smooth Muscle Cells"*. April, 2008.
- Nano Science and Technology Institute's Nano2008 Conference and Trade Show, Boston, MA. Podium presentation entitled *"Gene Delivery and Transfection Studies with Lipopolyplexes in Human Endothelial and Smooth Muscle Cells"*. June, 2008.
- Nano Science and Technology Institute's Nano2008 Conference and Trade Show, Boston, MA. Podium presentation entitled *"Epidermal Growth Factor Receptor-Targeted Engineered Gelatin Nanovectors for Gene Delivery and Transfection in Pancreatic Cancer Cells"*. June, 2008.
- Nano Science and Technology Institute's Nano2008 Conference and Trade Show, Boston, MA. Poster presentation entitled *"Non-condensing Calcium Alginate Microspheres for Macrophage-Selective Gene Delivery and Transfection"*. June, 2008.
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- Nano Science and Technology Institute's Nano2008 Conference and Trade Show, Boston, MA. Poster presentation entitled "*Multifunctional Nanoparticulate System for Simultaneous EGFR Gene Silencing and Enhancement of Apoptosis in Pancreatic Cancer Cells*". June, 2008.
- Controlled Release Society Annual Meeting, New York, NY. Podium presentation entitled "*Gene Delivery and Transfection Studies in Smooth Muscle Cells with Lipopolyplexes Immobilized in Gelatin-Coated Stainless Steel Substrates*." July, 2008.
- Controlled Release Society Annual Meeting, New York, NY. Poster presentation entitled "*Cellular Trafficking Studies of Ceramide-Loaded Poly(ethylene Oxide)-Modified Poly(epsilon-caprolactone) Nanoparticles with Raman Spectroscopy*." July, 2008.
- American Association of Pharmaceutical Scientists Annual Meeting, Atlanta, GA. Poster presentation entitled "*Epidermal Growth Factor Receptor-Targeted Gelatin-Based Nanoparticles for Reporter and Therapeutic Gene Delivery in Human Pancreatic Cancer Cells*". November, 2008.
- The Fourth National Cancer Institute's Alliance in Nanotechnology Principal Investigator Meeting. Manhattan Beach, CA. Poster presentation entitled "*Polymer Blend Nanoparticulate System for Combination Paclitaxel/Lonidamine Co-Therapy in Overcoming Multidrug Resistance in Breast and Ovarian Cancer via Exploitation of the Warburg's Effect*". October, 2009.
- The Fourth National Cancer Institute's Alliance in Nanotechnology Principal Investigator Meeting. Manhattan Beach, CA. Poster presentation entitled "*Inhibition of ABCD1 (MDR-1) Expression by siRNA Nanoparticulate Delivery System to Overcome Drug Resistance in Osteosarcoma*". October, 2009.
- American Association of Pharmaceutical Scientists Annual Meeting, Los Angeles, CA. Poster presentation entitled "*In Vitro Studies with Estradiol-Loaded Omega-3 Fatty Acid-Containing Oil-in-Water Nanoemulsion Formulations for the Treatment of Coronary Restenosis*". November, 2009.
- American Association of Pharmaceutical Scientists Annual Meeting, Los Angeles, CA. Poster presentation entitled "*The Effect of Curcumin in Enhancing Oral Absorption and Anti-Tumor Therapeutic Efficacy of Paclitaxel Administered in Nanoemulsion Formulations*". November, 2009.
- American Association of Pharmaceutical Scientists Annual Meeting, Los Angeles, CA. Poster presentation entitled "*TNF- α Gene Silencing Using Nanoparticles-in-Microsphere Oral Delivery System in an Inflammatory Bowel Disease Model*". November, 2009.
- Controlled Release Society Annual Meeting, Portland, OR. Poster presentation entitled "*Tuftsin-Modified Alginate Nanoparticles as a Non-Condensing Macrophage-Targeted Gene Delivery System for Anti-Inflammatory Therapy*." July, 2010.
- Controlled Release Society Annual Meeting, Portland, OR. Poster presentation entitled "*Preliminary Evaluations of Combination Ceramide/Estradiol Therapy in Coronary Restenosis with Omega-3 Fatty Acid-Containing Nanoemulsion Formulations*". July, 2010.
- Controlled Release Society Annual Meeting, Portland, OR. Poster presentation entitled "*In Vitro Evaluations of Nanoparticle-in-Emulsion Formulations for Gene Delivery and Transfection in Macrophages*". July, 2010.
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- American Association of Pharmaceutical Scientists Annual Meeting, New Orleans, LA. Poster presentation entitled *"Preliminary Evaluations of Combination Ceramide/Estradiol Therapy in Atherosclerosis with Omega-3 Fatty Acid-Containing Nanoemulsion Formulations"*. November, 2010.
- American Association of Pharmaceutical Scientists Annual Meeting, New Orleans, LA. Podium and poster presentations entitled *"Tuftsin-Modified Alginate Nanoparticles as a Non-Condensing Macrophage-Targeted Gene Delivery System for Anti-Inflammatory Therapy"*. November, 2010.
- American Association of Pharmaceutical Scientists Annual Meeting, New Orleans, LA. Poster presentation entitled *"Advances in siRNA Delivery: Preliminary Work in the Development of an siRNA Nanoemulsion Delivery System"*. November, 2010.
- American Association of Pharmaceutical Scientists Annual Meeting, New Orleans, LA. Poster presentation entitled *"Advances in siRNA Delivery: Preliminary Work in the Development of an siRNA Nanoemulsion Delivery System"*. November, 2010.
- American Association of Pharmaceutical Scientists Annual Meeting, New Orleans, LA. Poster presentation entitled *"Gene Delivery and Transfection in Human Pancreatic Cancer Cells using Epidermal Growth Factor Receptor-Targeted Gelatin Nanoparticles"*. November, 2010.
- American Association of Pharmaceutical Scientists, National Biotechnology Conference. San Francisco, CA. Poster presentation entitled *"Therapeutic Gene Delivery and Transfection in Human Pancreatic Cancer Cells Using Epidermal Growth Factor Receptor-Targeted Gelatin Nanoparticles"*. May, 2011.
- Nano Science and Technology Institute's Nano2011 Conference and Trade Show, Boston, MA. Podium presentation entitled *"Label-Free Raman Micro-Spectral Imaging of the Micro-Environment of Panc-1 Spheroids"*. June, 2011.
- Nano Science and Technology Institute's Nano2011 Conference and Trade Show, Boston, MA. Podium presentation entitled *"Therapeutic Gene Delivery and Transfection in Human Pancreatic Cancer Cells Using Epidermal Growth Factor Receptor-Targeted Gelatin Nanoparticles"*. June, 2011.
- Controlled Release Society Annual Meeting, National Harbor, MD. Poster presentation entitled *"Label-Free Imaging of Panc-1 Human Pancreatic Tumor Spheroids by Raman Microspectroscopy"*. July, 2011.
- Controlled Release Society Annual Meeting, National Harbor, MD. Poster presentation entitled *"Therapeutic Gene Delivery and Transfection in Human Pancreatic Cancer Cells Using Epidermal Growth Factor Receptor-Targeted Gelatin Nanoparticles"*. July, 2011.
- 17th International Workshop on Single Molecule Spectroscopy and Ultrasensitive Analysis in the Life Sciences, Berlin, Germany. Poster presentation entitled *"Label-Free and Sub-Micron Imaging of Tumor Micro-Environment In Vitro"*. September, 2011.
- The Fifth National Cancer Institute's Alliance in Nanotechnology for Cancer Annual Principal Investigators Meeting, Boston, MA. Poster presentation entitled *"Combinatorial Library Approach Using Functionally Variant Hyaluronic Acid-Based Self-Assembling Nanosystems for Tumor-Targeted Drug and Oligonucleotide Delivery"*. September, 2011.
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The Fifth National Cancer Institute's Alliance in Nanotechnology for Cancer Annual Principal Investigators Meeting, Boston, MA. Poster presentation entitled "*Evaluations of Dextran-Based Nanoparticle-Mediated Drug and siRNA Delivery*". September, 2011.

The Fifth National Cancer Institute's Alliance in Nanotechnology for Cancer Annual Principal Investigators Meeting, Boston, MA. Poster presentation entitled "*Multimodal Therapeutic Approach for Pancreatic Cancer: Delivery of Combination wt-p53 Gene and Gemcitabine in Epidermal Growth Factor Receptor-Targeted Gelatin Nanoparticles*". September, 2011.

Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) 38th Annual Meeting. Reno, NV. Posium presentation entitled "*Label-Free Sub-Micron Imaging of Biological Systems*". October, 2011.

American Association of Pharmaceutical Scientists Annual Meeting, Washington, DC. Poster presentation entitled "*Combinatorial Library Approach Using Functionally Variant Hyaluronic Acid-Based Self-Assembling Nanosystems for Tumor-Targeted Drug and Oligonucleotide Delivery*". October, 2011.

American Association of Pharmaceutical Scientists Annual Meeting, Washington, DC. Poster presentation entitled "*Squalane oil Multiple Emulsion Formulations for Enhanced Immune Response to Peptide-Based Melanoma Vaccine*". October, 2011.

American Association of Pharmaceutical Scientists Annual Meeting, Washington, DC. Poster presentation entitled "*Macrophage-Targeted Tuftsin-Modified Alginate Nanoparticles for Anti-Inflammatory Gene Therapy in the Treatment of Rheumatoid Arthritis*". October, 2011.

American Association of Pharmaceutical Scientists Annual Meeting, Washington, DC. Poster presentation entitled "*Multimodal Therapeutic Approach for Pancreatic Cancer: Delivery of Combination wt-p53 Gene and Gemcitabine in Epidermal Growth Factor Receptor-Targeted Gelatin Nanoparticles*". October, 2011.

Connective Tissue Oncology Society (CTOS) Annual Meeting, Chicago, IL. Podium presentation entitled "*Dextran-Based Nanoparticulate Delivery System to Overcome Multidrug Resistance in Osteosarcoma*". October, 2011.

Eight Annual Workshop on FT-IR Spectroscopy in Microbiological and Medical Diagnostics. Berlin, Germany. Poster presentation entitled "*Raman-Active Gold Nanoparticles as Beacons in Cervical Cancer Cells*". October, 2011.

International Society of Pharmaceutical Engineers Annual Meeting. Dallas, TX. Podium presentation entitled "*Macrophage-Targeted Tuftsin-Modified Alginate Nanoparticles for Anti-Inflammatory Gene Therapy in the Treatment of Rheumatoid Arthritis*". November, 2011.

American Association of Pharmaceutical Scientists, National Biotechnology Conference. San Diego, CA. Poster presentation entitled "*Macrophage-Targeted Tuftsin-Modified Alginate Nanoparticles for Anti-Inflammatory Gene Therapy in the Treatment of Experimental Arthritis*". May, 2012.

INVITED PRESENTATIONS AND TUTORIALS

Massachusetts College of Pharmacy and Allied Health. Division of Pharmaceutical Sciences. Boston, MA. "*Formulation of Controlled Release Dosage Forms*". May, 1996.

Advanced Magnetics, Inc., Cambridge, MA. "*Poly(Ethylene Glycol)-Modified Biomaterial Surfaces*". January, 1998.

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- Innovative Imaging Systems, Inc., North Billerica, MA. *"Polymers for Controlled Drug Delivery Systems"*. August, 1998.
- Kuwait University, Faculty of Pharmacy, Safat, Kuwait. *"Medical and Pharmaceutical Applications of Chitosan"*. February, 1999.
- Tufts University, Department of Chemical Engineering and Bioengineering and Center for Biotechnology Engineering. Medford, MA. *"Chitosan-Based Biomaterials and Drug Delivery Systems"*. March, 2000.
- MA Institute of Technology, Department of Chemical Engineering, Cambridge, MA. *"Polymeric Site-Specific Drug Delivery Systems"*. September, 2000.
- Zycos, Inc., Lexington, MA. *"Cationic Interpenetrating Network Hydrogels for DNA Delivery"*. December, 2000.
- Northeastern University, Department of Pharmaceutical Sciences, Boston, MA. *"Novel Biodegradable pH-Responsive Polymers for Intracellular Delivery"*. March, 2001.
- Northeastern University, School of Pharmacy, Boston, MA. *"Polymeric Delivery Systems for Drugs and Genes"*. March, 2002.
- Cambridge Scientific, Inc., Cambridge, MA. *"Polymeric Drug and Gene Delivery Systems"*. March, 2002.
- Marine Polymer Technologies, Inc., Topsfield, MA. *"Chitosan-Based Biomaterials and Drug Delivery Systems"*. April, 2002.
- Northeastern University, Biotechnology Academic Steering Committee, Boston, MA. *"Polymeric Biomaterials and Drug Delivery Systems"*. January, 2003.
- Northeastern University, Department of Biology, Boston, MA. *"Polymeric Biomaterials and Delivery Systems"*. April, 2003.
- Northeastern University, Technology Transfer and Biotechnology Symposium, Boston, MA. *"Polymeric Biomaterials and Drug Delivery Systems"*. April, 2003.
- Catalyst Oncology, Inc., Providence, RI. *"Tumor-Targeted Polymeric Nanoparticle Delivery Systems"*. December, 2003.
- Archemix, Inc., Cambridge, MA. *"Nanotechnology for Drug Delivery"*. May, 2004.
- Novartis Institute for Biomedical Research, Cambridge, MA. *"Polymeric Technologies for Delivery of Drugs and Genes"*. August, 2004.
- University of MA at Lowell, Lowell, MA. *"Polymer-Based Technologies for Targeted Delivery of Drugs and Genes"*. February, 2005.
- Spherics, Inc., Lincoln, RI. *"Polymeric Delivery Systems for Drugs and Genes"*. April, 2005.
- Northeastern University, Department of 2005 Pharmaceutical Sciences Research Showcase, Boston, MA. *"Nanotechnology for Tumor-Targeted Delivery of Drugs and Genes"*. May, 2005.
- Nano Science and Technology Institute's Nano2005 Conference and Trade Show, Anaheim, CA. *"Nanotechnology for Medical Diagnosis, Imaging, and Therapy – a Tutorial"*. May, 2005.
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Nano Science and Technology Institute's Nano2005 Conference and Trade Show, Anaheim, CA. *"Tumor Targeted Nanocarriers for Drug and Gene Delivery"*. May, 2005.

