Curriculum Vitae

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Education

1996-1998	Postdoctoral Fellow in Biomedical Engineering, MIT, Cambridge, MA Under the direction of Dr. Robert S. Langer
1991-1996	Ph.D. in Chemistry, Harvard University, Cambridge, MA Under the supervision of Dr. George M. Whitesides
1987-1991	B.Sc. in Chemistry, Peking University, Beijing, China

Academic Appointments

2010-	Professor with tenure, Department of Pharmacology, Harold C. Simmons Comprehensive Cancer Center, UT Southwestern Medical Center, Dallas, TX
2010-	Adjunct Professor, Departments of Chemistry and Bioengineering, UT Dallas, Richardson, TX
2005-2010	Associate Professor with tenure, Department of Pharmacology, Harold C. Simmons Comprehensive Cancer Center, UT Southwestern Medical Center, Dallas, TX
2005-2010	Associate Professor of Chemistry, Department of Chemistry, UT Dallas, Richardson, TX
2004-2005	Associate Professor with tenure, Departments of Biomedical Engineering and Radiology, Case Western Reserve University, Cleveland, OH
1998-2004	Assistant Professor, Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH

Honors and Awards

2011	Visiting Professor, School of Medicine, Peking University, Beijing, China
2011	Distinguished Scientist Award from the Society of Experimental Biology and Medicine
2010	SEBM best paper award in for 2010 in the Alan MacDiarmid Interdisciplinary Research Category
2007	Distinguished Overseas Young Scientist, National Natural Science Foundation of China
2006	Visiting Professor, Sun Yat-Sen University, Guang Zhou, China
2000	Young Investigator Award from the Whitaker Foundation
1991	Highest honor Guang-Hua fellowship to B.Sc. Peking University, Beijing, China

Professional Service
Associate Editor, *Experimental Biology and Medicine,* 2006-present

External Advisory Board, Purdue University Center of Cancer Research, 2011-present

Member, *Gene and Drug Delivery (GDD) Study Section*, NIH, 2011-present

Senior Editorial Board, *American Journal of Nuclear Medicine and Molecular Imaging* (ISSN: 2160-8407), 2011-present

Editorial Board, *Theranostics* (ISSN: 1838-7640), Ivyspring International Publishing, 2011-present

Ad hoc reviewer for *Nature Nanotechnology, Cancer Research, Journal of American Chemical Society, Nano Letters, Angewandte Chemie International Edition, Cancer Chemotherapy and Pharmacology, Journal of Pharmaceutical Sciences, Journal of Controlled Release, Journal of Biomedical Materials Research, Journal of Biomaterials Science (Polymer Edition), Journal of Applied Biomaterials, and Small.*

Ad hoc review panel member for *Quantum Grant Study Section, National Institute of Bioimaging and Bioengineering*, 2007.

Ad hoc review panel member for *NHLBI Program Project Grant Study Section*, 2005, 2006.

Ad hoc review panel member for NIH Drug and Gene Delivery Study Section, 2005, 2009, 2010, 2011.

Ad hoc review panel member for NIH ARRA competitive revision study section, 2009.

Ad hoc grant reviewer for *National Science Foundation (NSF), Indiana 21st Century Fund, North Carolina Biotechnology Center, Academic Research Fund at National University of Singapore, Pennsylvania Performance Review of Partnership for Innovation Program, NCI SBIR/STTR Study Section, Department of Defense Lung Cancer Research Program.* 1999-present.

Session chairs for *Society for Biomaterials (2001, 2003, 2008), Controlled Release Society (2005), Materials Research Society (2007)*.

Program chair, Nanomaterials Special Interest Group. *Society for Biomaterials*. 2009-present.

Organization Committee, *DFW Nanomedicine Symposium at UT Dallas*. 2006.

Member of Working Group for *Cancer Clinical Trials for the Texas Cancer Research Institute, University of Texas System.* 2008-2009.

University Service
Member of *Undergraduate Education Committee, Graduate Education Committee, BME major advisor, BME freshmen advisor, Department of Biomedical Engineering, Case Western Reserve University*. 1999-2005.

Member of *Search Committees for tenure-track faculty in Chemistry, Chemical Engineering, and Biomedical Engineering, Case Western Reserve University*. 2000-2005.

