

# **CURRICULUM VITAE**

## **MANSOOR M. AMIJI, PhD, RPh**

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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.

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