Pfizer Central Research, Groton, CT. *"Polymeric Biomaterials and Targeted Delivery Systems"*. September, 2005.

Universidad Metropolitana (UMET), Department of Science and Technology, National Science Foundation Sponsored XIV Undergraduate Research Symposium. San Juan, PR. *"Nanotechnology for Medical Imaging and Therapy"*. September, 2005.

Strategic Research Institute, Inc., Cambridge, MA. Nanomedicine: Commercialization of Drug Discovery, Delivery, and Diagnostics Conference. *"Nanotechnology for Targeted Delivery of Drugs and Genes"*. October, 2005.

Nano Science and Technology Institute's Tutorial, Washington, DC *"Nanotechnology for Cancer Therapeutics – A Tutorial"* October, 2005.

National Institute of Standards and Technology, Gaithersburg, MD. *"Nanotechnology for Cancer Imaging and Therapy"* December, 2005.

Alkermes, Inc., Cambridge, MA. *"Multi-Functional Nanotechnology for Imaging and Therapy"*. April, 2006.

Nano Science and Technology Institute's Tutorial, Washington, DC *"Nanotechnology for Cancer Therapeutics – A Tutorial"* May, 2006.

Nano Science and Technology Institute's Nano2006 Conference and Trade Show, Boston, MA. *"Nanotechnology in Drug Delivery: An Overview"*. May, 2006.

2006 Cancer Nanotechnology Conference, Paris, France. *"Nanotechnology for Tumor-Targeted Drug and Gene Delivery"*. May, 2006.

Northeastern University, Department of 2006 Pharmaceutical Sciences Research Showcase, Boston, MA. *"Multi-functional Nanosystems for Drug Delivery and Imaging"*. May, 2006.

National Cancer Institute, Center for Cancer Research, Nanobiology "Think Tank" Meeting, Frederick, MD. *"Multi-functional Nanosystems to Overcome Drug Resistance in Cancer"*. June, 2006.

Microfluidics, Inc., Newton, MA. *"Nanotechnology for Targeted Delivery of Drugs and Genes"*. June, 2006.

Wyeth Pharmaceuticals, Inc., Andover, MA. *"Nanotechnology and the Promise of Molecular Medicine"*. July, 2006.

Emory University, School of Medicine, Department of Ophthalmology, Atlanta, GA. *"Nanotechnology for Targeted Delivery of Drugs and Genes"*. July, 2006.

New Jersey Center for Biomaterials, Rutgers – the States University of New Jersey, Piscataway, NJ. *"Polymers for Tumor-Targeted Delivery and Modulation of Multidrug Resistance"*. August, 2006.

Accelrys Nanobiotechnology Seminar Series, Cambridge, MA. *"Nanotechnology for Targeted Delivery of Drugs and Genes"*. August, 2006.