Member of *Committee of Chemistry of Materials, Dean's Advisory Group on Recruitment (DAGOR), Committee of Research, Executive Committee, Strategic Planning Committee, Case School of Engineering, Case Western Reserve University*. 2001-2005.

Member of *Steering Committee and Search Committee for Department Chair for Bioengineering, EJS School of Engineering,, UT Dallas*. 2005-2007.

Organizing (together with Prof. Moon Kim at UT Dallas) joint *iNanomed Seminar Series*. 2008-2009.

Chair of *Search Committee, Assistant Professor in Cancer Nanomedicine, Simmons Comprehensive Cancer Center, UT Southwestern Medical Center*. 2008-present.

Selected Invited Lectures (past 5 years)

2006 NCI Lung SPORE 2006 Winter Meeting. Los Angeles, CA.
2006 Moores Comprehensive Cancer Center, University of California San Diego.
2006 Durect Corporation, San Jose, California.
2006 NanoTX'06: The Promise of Tomorrow, The Business of Nanotechnology.
2006 62nd Southwest Regional Meeting of the American Chemical Society meeting. Houston, TX.
2006 Stevens Institute of Technology. Newark, NJ.
2006 The Fine Particle Society 2006 International Conference on Bio and Pharmaceutical Science and Technology. San Diego, CA.
2007 School of Chemistry and Chemical Engineering, ZhongShan School of Medicine, Sun Yat-Sen University. GuangZhou, China
2007 13th International Symposium on Recent Advances in Drug Delivery Systems. Salt Lake City, Utah.
2007 Chinese Society of Magnetic Resonance and Medicine (CSMRM) Conference. Dalian, China.
2007 Joint Molecular Imaging Conference. Providence, Rhode Island.
2007 Materials Research Society Meeting. Boston, MA.
2008 IEEE Engineering in Medicine and Biology Society. Dallas, TX.
2008 Jones Seminar at the Department of Biomedical Engineering, Dartmouth College.
2008 WMR Biomedical. Boston, MA.
2008 Bio-Nano Manufacturing Grand Challenges for 2020, National Science Foundation.
2008 Gordon Research Conference on Drug Carriers and Medicine.
2008 College of Chemistry and Molecular Engineering, Peking University, Beijing, China.
2008 Institute of Chemistry, Chinese Academy of Sciences, Beijing, China
2008 Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, China
2009 9th Annual Targeted Therapies of the Treatment of Lung Cancer. Santa Monica, CA.
2009 Cancer Research Institute, University of Cambridge, UK.
2009 IEEE Engineering in Medicine and Biology Society (EMBC'09), Minneapolis, Minnesota
2009 Keynote speaker in the 4th International Symposium on Biomedical Engineering. Bangkok, Thailand

2010	School of Chemistry and Chemical Engineering, Sun Yat-Sen University. GuangZhou, China
2010	Particles 2010 Conference. Orlando, FL.
2010	The 4th International Symposium on Polymer Chemistry (pc2010). SuZhou, China.
2010	Department of Pharmacology, School of Medicine, Beijing University. Beijing, China.
2010	American Chemical Society Polymer Materials Science and Engineering Symposium. Boston, MA.
2011	Department of Medicinal Chemistry and Molecular Pharmacology, Purdue University, Wester Lafette, IN
2011	Elkin Lecture, Winship Comprehensive Cancer Center, Emory University, Atlanta, GA
2011	IEEE/NIH 2011 Life Science Systems and Applications Workshop, Washington, DC
2011	Plenary lecture, International Symposium on Functional Polymers for Nanomedicine, Hangzhou, China
2011	The 10th China-Japan-Korea Foresight Joint Symposium on Gene Delivery and International Symposium on Biomaterials
2011	Center of Cancer Nanotechnology of Excellence, Stanford University, CA