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- Swiss House of Advanced Research and Education (SHARE), Consulate of Switzerland, Boston, MA. *"Nanotechnology for Medical Diagnosis and Treatment"*. September, 2006.
- American Academy of Nanomedicine 2nd Annual Meeting, Washington, DC. *"Nanotechnology for Targeted Drug and Gene Delivery"*. September, 2006.
- Epic Therapeutics, Inc., Norwood, MA. *"Nanotechnology for Targeted Delivery of Drugs and Genes"*. September, 2006.
- 12th Samsung International Symposium on Molecular Medicine, Seoul, Korea. *"Multi-functional Nanosystems for Tumor-Targeted Drug and Gene Delivery"*. September, 2006.
- Nanotechnology 2006 Conference, Rensselaer Polytechnic Institute, Troy, NY. *Multi-functional Nanosystems for Targeted Drug and Gene Delivery"*. September, 2006.
- Missouri Nanotechnology Alliance – 3rd Annual Meeting, Columbia, MO. *"Multi-functional Nanosystems for Tumor-Targeted Drug and Gene Delivery"*. October, 2006.
- Cambridge Healthtech Institute's Targeted Nanodelivery Conference, Baltimore, MD. *"Multi-functional Nanosystems to Overcome Drug Resistance in Cancer"*. October, 2006.
- Oncogene Science – A Bayer Healthcare Company, Cambridge, MA *"Nanomedicine: Realizing the Potential for Early Cancer Diagnosis and Molecular Therapy"*. October, 2006.
- Northeastern University, Department of Chemistry and Chemical Biology, Boston, MA. *"Multi-functional Nanosystems for Imaging and Drug Delivery"*. November, 2006.
- New Jersey Center for Biomaterials – 2nd Annual , Rutgers - The State University of New Jersey, New Brunswick, NJ. *"Multi-functional Nanosystems for Drug and Gene Delivery"*. November, 2006.
- American College of Veterinary Pathologists and American Society for Veterinary Clinical Pathology Annual Meeting, Tucson, AZ. *"Nanotechnology for Medical Imaging and Therapy"*. December, 2006.
- National Institutes of Health, National Cancer Institute's, Drug Development and Therapeutics Committee, Bethesda, MD. *"Multifunctional Nanosystems to Overcome Drug Resistance in Cancer"*. January, 2007.
- Millennium Pharmaceuticals, Inc., Cambridge, MA. *"Nanotechnology Applications in Translational Oncology"*. January, 2007.
- Harvard-MIT Health Science and Technology Program, MIT, Cambridge, MA. *"Nanotechnology Applications in Cancer Therapy"*. February, 2007.
- New Jersey Center for Biomaterials, Rutgers - The State University of New Jersey, New Brunswick, NJ. *"Polymer Libraries for Tumor-Targeted Delivery and Modulation of Multidrug Resistance"*. March, 2007.
- Strategic Research Institute's 2nd Annual Nanomedicine Conference, Washington, DC. *"Nanotechnology for Tumor-Targeted Delivery of Drugs and Genes"*. March, 2007.
- Materials Research Society, 2007 Spring Meeting, San Francisco, CA. *"Pre-Clinical In Vivo Efficacy and Safety Studies – a Tutorial"*. April, 2007.
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- Materials Research Society, 2007 Spring Meeting, San Francisco, CA. *"Multifunctional Nanosystems for Targeted Drug and Gene Delivery"*. April, 2007.
- American Association of Pharmaceutical Scientists, Northeast Regional Discussion Group Annual Meeting, Rocky Hill, CT. *"Micro- and Nanotechnology for Oral Drug and Gene Delivery"*. April, 2007.
- Genzyme Pharmaceuticals, Inc. – Drug and Biomaterials R&D, Waltham, MA. *"Nanotechnology Applications in Translational Oncology"*. April, 2007.
- Vertex Pharmaceuticals, Inc., Cambridge, MA. *"Nanotechnology Applications in Translational Oncology"*. April, 2007.
- Dartmouth College, Thayer School of Engineering, Hanover, NH. *"Cancer Nanomedicine: Potential for Targeted Delivery and Molecular Medicine"*. May, 2007.
- 2007 Association for Research in Vision and Ophthalmology Annual Meeting, Fort Lauderdale, FL. *"Nanotechnology in Advanced Drug Delivery: An Overview"*. May, 2007.
- 2007 Biotechnology Industry Organization Annual Conference, Cancer Nanotechnology for Early Diagnosis and Therapy Symposium, Boston, MA. *"Multifunctional Nanosystems for Tumor-Targeted Drug and Gene Delivery"*. May, 2007.
- Northeastern University, Department of Pharmaceutical Sciences 2007 Research Showcase, Boston, MA. *"Systemic and Oral Therapeutic Gene Delivery with Non-Viral Vectors"*. May, 2007.
- 2007 Cancer Nanotechnology Conference, Paris, France. *"Multifunctional Nanosystems for Tumor-Targeted Drug and Gene Delivery"*. June, 2007.
- Wellman's Photomedicine Center, MA General Hospital, Boston, MA. *"Nanotechnology for Cancer Imaging and Therapy"*. July 2007.
- National Cancer Institute, National Institutes of Health. Frederick, MD. *"Multifunctional Nanosystems to Overcome Drug Resistance in Cancer"*. July 2007.
- Cerulean (Tempo) Pharmaceuticals, Inc., Cambridge, MA. *"Nanotechnology Applications in Translational Oncology"*. September 2007.
- Tufts University – New England Medical Center, Molecular Oncology Research Institute, Boston, MA. *"Nanotechnology Applications in Translational Oncology"*. September 2007.
- Merck Research Laboratories, Boston, MA. *"Nanotechnology Applications in Translational Oncology"*. September 2007.
- 2007 Boston Society for Advanced Therapeutics, Annual Meeting, Harvard Medical School, Boston, MA. *"Nanotechnology for Targeted Delivery of Drugs and Genes"*. September 2007.
- Second Annual National Cancer Institute's Nanotechnology in Cancer Alliance's Principal Investigators Meeting, Chapel Hill, NC. *"Multifunctional Nanoparticles to Overcome Tumor Drug Resistance"*. October 2007.
- Northeastern University, University's Board of Trustee's Annual Meeting, Boston, MA. *"Nanomedicine: Opportunity for Targeted Imaging and Drug Delivery"*. October, 2007.
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- Dartmouth College, Thayer School of Engineering, 8th Annual Nanomaterials Conference, Hanover, NH. *"Nanotechnology for Cancer Specific Drug and Gene Delivery"*. October, 2007.
- The Fifth Annual Nanomedicine and Drug Delivery Symposium (NanoDDS), Boston, MA *"Multifunctional Nanotherapeutic Strategies for Drug and Gene Delivery"*. November, 2007.
- University of Central Florida, Nano Science and Technology Center, Orlando, FL. *"Nanotechnology Applications in Translational Oncology"*. November, 2007.
- Dartmouth Medical School, Hanover, NH. *"Nanotechnology Applications in Translational Oncology"*. December, 2007.
- University of South Carolina, Department of Pharmaceutical Sciences, College of Pharmacy, Columbia, SC. *"Nanomedicine: Opportunity for Translation of Molecular Therapies"*. February, 2008.
- Medical University of South Carolina, School of Pharmacy, Charleston, SC. *"Nanomedicine: Opportunity for Translation of Molecular Therapies"*. February, 2008.
- IQPC, The Future of Nanotechnology for Targeted Drug Delivery Conference, Boston, MA. *"Nanotechnology Applications in Translational Oncology"*. February, 2008.
- Novartis Institutes for Biomedical Research, Cambridge, MA. *"Advances in Oral Drug and Gene Delivery Systems"*. April, 2008.
- Museum of Science, Boston, MA. *"Nanomedicine: Realizing the Potential for Targeted Cancer Therapy"*. April, 2008.
- Boston University, College of Engineering, 2008 Emerging Technology and Best Practices Seminar Series Nanotechnology in Medicine: From Diagnostics to Therapeutics Program, Boston, MA. *"Advances in Nanotechnology for Drug and Gene Delivery"*. April, 2008.
- Microfluidics Corporation, Newton, MA. *"Nanotechnology for Targeted Imaging and Drug Delivery"*. April, 2008.
- Atrium Medical Corporation, Hudson, NH. *"Advances in Nanotechnology for Drug and Gene Delivery"*. April, 2008.
- First European Conference for Clinical Nanomedicine, Basel, Switzerland. *"Polymeric Nanosystems for Targeted Delivery of Drugs and Genes"*. May, 2008.
- Mayo Clinic, Department of Biomedical Engineering, Rochester, MN. *"Nanotechnology Applications in Translational Oncology"*. September, 2008.
- Pfizer – Research Technology Center, Cambridge, MA. *"Nanomedicine: Opportunity for Translation of Molecular Therapies"*. September, 2008.
- Bio-Rad, Inc., Hercules, CA. *"Advances in Nanotechnology for Non-Viral Gene Delivery"*. October, 2008.
- Purdue University, School of Pharmacy, West Lafayette, IN. *"Multifunctional Nanosystems for Targeted Drug and Gene Delivery"*, November, 2008.
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- American Association of Pharmaceutical Scientists 2008 National Meeting, Atlanta, GA. *"Advances in Nanotechnology for Drug and Gene Delivery"*, November, 2008.
- Materials Research Society, 2008 Fall Meeting, Boston, MA. *"Multifunctional Nanosystems for Cancer-Targeted Imaging and Drug Delivery"*. December, 2008.
- Xavier University of Louisiana, College of Pharmacy, New Orleans, LA. *"Multifunctional Nanosystems for Targeted Drug and Gene Delivery"*. December, 2008.
- Arqule, Inc., Waltham, MA. *"Nanotechnology Applications in Translational Oncology"*. January, 2009.
- Indo-US Science and Technology Forum-Sponsored Cancer Nanotechnology Symposium, New Delhi, India. *"Multifunctional Nanosystems to Overcome Tumor Drug Resistance"*. February, 2009.
- Panacea Biopharmaceuticals, Inc. New Delhi, India. *"Advances in Nanotechnology for Non-Viral Gene Delivery"*. February, 2009.
- Institute of Genomics and Integrative Biology, New Delhi, India. *"Multi-functional Nanosystems for Targeted Drug and Gene Delivery"*. February, 2009.
- Cadila Pharmaceuticals, LTD, Ahmedabad, India. *"Multi-functional Nanosystems for Targeted Drug and Gene Delivery"*. February, 2009.
- Microfluidics Corporation, Newton, MA. *"Multifunctional Nanosystems for Targeted Imaging and Drug Delivery"*. February, 2009.
- Strem Chemicals, Inc., Newburyport, MA. *"Nanotechnology Applications in Translational Oncology"*. February, 2009.
- Microfluidics Corporation, Newton, MA. Webinar on *"Multifunctional Nanomedicine: Opportunity for Targeted Drug and Gene Delivery"*. May, 2009.
- MA General Hospital, Department of Orthopedic Surgery and Orthopedic Oncology, Boston, MA. *"Multifunctional Nanosystems to Overcome Tumor Drug Resistance"*. July, 2009.
- Microfluidics Corporation, Newton, MA. Roundtable Discussions with Scientific Board and Directors. *"Nanomedical Technologies in Early Disease Diagnosis, Imaging and Therapy"*. July, 2009.
- 2009 American Association of Colleges of Pharmacy Annual Meeting, Boston, MA. *"Nanomedical Technologies in Early Diagnosis, Imaging and Therapy"*. July, 2009.
- Novartis Institute of Biomedical Research, Vaccine and Diagnostics Division, Cambridge, MA. *"Advances in Oral Non-Viral Gene Delivery Systems"*. July, 2009.
- 2009 Nano Business Alliance Conference, Chicago, IL. *"Nanotechnology in Early Diagnosis and Targeted Therapy"*. September, 2009.
- Roche Pharmaceuticals Partnering Event, Cambridge, MA. *"Nanotechnology in Early Diagnosis and Targeted Therapy"*. September, 2009.
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- Fifth Annual National Cancer Institute's Nanotechnology in Cancer Alliance's Principal Investigators Meeting, Manhattan Beach, CA. *"Multifunctional Nanoparticles to Overcome Tumor Drug Resistance"*. October 2009.
- First Annual Conference of the American Society for Nanomedicine, Bolger Center, Potomac, MD. *"Multifunctional Nanosystems for Cancer Diagnosis and Therapy"*. October, 2009.
- University of Wisconsin at Madison, School of Pharmacy, Madison, WI. *"Nanotechnology in Early Diagnosis and Targeted Therapy"*. November, 2009.
- University of Illinois at Chicago, College of Pharmacy, Chicago, IL. *"Nanomedicine: Opportunity for Early Diagnosis and Targeted Therapy"*. January, 2010.
- Langer Lab Seminar Series, MA Institute of Technology, Cambridge, MA. *"Nanotechnology in Early Diagnosis and Targeted Therapy"*. February, 2010.
- University of Nebraska Medical Center, College of Pharmacy, Omaha, NE. *"Nanotechnology in Early Diagnosis and Targeted Therapy"*. March, 2010.
- Canadian Society for Pharmaceutical Sciences 2010 Annual Meeting, Vancouver, British Columbia, Canada. *"Nanotechnology Applications in Cancer Diagnosis and Therapy"* June, 2010.
- National Cancer Institute, Center for Cancer Research, Nano-Biology Program, Frederick, MD. *"Nanotechnology Applications in Cancer Diagnosis and Therapy"* June, 2010.
- Stanford University, School of Medicine, Nano-Biotechnology Program Seminar Series, Stanford, CA. *"Multifunctional Nanosystems for Early Diagnosis and Targeted Therapy"*. June 2010.
- American Chemical Society's National Meeting, Boston, MA. *"Multifunctional Nanosystems for Tumor Imaging and Therapy"*. August, 2010.
- Second Annual Conference of the American Society for Nanomedicine, NIAID-Sponsored Symposium on Nanotechnology for HIV/AIDS. Bolger Center, Potomac, MD. *"Nanotechnology Advances in the Prevention and Treatment of HIV/AIDS"*. October, 2010.
- Avila Therapeutics, Inc., Waltham, MA. *"Nanotechnology for Disease Diagnosis and Targeted Therapy"*. November, 2010.
- 2010 Annual National Cancer Institute's Nanotechnology in Cancer Alliance's Principal Investigators Meeting, Bethesda, MD. *"Combinatorial-Designed Nano-Platforms to Overcome Tumor Drug Resistance"*. November, 2010.
- Center for Medicine and Innovative Technologies (CIMIT)-Wellcome Trust Joint Workshop on PTSD and TBI. Boston, MA. *"Strategies for Overcoming the Blood-Brain Barrier in CNS Therapies"*. January, 2011.
- 15th International Symposium on Recent Advances in Drug Delivery Systems, University of Utah, Salt Lake City, UT. *"Multifunctional Nanosystems for Targeted Delivery of Molecular Therapies"*. February, 2011.
- Keynote Presentation at the 2011 GRASP Annual Meeting, MA College of Pharmacy and Health Sciences, Boston, MA. *"Multifunctional Nanosystems for Molecular Medicine"*. June, 2011.
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- Fox Chase Cancer Center, Philadelphia, PA. *"Multifunctional Nanosystems to Overcome Tumor Drug Resistance"*. July, 2011.
- 2011 Annual National Cancer Institute's Nanotechnology in Cancer Alliance's Principal Investigators Meeting, Tutorial Presentation, Boston, MA. *"Nucleic Acid Therapeutics: Using DNA and Small Interfering RNA for Cancer"*. September 2011.
- 2011 Annual National Cancer Institute's Nanotechnology in Cancer Alliance's Principal Investigators Meeting, Boston, MA. *"Taming the Beast: Nanotechnology Solutions for Tumor Aggression"* September, 2011.
- Eight Lohmann Therapie Systems (LTS) Academy Meeting, Bonn, Germany. *"Multi-functional Nanomedicines: From Diagnostics to Targeted Delivery"*. September, 2011.
- Indiana University, Department of Biochemistry and Molecular Biology, Indianapolis, IN. *"Multi-functional Nanomedicines: From Cancer Diagnostics to Targeted Delivery"*. October, 2011.
- University of Missouri at Columbia, Oncology Grand Rounds, Columbia, MO. *"Multi-functional Nanomedicines: From Cancer Diagnostics to Targeted Delivery"*. October, 2011.
- American Association of Pharmaceutical Scientists (AAPS) 2012 annual meeting. Special symposium on *"Nano-Delivery Systems for Vaccines"*. Washington, DC. *"Multi-Compartmental Delivery Systems for Cancer Vaccination"*. October, 2011.
- Carolina Center for Cancer Nanotechnology Excellence Symposium, University of North Carolina. Chapel Hill, NC. *"Multifunctional Nanosystems: From Diagnostic Imaging to Targeted Therapies"*. January, 2012.
- 2nd International Conference on Nanotechnology at Bio-Medical Interface. Amrita Centre for Nanosciences and Molecular Medicine, Kochi, Kerala State, India. *"Translational Cancer Nano-Medicine: From Diagnostic Imaging to Targeted Therapies"*. February, 2012.
- Wayne State University, Department of Pharmaceutical Sciences, Applebaum College of Pharmacy and Allied Health. Detroit, MI. *"Translational Cancer Nano-Medicine: From Diagnostic Imaging to Targeted Therapies"*. March, 2012.
- 2012 Nano-Bio International Collaborative Conference, University of South Florida, Tampa, FL. *"Translational Cancer Nano-Medicine: From Diagnostic Imaging to Targeted Therapies"*. March, 2012.
- Tufts University, Center for Translational Science Institute (CTSI) Roundtable Discussions, Boston, MA. *"Delivery Strategies for CNS Therapies"*. March, 2012.
- Tufts University School of Medicine, Cancer Center Seminar Program. Boston, MA. *"Translational Cancer Nano-Medicine: From Diagnostic Imaging to Targeted Therapies"*. April, 2012.
- Canadian Society for Pharmaceutical Sciences 2012 Annual Meeting, Toronto, Ontario, Canada. *"Multi-Compartmental Lipid Delivery Systems for Cancer Vaccination"*. June, 2012.
- 2012 Nano Science and Technology Institute's Cancer Nanotechnology Symposium. Santa Clara, CA. *"Translational Cancer Nanomedicine: Multimodal Strategies to Overcome Tumor Drug Resistance"*. June, 2012.
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- University of Illinois at Urbana-Champaign 2012 BioSensing, BioActuation, and BioNanotechnology Summer Institute. Urbana-Champaign, IL. *“Translational Cancer Nano-Medicine: From Diagnostic Imaging to Targeted Therapies”*. August, 2012.
- 2012 American Association of Pharmaceutical Scientists Annual Meeting *“Tumor-Targeting Symposium”*. Chicago, IL. *Translational Cancer Nano-Medicine: Multimodal Strategies to Overcome Tumor Drug Resistance* October, 2012.
- 2012 Annual National Cancer Institute’s Nanotechnology in Cancer Alliance’s Principal Investigators Meeting, Houston, TX. *“Combinatorial-Designed Self-Assembled Nano-Systems for Tumor-Targeted RNAi/Drug Therapy”* November, 2012.
- University of Toronto, Leslie Dan School of Pharmacy, Toronto, Ontario, Canada. *“Translational Cancer Nano-Medicine: From Diagnostic Imaging to Targeted Therapies”*. November, 2012.
- Merck Research Laboratories, Rahway, NJ. *“Translational Cancer Nano-Medicine: From Diagnostic Imaging to Targeted Therapies”*. November, 2012.
- American Society of Health-Systems Pharmacists (ASHP) Midyear Meeting, *Spotlight on Science* Plenary Talk, Las Vegas, NV. *“Nanotechnology in Medicine: Very Tiny Solutions for Big Challenges”*. December, 2012.
- National Cancer Institute, National Institutes of Health, Special symposium on “Dysregulated Endocytosis in Cancer”. Bethesda, MD. *“Nanotechnology for Tumor-Targeted Drug and Nucleic Acid Delivery”*. January, 2013.
- Harvard University, School of Engineering and Applied Sciences, Cambridge, MA. *“Translational Cancer Nano-Medicine: From Diagnostic Imaging to Targeted Therapies”*. January, 2013.
- University of Connecticut, School of Pharmacy, Department of Pharmaceutical Sciences. Storrs, CT. *“Translational Cancer Nano-Medicine: From Diagnostic Imaging to Targeted Therapies”*. April, 2013.
- Ferris State University, College of Pharmacy’s 60th Annual Spring Pharmacy Seminar Series Keynote Presentation, Big Rapids, MI. *“Nanotechnology in Medicine: Very Tiny Solutions for Bio-Medical Challenges”*. May, 2013.
- University of Missouri Kansas City, School of Pharmacy, Department of Pharmaceutical Sciences. Kansas City, MO. *“Translational Cancer Nano-Medicine: From Diagnostic Imaging to Targeted Therapies”*. May, 2013.
- First International Translational Nanomedicine Conference. Plenary Presentation. Northeastern University, Boston, MA. *“Translational Nano-Medicine: Diagnostics and Therapeutics for Cancer and Inflammatory Diseases”*. July, 2013.
- University of Massachusetts Medical School, Program in Molecular Medicine, Worcester, MA. *“Translational Nano-Medicine: Targeted Therapeutics for Cancer and Inflammatory Diseases”*. September, 2013.
- 2013 Annual National Cancer Institute’s Nanotechnology in Cancer Alliance’s Principal Investigators Meeting, Bethesda, MD. *“Combinatorial-Designed Nano-Platforms: Opportunity for Targeted Delivery of Drugs and siRNA”* September, 2013.
- Tufts University, Department of Biomedical Engineering, College of Engineering, Medford, MA. *“Translational Nano-Medicine: Targeted Therapeutics for Cancer and Inflammatory Diseases”*. March, 2014.
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- Johnson & Johnson Innovation Center, Cambridge, MA. *"Translational Nano-Medicine: Targeted Therapeutics for Cancer, Pain, and Inflammatory Diseases"*. April, 2014.
- 2014 Cambridge Healthtech Institute (CHI) Biologics Formulation and Delivery Summit, Keynote Presentation, Cambridge, MA. *"Translational Nano-Medicine: Targeted Therapeutics for Cancer and Inflammatory Diseases"*. May, 2014.
- 2014 Oligonucleotide and Peptide Therapeutics Symposium – TIDES, Providence, RI. *"CNS Delivery of Peptide Therapeutics"*. May, 2014.
- Second International Translational Nanomedicine Conference. Plenary Presentation. Northeastern University, Boston, MA. *"Nanotechnology for CNS Delivery of Biological Therapeutics"*. July, 2014.
- Workshop on Micro- and Nano-Technologies for Medicine: Emerging Frontiers and Applications. MIT-Harvard Science and Technology Program and the Wyss Institute. Cambridge, MA. *"Translational Nano-Medicine: Targeted Therapeutics for Cancer and Inflammatory Diseases"*. July, 2014.
- 2014 Annual National Cancer Institute's Nanotechnology in Cancer Alliance's Principal Investigators Meeting, Bethesda, MD. *"Combinatorial-Designed Nano-Platforms: RNAi and Drug Co-Therapy in Resistant Tumors"* October, 2014.
- Houston Methodist Research Institute's George and Angelina Kostas Research Center for Cardiovascular Nanomedicine Inaugural Symposium. Houston, TX. *"Targeted Therapeutic Delivery for Endothelial Dysfunction in Cardiovascular Diseases"*. October, 2014.
- University of Michigan, College of Pharmacy, Department of Pharmaceutical Sciences, Ann Arbor, MI. *"Translational Nano-Medicine: Targeted Therapeutics for Cancer and Inflammatory Diseases"*. November, 2014.
- Purdue University, School of Pharmacy and Pharmacal Sciences, 12th Annual Garnet E. Peck Symposium, West Lafayette, IN. *"Translational Nano-Medicine: Targeted Therapeutics for Cancer and Inflammatory Diseases"*. February, 2015.
- Henry Stuart Talks, London, UK. *"Nanotechnology for CNS Delivery of Biological Therapeutics"*. March, 2015.
- Takeda Pharmaceuticals, New Frontier Science, Cambridge, MA. *"Nanotechnology for Systemic and Local GI Delivery"*. March, 2015.
- Microfluidics, Inc., Westwood, MA. A webinar presentation on *"Nano-Emulsions for CNS Delivery of Biological Therapeutics"*. April, 2015.
- New England Structural Biology Association (NESBA) Annual Symposium, Bentley University, Waltham, MA. Keynote presentation entitled *"Translational Nano-Medicine: Targeted Therapeutics for Pain, Cancer, and Inflammatory Diseases"*. May, 2015.
- King Abdulaziz University, Faculty of Pharmacy, Jeddah, Saudi Arabia. Presentation to the graduating class of Doctor of Pharmacy students on *Pharmacy Career Day 2015* entitled *"Translational Nano-Medicine: Opportunities in Graduate Education and Research"*. May, 2015.
- King Abdulaziz University, Faculty of Pharmacy, Jeddah, Saudi Arabia. Research presentation to the faculty and students entitled *"Translational Nano-Medicine: Tiny Solutions for Big Biomedical Challenges"*. May, 2015.
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Tufts University Cancer Center 2015 Research Retreat, Cummings School of Veterinary Medicine at Tufts, Grafton, MA. *"Multimodal Nanotechnology Solutions for Drug Resistant Tumors"*. June, 2015.

Eight European Summit for Clinical Nanomedicine and Targeted Medicine, Basel, Switzerland. *"Macrophage-Targeted Nano-Delivery Systems for Anti-Inflammatory Therapy"*. June, 2015.

Third Annual Workshop on Micro- and Nano-Technologies for Medicine: Emerging Frontiers and Applications. MIT-Harvard Science and Technology Program and the Wyss Institute. Cambridge, MA. *"Advances in the Delivery of Cancer Vaccines and Therapeutics"*. July, 2015.

Northeastern University and Houston Methodist Research Institute Collaborative Meeting, Boston, MA. *"Targeted Nucleic Acid Delivery in Inflammatory Diseases"*. August, 2015.

Bioscience Seminar Program, Morsani College of Medicine, USF Health, University of South Florida, Tampa, FL. *"Translational Nano-Medicine: Targeted Therapeutics for Pain, Cancer, and Inflammatory Disease"*. September, 2015.

Houston Methodist Research Institute's George and Angelina Kostas Research Center for Cardiovascular Nanomedicine Second Annual Symposium. Houston, TX. *"Targeted Delivery of Nucleic Acids for Inflammatory Diseases"*. October, 2015.

Forsyth Institute, Cambridge, MA. *"Advances in Nanotechnology for Inflammatory Diseases"*. January, 2016.

Dicerna Pharmaceuticals, Inc., Cambridge, MA. *"Translational Nano-Medicine: Targeted Therapeutics for Pain, Cancer, and Inflammatory Disease"*. February, 2016.

Eight Bangalore India Nano Conference. Bangalore, Karnataka State, India. *"Translational Nano-Medicine: Targeted Therapeutics for Pain, Cancer, and Inflammatory Disease"*. March, 2016.

2016 Annual SPIE Conference. Special symposium on Multifunctional Nanoparticles for Biomedical Research, Baltimore, MD. *"Multifunctional Nanoparticles for Nucleic Acid Therapy"*. April, 2016.

INTELLECTUAL CONSULTANCY

GelTex Pharmaceuticals, Inc., Waltham, MA. A medium sized pharmaceutical company that is marketing non-absorbable polymeric materials as therapeutic agents. I have consulted on pharmaceutical product development with GelTex's polymeric materials from May 1997 to June 2000.

FzioMed, Inc., San Luis Obispo, CA. A start-up medical device company intending to market polymeric materials to prevent post-surgical adhesions and thrombus formation. I have consulted on improving blood compatibility of the polymeric materials developed by FzioMed from October 1996 to April 1999.

EOS Pharmaceutical Corporation, Natick, MA. A start-up contract formulation company with domestic and international clients. I have consulted EOS Pharmaceuticals on novel bioadhesive polymeric materials for drug delivery from June 1997 to September 2001.

Biopolymer Technologies International, Inc., Westborough, MA. A start-up biotechnology company specializing in the development of polymer-based therapeutics and nutraceuticals. I have consulted for Biopolymer Technologies International from December 1997 to July 1999.

Braintree Laboratories, Inc., Braintree, MA. A medium sized pharmaceutical company developing various products, including phosphate binders, poly(ethylene glycol)-based laxatives, and gastric lavage agents. I have consulted for Braintree Laboratories from September 1999 to June 2003.

Catalyst Oncology, Inc., Providence, RI. A biotechnology start-up company, supported by the Slater Foundation, to develop novel target-specific anticancer drugs. I have consulted Catalyst Oncology on anticancer drug delivery issues from December 2003 to December 2004.

Cytogel, Inc., Stonington, CT. Cytogel is a small pharmaceutical company focusing on hydrogel drug delivery technologies. I have consulted Cytogel on their hydrogel delivery platforms from September, 2004 to April 2005.

LifeScan, Inc., Milpitas, CA. LifeScan is a Johnson and Johnson subsidiary developing diagnostic systems for diabetes. I have been consulting LifeScan on their diabetes monitoring technologies from August, 2005 to May 2006.

Boston Scientific Corporation, Marlborough, MA. A large-cap medical device company that manufactures drug-coated stents, catheters, and embolic microspheres. I have consulted Boston Scientific on drug delivery technologies from October, 2003 to September, 2006.

Novavax, Inc., Columbia, MD. A medium-sized pharmaceutical company that focuses on women's healthcare market. I have consulted Novavax on their micellar nanoparticle and other delivery platforms from February, 2004 to December, 2006.

Scientia Advisors, LLC, Cambridge, MA. Scientia Advisors is an international management and strategy consulting firm with a concentration in biotechnology and life sciences. I provide intellectual consulting on polymeric drug delivery technologies. I have consulted Scientia Advisors from July, 2008 to May, 2009.

Cequent Pharmaceuticals, Inc., Cambridge, MA. Cequent Pharmaceutical is small company interested in development of proprietary Transkingdom RNA interference technology. I provide consulting service in formulation development and oral delivery. I have consulted Cequent Pharmaceuticals from May, 2007 to December, 2008.

Marine Polymer Technologies, Inc., Burlington, MA. A medium sized biotechnology/medical device company developing poly(acetyl-D-glucosamine)-based products. I have been consulting Marine Polymer on drug formulation and delivery technologies from September 2002 to June, 2007.

Genzyme Pharmaceuticals – Biomaterials and Drug Development Group, Waltham, MA. Genzyme is a medium sized pharmaceutical company with interest in polymeric drug development. I provide intellectual consultation on polymeric biomaterials and drug delivery systems. I provided consultation on drug delivery and nanotechnology from August, 2007-July, 2008.

Grayhead Associates, Wellesley, MA. Grayhead Associates is an international management consulting firm that assists its clients to capitalize on their technological resources and entrepreneurial spirit. I have been consulting Greyhead Associates on biomedical nanotechnology and drug development technologies from October, 2005 to May, 2009.

Vertex Pharmaceuticals, Inc., Cambridge, MA. Vertex is a medium sized pharmaceutical company developing a number of proprietary therapeutics in cancer, inflammation, and infectious diseases. I provide intellectual consultation on drug delivery and nanotechnology. I have been consulting Vertex from January, 2008 to April, 2010.

BioCure, Inc., Norcross, GA. BioCure is a medium-sized biomedical device company developing polymer nanotechnology for imaging and drug delivery applications. I have been consulting BioCure on their nanotechnology research portfolio from August 2006 to June, 2010.

Thompson-Reuters Group (RTG), Washington, DC. RTG provides expert witness, intellectual consulting, and professional presentation services to many diverse groups of clients. I serve as a consultant in the area of pharmaceutical product development, biomaterial science and applications, and nano-medical technologies from February, 2004 to present.

Cerulean Pharmaceuticals, Inc., (previously Tempo Pharmaceuticals Inc.), Cambridge, MA. Cerulean Pharmaceutical is a startup company interested in development of proprietary multi-modal polymeric nanoparticle technology. I provide consulting service in nanoparticle formulations and preclinical studies. I have been consulting Cerulean Pharmaceuticals from September, 2008 to present.

IMS Expert Services, Pensacola, FL. IMS provides expert witness and intellectual consulting services to many diverse groups of clients. I serve as a consultant in the area of pharmaceutical product development, biomaterial science and applications, and nano-medical technologies from June, 2011 to present.

Rubin-Anders Consulting, Boston, MA. Rubin-Anders provides expert witness and intellectual consulting services to many diverse groups of clients. I serve as a consultant in the area of pharmaceutical product development, biomaterial science and applications, and nano-medical technologies from March, 2013 to present.

Takeda Pharmaceuticals, Inc., Cambridge, MA. Takeda is a large multi-national pharmaceutical industry interested in development of nucleic acid therapeutics. I serve as a consultant in the area of nucleic acid formulations for both oral and systemic delivery for variety of disease targets from May, 2015 to present.

TEACHING EXPERIENCES

Courses Currently Teaching (2003 – Present)

Doctor of Pharmacy Program

Pharmaceutics 2 (PHSC 3412, 4 SH): Theoretical course on the physicochemical properties of the drug product and their influence on development of pharmaceutical formulations and delivery offered under the semester calendar (for 16 weeks). I coordinate and teach 100% of this course to 4th year students. Approximate class size is about 150 students each year.

Directed Study (PSC U921, 4 SH): An elective course for professional pharmacy students interested in performing research under a faculty advisor.

Graduate Program in Pharmaceutical Sciences:

Advanced Drug Delivery Systems (PSC G254, 3 SH): A graduate course for MS and PhD students in Pharmaceutical Sciences and other departments across campus focusing on novel drug delivery systems such as polymeric and lipid nano-formulations for drug, gene, vaccine, and siRNA delivery. The course is taught to 50-60 students each Fall and I coordinate and teach 40% of the lectures.

Drug Design, Evaluation, and Development (PSC G210, 2 SH): A graduate level comprehensive course on drug discovery, development, and evaluation from an industrial perspective. I teach about 20% of the course to approximately 50-60 MS and PhD students in the Fall semester each year.

Pharmaceutical Science Seminar (PSC G200, 1 SH): A course on graduate seminar and journal club presentations for development of scientific skills for MS and PhD students in the department. I coordinate and teach 100% of the course for approximately 20-30 MS and PhD students in the Fall semester each year.

Pharmaceutical Science Internship (PSC G401, 1 SH): Coordinator of industrial internship opportunities for graduate students in Pharmaceutical Science. Each year in the Summer, I assist 3-5 MS and PhD students in securing an internship position and evaluating their progress.

Interdisciplinary Graduate Programs:

Introduction to Biotechnology (INT G120, 2 SH): An interdisciplinary graduate course offered to students in the Professional MS program in Biotechnology in the Fall semester each year. I provide 10% effort to this course.

Introduction to Nanomedicine Science and Technology (INT G270, 2 SH): An interdisciplinary graduate course offered under the Nanomedicine Science and Technology IGERT program in the Fall semester of each year. I provide 20% effort to this course.

Nanosystems Design for Biomedical Applications (INT G370, 2 SH): An interdisciplinary graduate course offered under the Nanomedicine Science and Technology IGERT program in the Spring semester of each year. I provide 20% effort to this course.

Seminars in Nanomedicine (INT G371, 1 SH): An interdisciplinary graduate course offered under the Nanomedicine Science and Technology IGERT program in the Fall semester of each year. I coordinate this seminar course and provide 100% effort.

Courses Previously Taught (1993 – 2003)

Pharm.D. Program:

Pharmaceutical Calculations (PCT 1240, 4 QH): Basic prescription interpretation and calculations for second year pharmacy students.

Dosage Forms (PMD 1323, 4 QH): Theoretical course on pharmaceutical product development, characterization, and quality control issues taught to the third year pharmacy students.

Dosage Forms Laboratory (PCT 1300, 2 QH): A complementary laboratory course for Dosage Forms on prescription compounding skills.

Physical Pharmacy (PMD 1400, 4 QH): Theoretical course on the physicochemical properties of the drug product and their influence on development of pharmaceutical formulations and delivery.

Physical Pharmacy Laboratory (PCT 1320, 2 QH): A complementary laboratory course to Physical Pharmacy on analytical and experimental methods for testing of pharmaceutical products for quality control.

Biopharmaceutics and Pharmacokinetics (PMD 1410, 4 QH): Introduction to biopharmaceutics and pharmacokinetic principles, application of compartmental and non-compartmental modeling for analysis of data, and interpretation of pharmacokinetic data in clinical pharmacy practice.

Graduate Program:

Advanced Physical Pharmacy (PCT 3200, 2 QH): A graduate level physical pharmacy course that with emphasis on physicochemical characterization of drug products.

Advanced Drug Delivery Systems (PCT 3300, 3 QH): A graduate level course on formulation and evaluation of advanced drug delivery systems including polymeric systems, liposomes, micelles, protein and peptide delivery, and DNA delivery systems.

TEACHING-RELATED ACCOMPLISHMENTS

Professional Science Masters (PSM) Degree Program in Biomedical Nanotechnology: Working with Pharmaceutical Sciences, School of Law, and College of Business faculty, I have developed a new Professional Science Masters program in Biomedical Nanotechnology. The program will offer terminal MS degree with didactic scientific, patent law, and entrepreneurship courses along with practical internship experience. The first class was admitted in Fall, 2013.

“Non-Traditional” (Industrial) PhD Program in Pharmaceutical Sciences: For students who have completed an MS degree in Pharmaceutical Sciences or related field and are currently working in industry, we have implemented a new ‘non-traditional’ PhD program that waives their didactic course-work. With permission from the corporate sponsors, students enroll in the PhD program and start thesis project under a faculty mentor, while still keeping their “day job” with the industry. The program was started in 2009 and graduated the first cohort of PhD students in 2012.

IGERT Training Grants for Doctoral Training in Nanomedicine - Phase 1 and 2: With funding from the National Cancer Institute and the National Science Foundation (NSF), we have established an Interdisciplinary Graduate Education, Research and Training (IGERT) program. I am involved in the development and implementation of the Nanomedicine Science and Technology doctoral program. The program will admit interdisciplinary fellows who will take didactic courses, participate in internship opportunity, and carry out dissertation project in nanomedicine-related project. The program started in Fall, 2005. Phase 2 program started in Fall 2010 with funding from the NSF.

Multi-Track Professional Science Masters (PSM) Degree Program in Biotechnology: With the support of the Alfred P. Sloan Foundation, I have worked with faculty members from the Biology and Chemical Engineering Departments at Northeastern University to develop and implement an interdisciplinary Professional MS degree program in Biotechnology with tracks in Molecular Biotechnology, Pharmaceutical Biotechnology, and Engineering Biotechnology. The program started in the Fall of 2003.

Applied Physical Pharmacy Textbook: In collaboration with Professor Beverly Sandmann of Butler University, I have authored “*Applied Physical Pharmacy*” textbook specifically geared to pharmacy students and practitioners. The book contains physical chemical concepts in drug product design with examples that are relevant to practice. The textbook was published in November 2002. In collaborations with Professors Thomas Cook from Tauro College of Pharmacy and W. Cary Mobley from University of Florida College of Pharmacy, a second edition of the textbook is in development for anticipated publication in early 2014.

Problem-Based Undergraduate Pharmaceutics Textbook: In collaboration with other pharmaceutics faculty members across the U.S. and Canada, I have authored cases for a textbook entitled “*Cases in Pharmaceutics for Problem-Based Learning and Problem Solving*” edited by Wendy C. Duncan-Hewitt and David L. Mount of the University of Toronto, Canada.

Pharmaceutics Laboratory Exercises Database and CD-ROM: I have contributed eight pharmaceutics laboratory exercises to the database and CD-ROM initiative of David L. Mount and others.

Pharmaceutics Instructional Materials on World-Wide Web: With funding from the Dean's "Excellence in Teaching" initiative, I have developed pharmaceutics instructional materials on the Internet. These pages can be accessed through the World-Wide Web at "<http://www.pharmsci.neu.edu/Courses/courses.html>".

Computer-Aided Pharmaceutics Instruction: I am involved in various aspects of promoting and developing computer aids and tutorial programs for undergraduate pharmaceutics courses. In addition, I strongly advocate the use of pharmacy resources that are available on the Internet.

NABPLEX Review: In the Spring quarter of every year, I provide an extensive review of Calculations, Physical Pharmacy, and Dosage Forms to the senior students who are planning to take the National Board of Pharmacy Licensing Examination (NABPLEX). In addition, I also provide a review of compounding skills to those students taking their NABPLEX exam in states that have a wet-lab section (e.g., New York, Maryland, Wisconsin, etc.).

RESEARCH ADVISING

Short-Term Visiting Scientists/Research Fellows

Mr. Srinivas Ganta	Doctoral Candidate	University of Auckland Auckland, New Zealand July, 2007 – October, 2007
Dr. Pauline Pei Li	Associate Professor	Hong Kong Polytechnic University, Hong Kong, August, 2007
Dr. Wei Duan	Associate Professor	Daikin University, School of Medicine Melbourne, Victoria, Australia, May, 2008
Dr. Cristina Dehelean	Professor	Victor Babes University of Medicine and Pharmacy, Timisoara, Romania, November, 2008
Ms. Jose das Neves	Doctoral Candidate	University of Porto, College of Pharmacy, Porto, Portugal September, 2009 – March, 2010
Ms. Sharareh Adeli	Doctoral Candidate	Tehran University of Medical Sciences, Tehran, Iran. November, 2009 – March, 2010
Dr. Satheesh Elangovan	Research Fellow	The Forsyth Dental Institute, Boston, MA November, 2009 – May, 2010
Ms. Meghna Talekar	Doctoral Candidate	University of Auckland Auckland, New Zealand July, 2011 – December, 2011
Dr. Florence Gattacceca	Assistant Professor	Montpellier University, Faculty of Pharmacy

Montpellier, Cedex, France
August, 2012 – August, 2013

Ms. Ana Vanessa Nascimento	Doctoral Candidate	University of Porto, College of Pharmacy, Porto, Portugal August, 2012 – October, 2014
Ms. Minah Iqbal	MS in Biotechnology	Columbia University New York, NY January, 2015 – May, 2015
Dr. Sundus Tewfik	Professor	London Metropolitan University London, United Kingdom March, 2016 – April, 2016

Research Faculty/Post-Doctoral Associates

Dr. Curtis F. Crasto	Post-Doctoral Associate	July, 2002 – May, 2004, under the Nanomedicine Consortium
Dr. Dinesh B. Shenoy	Associate Research Scientist	June, 2003 – December, 2005
Dr. Sandip K. Tiwari	Post-Doctoral Associate	August, 2004 – June, 2006
Dr. Tushar K. Vyas	Post-Doctoral Associate	December, 2005 – December, 2006
Dr. Aliasgar Shahiwala	Post-Doctoral Associate	August, 2006 – August, 2007
Dr. Harikrishna Devalapally	Post-Doctoral Associate	November, 2005 – February, 2008
Dr. Christina Kriegel	Post-Doctoral Associate	September, 2008 – June, 2010
Dr. Srinivas Ganta	Post-Doctoral Associate Associate Research Scientist	April, 2008 – February, 2010 March, 2010 – November, 2010
Dr. Sampath Abeylath	Post-Doctoral Associate	March, 2010 – May, 2011
Dr. Tatyana Chernenko	Post-Doctoral Associate	May, 2010 – March, 2012
Dr. Ming Chen	Associate Research Scientist	July, 2011 – March, 2012
Dr. Qiong-Lin Zhou	Research Assistant Professor	December, 2010 – August, 2012
Dr. Srinivas Reddy Boreddy	Associate Research Scientist	August, 2012 – January, 2013
Dr. Dattatri Nagesha	Post-Doctoral Associate Coordinator of the IGERT Nanomedicine Program	July, 2004 – May, 2013

Dr. Arun K. Iyer	Post-Doctoral Associate Associate Research Scientist Research Assistant Professor	May, 2008 – December, 2008 December, 2010 – June, 2012 July, 2012 – January, 2014
Dr. Sanjib Bhattacharya	Post-Doctoral Associate	April, 2014 – June, 2014
Dr. Malav Trivedi	Post-Doctoral Associate	July, 2014 – December, 2014
Dr. Amit Singh	Associate Research Scientist	May, 2011 – January, 2015
Dr. Meghna Talekar	Post-Doctoral Associate	April, 2013 – April, 2015
Dr. Than-Huyen Tran	Post-Doctoral Associate	December, 2013 – October, 2015
Dr. George Matthiolampakis	Post-Doctoral Associate	August, 2014 – Present
Dr. Gulzar Ahmad	Post-Doctoral Associate	December, 2015 – Present
Dr. Ahmed Radwan	Medical Fellow (Joint with Dr. Ali Hafezi-Moghadam, Brigham and Women's Hospital, Boston, MA)	March, 2016 - Present
Dr. Neha Parayath	Post-Doctoral Associate	April, 2016 - Present

Doctoral Students

Mr. Radi Hejazi	Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery (Graduated, May 2003) Thesis Title: <i>Stomach-Specific Delivery of Tetracycline-Chitosan Microspheres for the Treatment of Helicobacter pylori Infection.</i>
Ms. Goldie Kaul	Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery (Graduated, August 2004) Thesis Title: <i>Long-Circulating Poly(Ethylene Glycol)-Modified Gelatin Nanoparticles for Tumor-Targeted Gene Delivery.</i>
Ms. Sushma Kommareddy	Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery (Graduated, May 2006) Thesis Title: <i>Gelatin-Based Nanoparticulate Vectors for Tumor-Targeted Therapeutic Gene Delivery</i>
Mr. Mayank Bhavsar	Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery (Graduated, August 2007) Thesis Title: <i>Oral Gene Therapy for Inflammatory Bowel Disease Using Nanoparticles-in-Microsphere Hybrid Delivery System</i>
Ms. Lilian van Vlerken	Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery IGERT Nanomedicine Fellow (Graduated, February 2008)

Thesis Title: *Modulation of Multidrug Resistance in Cancer Using Polymer-Blend Nanoparticles*

Mr. Luis Brito Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery
IGERT Nanomedicine Fellow
(Graduated, December 2008)

Thesis Title: *Local Endothelial Nitric Oxide Synthase Gene Delivery and Transfection with Lipopolyplexes for the Treatment of Coronary Restenosis*

Ms. Lara Jabr-Milane Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery
IGERT Nanomedicine Fellow
(Graduated, June 2010)

Thesis Title: *Tumor Hypoxia, Warburg's Effect, and Drug Resistance: Modulation of Aerobic Glycolysis Using Combination Paclitaxel/Lonidamine Therapy Delivered in Targeted Polymeric Nanoparticles*

Mr. Mayur Kalariya Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery
(Graduated, July 2012)

Thesis Title: *Multi-Compartmental Delivery Systems for Peptide and DNA Vaccines for Melanoma Immunotherapy*

Ms. Shanthi Ganesh Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery
(Graduated, August 2012)

Thesis Title: *Hyaluronic Acid-Based Self-Assembled Multifunctional Nanosystems to Overcome Drug Resistance in Lung Cancer*

Ms. Lipa Shah Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery
(Graduated, May 2013)

Thesis Title: *Multifunctional Nanoemulsions for Systemic Delivery of Analgesic Peptides to the CNS*

Ms. Jing Xu Ph.D. in Pharmaceutical Science - Interdisciplinary Option
(Graduated, June 2013)

Thesis Title: *Multimodal Therapeutic Strategy for Pancreatic Cancer: EGFR-targeted Gelatin-Based Nanovectors for Combination Wild-Type p53 Gene and Cytotoxic Drug Delivery*

Ms. Dipti Deshpande Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery
(Graduated, July 2013)

Thesis Title: *Multimodal Omega-3 Fatty Acid Oil-Containing Nanoemulsion-Based Therapeutic Strategy for the Treatment of Endothelial Dysfunction in Coronary Artery Disease*

Ms. Aziza Jamal-Alial Ph.D. in Pharmaceutical Science - Interdisciplinary Option
(Graduated, August 2013)

Thesis Title: *Serum 25(OH)-Vitamin D Concentrations and Cardiovascular Disease Risk Associations among Older Puerto Ricans*

Mr. Shardool Jain Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery
(Graduated, December 2013)

Thesis Title: *Macrophage-Targeted Tuftsin-Modified Non-Condensing Alginate Nanoparticles for Anti-Inflammatory Gene Therapy in Rheumatoid Arthritis*

Ms. Sunita Yadav Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery
(Graduated, November 2014)

Thesis Title: *Intranasal Delivery of Peptide and siRNA Therapeutics Encapsulated in Lipid Nanocarriers to the Brain for the Treatment of Neuro-Inflammation*

Ms. Verbena Kosvorasti Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery
(Graduated, April, 2015)

Thesis Title: *Hyaluronic Acid Nanoparticles for Systemic RNA Interference Therapy of Advanced Sepsis*

Ms. Ruchi Shah Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery
Novartis/GSK Vaccines - Industrial Graduate Fellow
(Graduated, March 2016)

Thesis Title: *Evaluation and Optimization of Novel Self-Emulsifying Squalene Oil Emulsion Adjuvant Formulations for Potent Immune Response with Model Antigens*

Mr. Husain Attarwala Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery
(Graduated, March 2016)

Thesis Title: *Multi-Compartmental Oral Delivery Systems for TG-2 and IL-15 Gene Silencing in the Treatment of Celiac Disease*

Ms. Megha Kamath PhD in Pharmaceutical Sciences – Pharmaceutics and Drug Delivery
(Co-Advising with Professor Rebecca Carrier, Department of Chemical Engineering)

Thesis Title: *Development of Bioengineered Intestinal Tissue for Assessment of Permeability and Drug Delivery*

Ms. Melissa Berman Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery

Thesis Title: *Nanoparticle Delivery of MicroRNA to Tumor Associated Macrophages in a Genetically-Engineered Lung Cancer Model*

Ms. Ekta Kadakia Ph.D. in Pharmaceutical Science – Pharmaceutics and Drug Delivery

Thesis Title: *Simulation and Modeling for Optimization of Nano-Therapeutic Delivery in the Treatment of Brain Tumors*

Ms. Grishma Pawar PhD in Pharmaceutical Sciences – Pharmaceutics and Drug Delivery

Thesis Title: *Nasal Mucosal Graft Depot for CNS Delivery and Sustained Release of Neurotrophic Factors in Parkinson's Disease Models*

Mr. Rushit Lodaya PhD in Pharmaceutical Sciences – Pharmaceutics and Drug Delivery
GSK Vaccines - Industrial Graduate Fellow

Thesis Title: *Self-Emulsifying Lipid-Based Vaccine Adjuvants for Systemic and Mucosal Immunization*

Ms. Dongyu Chen PhD in Pharmaceutical Sciences – Pharmaceutics and Drug Delivery
Dicerna Pharmaceuticals - Industrial Graduate Fellow

Thesis Title: *Blood Protein Interactions with Nanoparticle Delivery Systems for RNA Interference upon Systemic Administration in Mice*

Master's Students

Mr. Vijaykumar R. Patel M.S. in Biomedical Sciences – Pharmaceutics Specialization
(Graduated, September 1995).

Thesis Title: *Chitosan-Poly(Ethylene Oxide) Semi-Interpenetrating Polymer Network as a pH-Sensitive Drug Delivery System.*

Ms. Amira Ahmed M.S. in Biomedical Sciences – Pharmaceutics Specialization
(Graduated, September 1997).

Project Title: *Novel Drug Delivery Systems for the Treatment of H. pylori Infection.*

Ms. Sweta Shah M.S. in Biomedical Sciences – Pharmaceutics Specialization
(Graduated, September 1999).

Project Title: *Stomach-Specific Antibiotic Therapy for H. pylori Infection.*

Ms. Sarah Nsereko M.S. in Biomedical Sciences – Pharmaceutics Specialization
(Graduated, June 2001).

Thesis Title: *Chitin Microparticles for Localized Delivery of Paclitaxel: In Vitro and In Vivo Studies.*

Mr. Jugminder S. Chawla M.S. in Biomedical Sciences – Pharmaceutics Specialization
(Graduated, April 2002).

Thesis Title: *Poly(epsilon-caprolactone) Nanoparticles for Tumor-Targeted Delivery of Tamoxifen: In Vitro Studies.*

Mr. Ehab Taqieddin M.S. in Biomedical Sciences – Pharmaceutics Specialization
(Graduated, April 2002).

Thesis Title: *Enzyme Immobilization in Perm-selective Chitosan-Alginate Hybrid Microcapsules.*

Ms. Anupama Potineni M.S. in Biomedical Sciences – Pharmaceutics Specialization
(Graduated, April 2002).

Project Title: *Poly(Ethylene Oxide)-Modified Poly(Beta-Amino Ester) Nanoparticles: Long-Circulating pH Sensitive Biodegradable System for Paclitaxel Delivery.*

Mr. Srinivasan Namala M.S. in Biomedical Sciences – Pharmaceutics Specialization
(Graduated, June 2003).

Project Title: *Iontophoresis: A Tool to Enhance Transdermal Drug Delivery*

Ms. Pallavi Devurkar M.S. in Biomedical Sciences – Pharmaceutics Specialization
(Graduated, June 2003).

Project Title: *In Vitro Evaluation of Chitosan Microspheres for Stomach-Specific Drug Delivery*

- Ms. Lilian van Vlerken M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, April 2005; Matriculated into the PhD program)

Project Title: *Combination Therapy of Ceramide and Paclitaxel Delivered in Poly(Ethylene Oxide)-Modified Poly(Epsilon-Caprolactone) Nanoparticles as a Potential Strategy for Overcoming Tumor Multidrug Resistance*
- Mr. Gurinder S. Saini M.S. in Interdisciplinary Studies – Materials Science Specialization
(Co-Advisor, under the Nanomedicine Consortium)
(Graduated, January 2006)

Thesis Title: *Preparation and Characterization of Superparamagnetic Iron Oxide-Gold Core-Shell Nanoparticles for Biomedical Applications*
- Ms. Lipa Shah M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, December 2006, Matriculated into the PhD program)

Thesis Title: *Biodegradable Polymeric Nanoparticles for Intracellular Saquinavir Delivery in HIV/AIDS*
- Ms. Ankita Desai M.S. in Biotechnology – Pharmaceutical Science Track
(Graduated, December 2006)

Project Title: *In Vitro Evaluations of Multi-functional Nanoemulsion Formulations for Brain Tumor Therapy*
- Ms. Jasneet Oberai M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, May 2007)

Project Title: *Novel Nanoemulsions with Temperature-Responsive Drug Delivery*
- Ms. Shraddha Babaria M.S. in Biotechnology – Pharmaceutical Science Track
(Graduated, August 2007)

Project Title: *Cationic Liposomes for Intranasal Gene Delivery to the Brain*
- Ms. Sunita Yadav M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, December 2007, Matriculated into the PhD program)

Thesis Title: *Multifunctional Nanotherapeutic Strategy for MDR-1 Gene Silencing and Chemotherapy Administration to Overcome Multidrug Resistance in Cancer*
- Ms. Dipti Deshpande M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, December 2007, Matriculated into the PhD program)

Thesis Title: *Biodegradable Nanoparticle System for Intracellular Administration of Paclitaxel and Ceramide in Coronary Restenosis*
- Ms. Aparna Chavali M.S. in Biotechnology – Pharmaceutical Science Track
(Graduated, May 2008)

Project Title: *p53 Gene Therapy for Cancer*
- Ms. Sunaina Pai M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, August 2008)

Thesis Title: *In Vitro Evaluations of Multifunctional Nanoparticles for Simultaneous EGFR Gene Silencing and Drug Delivery in Pancreatic Cancer*
-

(Graduated, December, 2010)

Project Title: *In Vitro Evaluations of EGFR-Targeted Gold-Coated Microspheres and Gold Nano-Rods for Imaging Oral Pre-cancerous Lesions*

Ms. Shruti Shah

M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, December, 2010)

Thesis Title: *Hypoxia in Tumor Angiogenesis and Metastasis: Evaluation of VEGF and MMP Over-expression and Down-Regulation of HIF-1 α with RNAi in Hypoxic Tumor Cells*

Mr. Husain Attarwala

M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, December, 2010, Matriculated into the PhD program)

Thesis Title: *In Vitro Evaluations of Macrophage-Targeted Anti-Inflammatory Gene Delivery and Transfection using Nanoparticle-in-Emulsion Formulations*

Mr. Milind Chalishazar

M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, May, 2011)

Project Title: *Isolation and Evaluation of Human Melanoma Exosomes in Multiple Emulsion Formulation for Prophylactic and Therapeutic Vaccination*

Ms. Ruchi Shah

M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, August, 2011, Matriculated into the PhD program)

Project Title: *Inhibition of Hypoxia-Inducible Factor-1 Activation in Pancreatic Tumor Spheroids with 2-Methoxyestradiol-Containing Polymeric Nanoparticles*

Mr. Hardip Gopani

M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, August, 2011)

Thesis Title: *Combination Chemo- and Hyperoxia Therapy using Nanoemulsion Delivery Systems*

Mr. Deep Shah

M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, May, 2012)

Project Title: *Establishment and Characterization of an Adjuvant Arthritis Model in Lewis Rats*

Ms. Kinjal Sankhe

M.S. in Pharmaceutical Sciences– Pharmaceutics Specialization
(Graduated, May, 2012)

Project Title: *In Vivo Evaluations of Endothelial Regenerative Effects of Estradiol-Encapsulated Nanoemulsions in Wild-type C57BL/6J and ApoE^{-/-} Knockout Mice*

Ms. Lavanya Thapa

M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, May, 2012)

Project Title: *Evaluation of Melanoma Exosomes-Containing W/O/W Multiple Emulsion Vaccine Formulation in B16F10-Tumor Bearing C57BL6/J Mice*

Mr. Kamaljeet Singh Sandhu

M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, August, 2012)

Project Title: *TNF- α Gene Silencing using Hyaluronic Acid-Based Self-Assembled Nanoparticles in Macrophages for the Treatment of Inflammatory Conditions Associated with Type 1 Diabetes*

-
- Ms. Darshna Patel M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, August, 2012)
Thesis Title: *In Vitro Evaluations of Ceramide Co-Therapy in Non-Targeted and EGFR-Targeted Biodegradable Polymeric Nanoparticles for Enhancing Therapeutic Efficacy in Ovarian Cancer*
- Ms. Sravani Kathireddy M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, May, 2013)
Project Title: *Multi-functional Nanoemulsions for Targeted Estradiol Delivery in the Treatment of Endothelial Dysfunction in Atherosclerosis*
- Mr. Ganesan Venkatesan M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, May, 2013)
Project Title: *“Click” Synthesis and Characterization of Functionalized Hyaluronic Acid-Based Macrostructures for Self-Assembled Nanoparticles*
- Ms. Ankita Raikar M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, August, 2013)
Thesis Title: *HIF-1 α Activation in 3D Tumor Spheroids and Evaluation of 2-Methoxyestradiol Therapy using Targeted Nanoparticle Formulations*
- Mr. Aatman Doshi M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, August, 2013)
Thesis Title: *In Vitro Evaluations of Control and Lyp-1 Peptide-Modified Nano-Particulate Bisphosphonate Delivery for Ablation of Tumor-Associated Macrophages (TAMs)*
- Mr. Srujan Gandham M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, December 2014)
Thesis Title: *In Vitro Evaluations of Hexokinase-2 Inhibition with 2-Bromopyruvate Encapsulated in Targeted Nanocarrier Formulations using 3D Spheroid Models of Aerobic Glycolysis*
- Mr. Adwait Oka M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, December 2014)
Thesis Title: *Targeted siRNA Delivery Strategy with Water-in-Oil-in-Water Multiple Emulsion for Modulation of Tumor-Associated Macrophage Polarity in Immunotherapy of Cancer*
- Mr. Qijun (Oscar) Ouyang M.S. in Pharmaceutical Sciences – Pharmaceutics Specialization
(Graduated, May 2015)
Project Title: *Re-Polarization of Tumor Associated Macrophages with MicroRNA Nanovectors*
- Ms. Grishma Pawar M.S. in Pharmaceutical Sciences – Pharmacology Specialization
(Graduated, May 2015 – Matriculated into the PhD program)
Project Title: *CNS Delivery of BDNF in Thermogelling Polymer Depot in Sprague-Dawley Rats*
- Mr. Parin Shah M.S. in Pharmaceutical Sciences – Pharmacology Specialization
(Graduated, May 2015)
-

Ms. Sandhya Ramanathan	Ph.D. in Pharmaceutics (Graduated, September 1997)
Ms. Imran Vural	Ph.D. in Biomedical Sciences (Graduated, June 1998)
Ms. Sujata Vaidyanathan	Ph.D. in Pharmaceutics (Graduated, September 1998)
Mr. Ramin Darvari	Ph.D. in Pharmaceutics (Graduated, December 2001)
Mr. Ram Rammohan	Ph.D. in Biomedical Sciences (Graduated, June 2002)
Mr. Jose DaSilva	Ph.D. in Biomedical Sciences (Graduated, June 2002)
Mr. Ananth Srinivas Chakilam	Ph.D. in Pharmaceutics (Graduated, December 2004)
Mr. Sarathi Vijay Bodapatti	Ph.D. in Pharmaceutics (Graduated, August 2007)
Ms. Suman Dandamudi	Ph.D. in Pharmaceutics (Graduated, January 2008)
Ms. Mattia Migliore	Ph.D. in Pharmacology/Nanomedicine (Graduated, May 2008)
Ms. Paula Lampton	Ph.D. in Biology/Nanomedicine (Graduated, December 2008)
Ms. Heather Brodtkin	Ph.D. in Chemistry/Nanomedicine (Graduated, May 2009)
Ms. D. Ece Gamsiz	Ph.D. in Chemical Engineering (Graduated, December 2009)
Mr. J. Adam Hendricks	Ph.D. in Chemistry/Nanomedicine (Graduated, December 2009)
Ms. Shifalika Tangutoori	Ph.D. in Pharmaceutics (Graduated, April 2010)
Ms. Tatyana Chernenko	Ph.D. in Chemistry/Nanomedicine (Graduated, April 2010)
Ms. Agnes Rafalko	Ph.D. in Chemistry/Nanomedicine (Graduated, May 2011)
Ms. Tao Wang	Ph.D. in Pharmaceutics (Graduated, December 2011)
Mr. Claudio Falcao	Ph.D. in Pharmaceutics (Graduated, December 2011)
Ms. Fulden Buyukozturk	Ph.D. in Chemical Engineering (Graduated, August 2012)
Mr. Robert Riehle	Ph.D. in Pharmaceutics/Nanomedicine (Graduated, May 2013)
Mr. Sean Essex	Ph.D. in Pharmaceutics (Graduated, August 2013)
Ms. Mary Katharine Balaconis	Ph.D. in Biomedical Engineering (Graduated, December 2013)
Ms. Jennifer Monahan-Fore	Ph.D. in Chemistry/Nanomedicine (Graduated, December 2013)
Mr. Michael Cuccarese	Ph.D. in Chemistry/Nanomedicine (Graduated, March 2014)
Ms. Jennifer Woodring	Ph.D. in Chemistry/Nanomedicine (Graduated, December 2014)

Research Advising to Undergraduate Honors Students

- Mr. Man-Hon (Johnny) Lam (B.S., Class of 1994)
- Mr. Joseph M. Goreham (B.S., Class of 1995)
- Mr. Peter B. Ng (B.S., Class of 1995)
- Ms. Rakhee H. Tailor (B.S., Class of 1995)
- Ms. Mai-Ki Ly (B.S., Class of 1995)
- Mr. Ketankumar Patel (B.S., Class of 1996)
- Ms. Susanne Verrico (B.S., Class of 1996)
- Ms. Laurie Galvin (B.S., Class of 1996)
- Ms. Fiona Duncan (B.S., Class of 1997)
- Ms. Ekata V. Shah (Pharm.D., Class of 1997)
- Recipient of Dean's Undergraduate Research Achievement Award, April 1995
- Ms. Rina Qaqish (Pharm.D., Class of 1997)
- Ms. Gity Roostai-Mills (B.S., Class of 1998)
- Ms. Roula Qaqish (Pharm.D., Class of 1998)
- Recipient of Dean's Undergraduate Research Achievement Award, April 1996
 - Currently Clinical Science Manager, Abbott Laboratories Eastern Division, Baltimore, MD
- Ms. Phung-Kim Lai (B.S., Class of 1999)
- Recipient of Dean's Undergraduate Research Achievement Award, April 1996
 - Recipient of the PhRMA Foundation's Undergraduate Research Fellowship, January 1999
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- Ms. Tragiang Nguyen (B.S., Class of 1999)
Ms. Trinh Tran (B.S., Class of 1999)
Ms. Bich-Thuy Tran (B.S., Class of 1999)
Mr. Chad McQueen (Pharm.D., Class of 2000)
- Recipient of Dean's Undergraduate Research Achievement Award, April 1999
- Ms. Angela L. Silva (Pharm.D., Class of 2000)
- Recipient of Dean's Undergraduate Research Achievement Award, April 1999
- Mr. Kristian Jackson (B.S., Class of 2000)
- Recipient of the University of Connecticut Research Fellowship, June 1998
- Mr. Pulin Patel (B.S., Class of 2000)
- Pursued graduate studies in Pharmaceutical Chemistry at the University of Kansas, Lawrence, KS
- Mr. Derick Anderson (Pharm.D., Class of 2001)
- Recipient of Dean's Undergraduate Research Achievement Award, April 2000
- Ms. Kwai-Dzy Mak (Pharm.D., Class of 2001)
- Mr. Chi-Sing Nip (Pharm.D., Class of 2001)
- Recipient of the AAPS-AFPE "Gateway" Research Scholarship, June 2000
- Ms. Erica J. Waugh (Pharm.D., Class of 2002)
- Recipient of the PhRMA Foundation's Undergraduate Research Fellowship, January 2001
- Recipient of Dean's Undergraduate Research Achievement Award, April 2002
- Ms. Nikita Mody (Pharm.D., Class of 2004)
- Recipient of Northeastern University Provost's Undergraduate Research Award, January 2002
- Recipient of Dean's Undergraduate Research Achievement Award, April 2003
- Ms. Stephanie Whalen (Pharm.D., Class of 2006)
- Recipient of the AFPE "Gateway" Research Scholarship, June 2004
- Recipient of Northeastern University Provost's Undergraduate Research Award, November 2004
- Ms. Sarah Rogers (Pharm.D., Class of 2008)
- Recipient of Northeastern University Provost's Undergraduate Research Award, November 2004
- Mr. Zeu Hong Tzeng (Pharm.D., Class of 2007)
- Recipient of the AFPE "Gateway" Research Scholarship, July 2005
- Recipient of Northeastern University Provost's Undergraduate Research Award, January 2007
- Ms. Michelle Drown (Pharm.D., Class of 2009)
- Recipient of Northeastern University's Undergraduate Research Award, August 2005
- Ms. Erin Curran (Pharm.D., Class of 2007)
Ms. Christina Guerra (Pharm.D., Class of 2012)
- Recipient of Northeastern University Provost's Undergraduate Research Award, September 2007
- Ms. Shubha Bhat (Pharm.D., Class of 2012)
Mr. Ravi Patel (BS/Chemistry, Class of 2014)
Ms. Erica Diamantides (Pharm.D., Class of 2015)
Ms. Kristin Hong (Pharm.D., Class of 2015)
Ms. Faryal Mir (BS, Biology/Pre-Med Program, Class of 2014)
Ms. Kendall Donohoe (Pharm.D., Class of 2018)
Ms. Rachael Heiss (Pharm.D., Class of 2019)
Ms. Sneha Hingorany (BS, Biology/Pre-Med Program, Class of 2019)
Ms. Reema Patel (Pharm.D., Class of 2020)
Ms. Mina Nayeri (Pharm.D., Class of 2019)
-

High School Summer Research Scholars

Ms. Phung-Kim Lai (Summer, 1994)

Ms. Luoisy Raymond (Summer, 1995)

Mr. Bao-Tuan Nguyen (Summer, 1995)

Mr. Kong-Jie Kah (Summer, 1997)

- Through Research Science Institute, Center for Excellence in Education, McLean, VA

Mr. Jeremy L. England (Summer, 1998)

- Research Science Institute, Center for Excellence in Education, McLean, VA
- Semi-Finalist in 1999 Intel High School Talent Search Competition

Ms. Iris Wei (Summer, 1999)

- Research Science Institute, Center for Excellence in Education, McLean, VA
- Semi-Finalist in the 2000 Intel High School Talent Search Competition

Mr. Brad M. Rosen (Summer, 2000)

- Research Science Institute, Center for Excellence in Education, McLean, VA
- Semi-Finalist in the 2001 Intel High School Talent Search Competition

Ms. Natalie Karabel (Summer, 2001)

- Research Science Institute, Center for Excellence in Education, McLean, VA

Ms. Feng Tu (Summer, 2002)

- Research Science Institute, Center for Excellence in Education, McLean, VA
- Semi-Finalist in the 2002 Siemens-Westinghouse High School Talent Search Competition

Ms. Maria Elena DeObaldia (Summer, 2003)

- Research Science Institute, Center for Excellence in Education, McLean, VA
- Winner of 2004 USA TODAY's All-USA High School Academic First Team

Ms. Joline Fan (Summer, 2004)

- Research Science Institute, Center for Excellence in Education, McLean, VA
- Finalist in the 2004 Siemens-Westinghouse High School Talent Search Competition

Mr. Harold Au (Summer, 2004)

- Research Science Institute, Center for Excellence in Education, McLean, VA
- Gold Award Winner at the 2005 Singapore Science and Engineering Fair.
- Award Winner at the 2005 Shanghai Science Expo, Shanghai, China.

Ms. Yi-Meng (Sally) Tan (Summer, 2005)

- Research Science Institute, Center for Excellence in Education, McLean, VA
- Semi-Finalist in the 2005 Siemens-Westinghouse High School Talent Search Competition

Ms. Thilini Ariyawansa (Summer, 2006)

- Research Science Institute, Center for Excellence in Education, McLean, VA
- Winner of 2007 USA TODAY's All-USA High School Academic First Team

Ms. Elizabeth Lawler (Summer, 2006)

- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA

Ms. Lili Ge (Summer, 2006)

- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA

Ms. Ana Lyons (Summer, 2007)

- Research Science Institute, Center for Excellence in Education, McLean, VA

Mr. Zhi-Guang Ng (Summer, 2007)

- Research Science Institute, Center for Excellence in Education, McLean, VA
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- Ms. Jamie Kang (Summer, 2007)
- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA
- Ms. Marissa Dickson (Summer, 2007)
- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA
- Mr. Jia-Wei Lim (Summer, 2008)
- Research Science Institute, Center for Excellence in Education, McLean, VA
- Mr. Mark-Alex Espanol (Summer, 2008)
- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA
- Ms. Rachael Le (Summer, 2008)
- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA
- Ms. Xiaojun Chen (Summer, 2009)
- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA
- Ms. Tien An (Summer, 2009)
- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA
- Mr. Gary Lee Lim (Summer, 2010)
- Research Science Institute, Center for Excellence in Education, McLean, VA
- Ms. Manasi Malik (Summer, 2010)
- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA
- Ms. Fay Khudairi (Summer, 2010)
- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA
- Ms. Debra Van Egeren (Summer, 2011)
- Research Science Institute, Center for Excellence in Education, McLean, VA
- Mr. Rahul Shankar (Summer, 2011)
- Research Science Institute, Center for Excellence in Education, McLean, VA
- Ms. Kruti Vora (Summer, 2011)
- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA
- Ms. Jennifer Makovkina (Summer, 2011)
- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA
- Ms. Ruiyi Gao (Summer, 2012)
- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA
- Ms. Jennifer Flaherty (Summer, 2012)
- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA
- Mr. Nathan Kondamuri (Summer, 2012)
- Research Science Institute, Center for Excellence in Education, McLean, VA
- Ms. Minerva Tili (Summer, 2013)
- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA
- Mr. Juan Paniagua (Summer, 2013)
- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA
- Ms. Sejal Batra (Summer, 2013)
- Mr. Rachit Singh (Summer, 2013)
- Research Science Institute, Center for Excellence in Education, McLean, VA
- Semi Finalist in the 2014 Intel Talent Search Competition
- Ms. Batelhem Gemechu (Summer, 2014)
-

-
- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA

Mr. Nathan Pan-Doh (Summer, 2014)

- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA

Ms. Michelle Campeau (Summer, 2014)

- Research Science Institute, Center for Excellence in Education, McLean, VA

Mr. Ruchir Rastogi (Summer, 2014)

- Research Science Institute, Center for Excellence in Education, McLean, VA
- Semi Finalist in the 2014 Intel Talent Search Competition

Ms. Michelle Gee (Summer, 2015)

- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA

Ms. Yasmeen Elaywan (Summer, 2015)

- Young Scholars Program, Center for STEM Education, Northeastern University, Boston, MA

Mr. Anirudh Jain (Summer, 2015)

- Research Science Institute, Center for Excellence in Education, McLean, VA

Mr. Yue (Jerry) Zhang (Summer, 2015)

- Research Science Institute, Center for Excellence in Education, McLean, VA

SERVICE

Professional

- Membership in Professional and Scientific Societies:

- American Association of Colleges of Pharmacy (1993-Present).
Member of the Council of Faculties.
Member of the Laboratory Instructors Discussion Group.
- American Association of Pharmaceutical Scientists (1987-Present).
Member of the Polymers in Drug Delivery Special Interest Group.
Member of the Nanotechnology Special Interest Group.
- The Controlled Release Society (1993-Present).
Scientific Advisory Board Member (2012-2014)
Member of Polymeric Biomaterial Discussion Group
- The Society for Biomaterials (1989-Present).
Member of the Task Force on the Impact of Biomaterials on Graduate Education.
Member of the Polymeric Materials Special Interest Group.

- Grant Reviewer:

- National Institutes of Health

- National Heart, Lung, and Blood Diseases Institute (NHLBI) 2004 Program of Excellence in Nanotechnology – Special Emphasis Panel [ZHL1-CSR-K (F1)(R)].
 - Center for Scientific Review (CSR) November 2004 Gene and Drug Delivery (GDD) Study Section – SBIR/STTR Programs Special Emphasis Panel [ZRG1-BST-Z (10)].
 - National Institute of Allergy and Infectious Diseases (NIAID) 2005 Challenge Grants: Biodefense Product Development – Special Emphasis Panel [ZA11-TS-M (M5)(R)].
 - Center for Scientific Review (CSR) July 2005 Gene and Drug Delivery (GDD) Study Section Meeting – Temporary Member.
 - National Heart, Lung, and Blood Diseases Institute (NHLBI) October 2005 – Special Review Committee for P01 Program Proposals.
-

Center for Scientific Review (CSR), November 2005 Gene and Drug Delivery (GDD) Study Section – SBIR/STTR Programs Special Emphasis Panel [ZRG1 BST-Z 10(B)].

National Cancer Institute (NCI), March 2006 - Ruth L. Kirschstein NRSA Fellowships (F32/F33) in Cancer Nanotechnology Research (RFA-CA-06-010) Special Emphasis Panel [ZCA1 RTRB-Z(M1)(R)].

Center for Scientific Review (CSR), April, 2006 Gene and Drug Delivery (GDD) Study Section – SBIR/STTR Programs Special Emphasis Panel [ZRG1 BST-Z (10) (B)].

National Heart, Lung, and Blood Diseases Institute (NHLBI) May, 2006 – Special Review Committee for P01 Program Proposals.

Center for Scientific Review (CSR), June, 2006 – Special Emphasis Panel on Proposals in Response to RFA “Biology of RNA Interference” [2006/10 ZRG1 BST-Z (52) (R)].

Center for Scientific Review (CSR), March, 2007 – Special Emphasis Panel on Proposals in Response to RFA “Small Business: Orthopedics” [ZRG1 MOSS (10)].

Center for Scientific Review (CSR), July, 2007 – Cancer Drug Development and Therapeutics SBIR/STTR ONC-V (13) [2007/10 ZRG1 ONC-V (13) B].

Center for Scientific Review (CSR), October 2007 – ZRG1 NANO-M (01) “Nanotechnology” Study Section – Temporary Member.

National Institute of Biomedical Engineering and Bioimaging (NIBIB), July 2008 - ZEB1 OSR-E (O1) S “Special Emphasis Panel/Scientific Review Group 2008/10 on T32/K99/K01 Training Grants”.

National Institute of General Medical Sciences (NIGMS), August 2008 2008/10 ZGM1 MBRS-0 (NP) “Support of Competitive Research (SCORE) Minority Biomedical Research Support in Neurophysics” Special Emphasis Panel.

National Cancer Institute (NCI), October, 2008, 2009/01 ZRG1 ONC-X (14) B “Experimental Cancer Therapeutics SBIR/STTR” Special Emphasis Panel.

National Institute of Biomedical Imaging and Bioengineering (NIBIB) Special Emphasis Panel. 2009/01 ZEB1 OSR-B (J1) S. November 2008 Support for Scientific Conference (R13) Grant Application Review Panel.

Center for Scientific Review (CSR), January, 2009 – Cancer Immunopathology and Immunotherapy Study Section (CII), *Ad Hoc* Reviewer.

Center for Scientific Review (CSR), April, 2009 – 2009/05 ZRG1 BST-G (10) B - Assays, Detectors, and Devices SBIR/STTR Panel, *Ad Hoc* Reviewer.

Center for Scientific Review (CSR), June 2009 - 2009/10 ZRG1 BST-M (58) R, RFA OD-09-003 Challenge Grants Panel 4, *Ad Hoc* Reviewer.

National Cancer Institute (NCI), July 2009, 2009/01 ZRG1 OTC-X 14 B, Experimental Cancer Therapeutics, SBIR Special Emphasis Panel.

Center for Scientific Review (CSR), October, 2009, 2010/01 BTSS Bioengineering Technology and Surgical Sciences Study Section. *Ad Hoc* Reviewer.

Center for Scientific Review (CSR), February, 2010, 2010/05 BTSS Bioengineering Technology and Surgical Sciences Study Section. *Ad Hoc* Reviewer.

National Cancer Institute (NCI), June 2010 ZCA1 SRLB-Q C1 B, Multifunctional Therapeutics Phase II Special Emphasis Panel, Reviewer.

National Institute of Drugs of Abuse (NIDA), July, 2010 ZDA1 JXR-D (10) Special Emphasis Panel, Reviewer.

Center for Scientific Review (CSR), September 2010, 2011/01 ZRG1 BST-N (03) Member Conflicts: Bioengineering Sciences and Technologies, *Ad Hoc* Reviewer.

Center for Scientific Review (CSR), September 2010, 2011/01 ZRG1 IMST-K (03) Member Conflict: Enabling Bioanalytical and Imaging Technologies, *Ad Hoc* Reviewer.

Center for Scientific Review (CSR), February, 2011, 2011/01 BTSS Bioengineering Technology and Surgical Sciences Study Section. *Ad Hoc* Reviewer.

Center for Scientific Review (CSR), September, 2011, 2011/01 BTSS Bioengineering Technology and Surgical Sciences Study Section. *Permanent Member*.

Center for Scientific Review (CSR), May, 2012, 2012/10 PAR11-301-303: Pediatric Drug Formulations and Drug Delivery (ZRG1 ETTN-S (50) R) Special Emphasis Panel, *Co-Chair*.

National Institute of Biomedical Imaging and Bioengineering (NIBIB), July 2013, 2013/10 ZEB1 OSR-E (O1) S. NIBIB K Training Meeting (Teleconference) Special Emphasis Panel, *Member*.

Center for Scientific Review (CSR), June, 2016 – Cancer Immunopathology and Immunotherapy Study Section (CII), *Ad Hoc* Reviewer.

- Department of Defense, United States Army Medical Research and Material Command, Congressionally-Directed Medical Research Program
 - Breast Cancer Research Program Review Panel (2006-Present)
 - Breast Cancer Concept Award Review Panel (2010-Present)
 - Breast Cancer Training Program Review Panel (2010-2012)

- United States Department of Agriculture
Investigator Initiated Proposals.
SBIR/STTR Proposals.
 - United States Food and Drug Administration
Intramural Proposals on Nanotechnology
 - American Chemical Society, Washington, DC
Petroleum Research Funds
 - Susan G. Komen Foundation for Breast Cancer Grant Program, Dallas, TX
 - American Association for Advancement of Science, Life Sciences Discovery Fund, Washington, DC
 - Georgia Cancer Coalition Grant Program, Atlanta, GA
 - University of Missouri Intramural Grant Program, Columbia, MO
 - University of Kansas Intramural Grant Program, Lawrence, KS
 - Medical Research Council of United Kingdom, London, UK
 - The Wellcome Trust of United Kingdom, London, UK
 - The Leenaards Foundation Prize, Lausanne, Switzerland
 - The Netherlands Organisation for Scientific Research – The Netherlands
 - National Medical Research Council, Ministry of Health, Singapore
 - Singapore Science and Engineering Research Council (SERC) – an Agency of Science,
Technology and Research Singapore (A*STAR), Singapore City
 - Israel Science Foundation, Tel Aviv, Israel
 - Hong Kong Innovation and Technology Support Programme, Wanchai, Hong Kong
 - Hong Kong Research Grants Council, Wanchai, Hong Kong
 - Skolkovo Foundation, Moscow, Russia
 - Danish Research Council, Copenhagen, Denmark
 - Kuwait Foundation for the Advancement of Science, Kuwait City, Kuwait
 - Omani Research Council, Muscat, Oman
 - South African Medical Research Council, Durban, South Africa
 - Membership in Industrial and Academic Scientific Advisory Boards:
 - Nemucore Medical Innovations, Wellesley, MA (Founder and Scientific Advisory Board member)
 - Blue Ocean Biomanufacturing, Inc., Worcester, MA (Founder and Scientific Advisory Board member)
 - OnSite Therapeutics, Inc., Lowell, MA (Scientific Advisory Board member)
 - Cerulean Pharmaceuticals, Inc., Cambridge, MA (Scientific Advisory Board member)
 - Targagenix, Inc., Stony Brook, NY (Scientific Advisory Board member)
 - Aten Porus Life Sciences Private, LTD, Bangalore, India (Scientific Advisory Board member)
 - Controlled Release Society (Scientific Advisory Board member)
-

- Center for Nanomedicine and Drug Delivery, Xavier University of Louisiana, New Orleans, LA (Scientific Advisor)
 - International Symposium on Recent Advances in Drug Delivery Systems, University of Utah, Salt Lake City, UT (Scientific Advisor)
 - Journal Editorships:
 - Associate Editor, *Open Nano*
 - Associate Editor, *International Journal of Green Nanotechnology: Biomedicine*
 - Associate Editor, *Nanomedicine: Nanotechnology, Biology, and Medicine* (2008-2015)
 - Membership in Journal Editorial Boards:
 - Drug Design, Development and Therapy
 - Expert Opinion on Drug Delivery
 - Journal of Biopharmaceutics and Biotechnology
 - Journal of Nano Education
 - Nanotechnology, Science and Applications
 - Pharmaceutical Formulations and Quality
 - Recent Patents on Drug Delivery and Formulations
 - Synthesis and Reactivity in Inorganic, Metal-Organic, and Nano-Metal Chemistry
 - Tissue Barriers
 - The Open Drug Delivery Journal
 - Reviewer for Scientific Journals (partial list):
 - ACS Nano
 - Advanced Drug Delivery Reviews
 - Angewandte Chemie, International Edition
 - Bioconjugate Chemistry
 - Biomacromolecules
 - Biomaterials
 - Cancer Chemotherapy and Pharmacology
 - Cancer Letters
 - Cancer Research
 - Carbohydrate Polymers
 - European Polymer Journal
 - European Journal of Pharmaceutics and Biopharmaceutics
 - European Journal of Pharmaceutical Sciences
 - Expert Opinion on Drug Delivery
 - Expert Opinion on Biological Therapy
 - Gene Therapy
 - International Journal of Cancer
 - International Journal of Pharmaceutics
 - Journal of Applied Polymer Sciences
 - Journal of the American Chemical Society
 - Journal of Biomaterial Science, Polymer Edition
 - Journal of Biomedical Materials Research
 - Journal of Controlled Release
 - Journal of Liposome Research
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- Journal of Pharmacy and Pharmacology
 - Journal of Pharmaceutical Sciences
 - Journal of Pharmacology and Experimental Therapeutics
 - Life Sciences
 - Macromolecular Biosciences
 - Molecular Cancer Therapeutics
 - Molecular Pharmaceutics
 - Nature Communications
 - Nature Nanotechnology
 - Nature Reviews Drug Discovery
 - Pharmaceutical Research
 - Polymer International
 - Science
 - Small
 - STP Pharma Sciences
- Participation in Short Courses:
- Scanning Probe Microscopy Seminar and Workshop. Woburn, MA.
 - Particle Technology Seminar and Workshop. Natick, MA.
 - Application of HTML for Developing Instructional Materials. Boston, MA.
 - Absolute Macromolecular Characterization with Light Scattering. Boston, MA.
 - Scientific and Engineering Applications of Macintosh® Computers. Boston, MA.
 - Surface Characterization of Biomedical Materials. Phoenix, AZ.
 - Hydrogels in Medicine and Pharmacy. Indianapolis, IN.
- American Association of Pharmaceutical Scientists (AAPS), Northeast Regional Discussion Group Planning Committee Member (2001-2005).
- Organizer of the National Cancer Institute/Nano Science and Technology Institute Special Symposium on *“Nanotechnology for Cancer Prevention, Diagnosis, and Treatment”* (2005-Present).
- Instructor for Nano Science and Technology Institute’s Tutorial Session on *“Nanotechnology for Medical Imaging and Therapy”* (2005 – Present).
- Scientific Organizing Committee Member and Session Chair of the *“Cancer Nanotech Conference: Detecting and Treating Cancer”*. Paris, France. (2005-2007).
- Organizer of the *“2009 Indo-US Cancer Nanotechnology Symposium”*, sponsored by the Indo-US Science and Technology Forum, New Delhi, India. February 2009.
- Organizer of the Materials Research Society, Spring 2012 Meeting, San Francisco, CA. Symposium on *“Nanomedicine for Molecular Imaging and Therapy”* March, 2012.
- Registered Pharmacist in MA since 1988 (license #: 20415).

University, College, School, & Department

- Faculty Delegate to the United States Pharmacopeia (USP) Convention (2003-Present).
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- Faculty Advisor – American Association of Pharmaceutical Scientist – Northeastern University Student Chapter (2009-Present)
- Faculty Advisor - Beta Tau Chapter, Rho Chi Pharmaceutical Honor Society (1993-1999).
- Coordinator of the American Association of Pharmaceutical Scientists, Visiting Scientist Program (1993-1999).
- Presentations for Pharmacy Continuing Education Programs.
 - *Helicobacter pylori* and Peptic Ulcer Disease
 - Advances in Drug Delivery Systems: A Primer for Pharmacists
 - Nanomedicine: Realizing the Potential of Targeted and Molecular Therapies
 - Pharmaceutical Calculations: A Primer for Pharmacists and Pharmacy Technicians
- Participation in Pharmacy Open Houses and Student Orientations.
- Participation in Pharmacy Alumni Activities.
- Pharmacy Student's Academic Advising/Portfolio Reviewer.
- Committee Assignments:

University:

- University Patent Committee (2002-2009, 2012-Present).
- Biotechnology Academic Steering Committee (2002-Present).
- Senate Search Committee for Bouve College Dean (2011-2012).
- Provost's Tenure Advisory Committee (2008-2010).
- Academic Computing Advisory Committee (2004-2006).
- Senate Library Advisory Committee (2001-2007).
- Education Technology Faculty Advisory Committee (2004-2006)
- Senate Committee for Evaluation of Dean of Nursing (2004-2006).
- Senate Committee for Evaluation of Dean of Libraries (2003-2004).
- Executive Committee of the Biotechnology Initiative (2002-2004).
- Senate Committee for Department of Pharm. Practice Chair Search (2001-2002).
- University Instructional Technology Task Force (2000-2001).
- Senate Committee for Department of Pharm. Sciences Chair Search (1996-1997).

Bouvé College:

- Bouve Dean's Leadership Team (2011-Present).
 - Bouve Administrative Committee (2005 – 2011).
 - Associate Dean for Research Search Committee (2010-2011).
 - George D. Behrakis Endowed Professor Search Committee (2002-2004).
 - College Technology Committee (1998-2000).
 - College Diversity Committee, (1994-1995).
 - College Computer Advisory Committee, (1995-1998).
 - Graduate Education and Research Task Force (1998-1999).
 - Graduate Committee for Biomedical Sciences Program (1998-2000).
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School of Pharmacy:

- Pharmacy Executive Committee (2008-Present).
- Pharmacy Steering Committee (2001-2004, 2005-Present).
- Pharmacy Curriculum Committee (1998-2002, 2007-Present).
- Pharmacy Re-Accreditation/Self-Study Committee, (1995-1996, 2008-2010).
- Pharmacy Professional Affairs Committee (2006-2009)
- Pharmacy Transfer Students Admission Committee, (1994-2001, 2003-2007).
- Graduate Committee of the School of Pharmacy (2002-2006).
- Pharmacy Honors and Awards Committee, (1994-2001).
- Pharmacy Progression Requirements Committee, (1996-2000).
- Pharmacy Laboratory Renovation Committee (1997-1999).
- Doctor of Pharmacy Tracking Admission Committee (1998-2000).
- Doctor of Pharmacy Curriculum Working Group (1996-1999)*.

Departmental of Pharmaceutical Sciences:

- Merit Review Committee, (1994-1996, 1997-2000, 2002-2003, 2007-2008).
- Faculty Search Committees, (1994-1996, 1998-1999, 2002-2003*, 2007-2008).
- Pharmaceutical Sciences Workload Policy Committee (2005-2007*)
- BS in Pharm. Sciences Program Evaluation Committee (2001-2003, 2009-2010).

* Committee Chair

Community

- Discuss Pharmacy as a Career Choice to Middle and High School Students and Parents.
- Provide Math and Science Tutoring to Middle and High School Students.
- Participate in Fund Raising Activities for Local Schools and Charitable Community Organizations

AWARDS AND HONORS

- Northeastern University, School of Pharmacy Distinguished Alumni Award – 2016.
- University Distinguished Professorship Award, Northeastern University – 2016.
- Controlled Release Society – Induction into the College of Fellows – 2014.
- Phi Lambda Sigma, Pharmacy Leadership Society, Honorary Member – 2014.
- Controlled Release Society - Tsuneji Nagai Award – 2012.
- American Association of Pharmaceutical Scientists (AAPS) Fellowship, 2007.
- American Association of Pharmaceutical Scientists (AAPS) - Meritorious Manuscript Award, 2007.
- Nano Science and Technology Institute (NSTI) Fellowship Award for Outstanding Contributions towards the Advancement, in Nanotechnology, Microtechnology, and Biotechnology, 2006.
- Cited in Academic Pharmaceutical Scientists Who's Who, 2004.
- Eurand Award for Outstanding Research in Oral Drug Delivery, Third Prize, 2003.
- Special Faculty Recognition Award from the Doctor of Pharmacy Students, Class of 1999.
- Recipient of Rho Chi Advisor Appreciation Award, 1997, 1998, & 1999.
- Recipient of Dean's Excellence in Teaching Award, 1996.
- Cited in Who's Who in Science and Engineering, 1996.
- Member of Sigma Xi - The Scientific Research Society, 1996.
- Member of Rho Chi - Pharmaceutical Honor Society, 1987.
- Recipient of Dean's Undergraduate Research Achievement Award, 1987.
- Recipient of Burroughs Wellcome Academic Scholarship, 1987.

- Recipient of Dean Leroy Keagle Memorial Scholarship, 1986.

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