Teaching

1991-1992	Teaching Fellow, Harvard University, Cambridge, MA.
1998	Introduction to Biomaterials (junior-level course, organizer: R. Bellamkonda), Department of Biomedical Engineering, Case Western Reserve University (CWRU), Cleveland, OH
1999	Structure of Biological Materials (junior-level course, organizer: R. Marchant), Department of Biomedical Engineering, CWRU, Cleveland, OH
1999	Polymers in Medicine (graduate-level course, organizer: R. Marchant), Department of Biomedical Engineering, CWRU, Cleveland, OH
1999-2005	Biomedical Engineering Lab (I provided biomaterial lab to BME juniors), Department of Biomedical Engineering, CWRU, Cleveland, OH
1999-2005	Designed and taught Biomaterials and Drug Delivery (a new graduate level course), Department of Biomedical Engineering, CWRU, Cleveland, OH
2000-2005	Introduction to Biomedical Engineering (Biomaterials and Tissue Engineering section to BME freshmen), Department of Biomedical Engineering, CWRU, Cleveland, OH
2002-2005	Designed and taught Quantitative Molecular Bioengineering (a new capstone undergraduate course to Tissue Engineering Track), Department of Biomedical Engineering, CWRU, Cleveland, OH
2003-2004	Materials and Manufacturing Processes (Pharmaceutical materials section), Case School of Engineering and School of Management, CWRU, Cleveland, OH
2006-2009	Cancer Biology Course (organizer: Jerry Shay), UT Southwestern Medical Center, Dallas, TX.
2006-present	Mechanisms of Drug Action (organizer: Phil Thorpe), UT Southwestern Medical Center, Dallas, TX.

Bibliography

Peer Reviewed Journal Articles (H factor: 28 based on citations from Web of Science)

1. Zhao, B.; Xu, X.; Ma, H.; **Gao, J.**; Wang, R.; Sun, D.; Tang, Y. A New Way to Prepare Catalysts on Solid Support with Highly Specific Surfaces. *Acta Phys.-Chim. Sinica*, **1993**, *9*, 8-14.

2. **Gao, J.**; Haerter, R.; Gordon, D.; Whitesides, G. M. Synthesis of KDO Using Indium-Mediated Allylation of 2,3:4,5-Di-*O*-isopropylidene-D-arabinose in Aqueous Media. *J. Org. Chem.* **1994**, *59*, 3714-3715.

3. **Gao, J.**; Gomez, F. A.; Haerter, R.; Whitesides, G. M. Determination of the Effective Charge of a Protein in Solution by Capillary Electrophoresis. *Proc. Natl. Acad. Sci. USA,* **1994**, *91*, 12027-12030.

4. Zhao, B.; Xu, X.; **Gao, J.**; Ma, H.; Tang, Y. The Effect of the Preparation Method on the Structure of WO_3/ZrO_2. *Acta Phys.-Chim. Sinica*, **1995**, *11*, 982-986.

5. **Gao, J.**; Qiao, S.; Whitesides, G. M. Increasing Binding Constants of Ligands to Carbonic Anhydrase by Using "Greasy Tails." *J. Med. Chem.* **1995**, *38*, 2292-2301.

6. Cheng, X.; Chen, R.; Bruce, J. E.; Schwartz, B. L.; Anderson, G. A.; Hofstadler, S. A.; Gale, D. C.; Smith, R. D.; **Gao, J.**; Sigal, G. B.; Mammen, M.; Whitesides, G. M. Using Electrospray Ionization FTICR Mass Spectrometry to Study Competitive Binding of Inhibitors to Carbonic Anhydrase. *J. Am. Chem. Soc.* **1995**, *117*, 8859-8860.

7. **Gao, J.**; Mrksich, M.; Gomez, F. A.; Whitesides, G. M. Using Capillary Electrophoresis to Follow the Acetylation of the Amino Groups of Insulin and to Estimate their Basicities. *Anal. Chem.* **1995**, *67*, 3093-3100.

8. Chu, Y.-H.; Avila, L. Z.; **Gao, J.**; Whitesides, G. M. Affinity Capillary Electrophoresis. *Acc. Chem. Res.* **1995**, *28*, 461-468.

9. Zhao, B.; Xu, X.; **Gao, J.**; Fu, Q.; Tang, Y.Q. Structure Characterization of WO_3/ZrO_2 Catalysts by Raman Spectroscopy. *J. Raman Spect.* **1996**, *27*, 549-554.

10. **Gao, J.**; Mammen, M.; Whitesides, G. M. The Use of Protein Charge Ladders to Evaluate Electrostatic Contributions to Biomolecular Recognition. *Science* **1996**, *272*, 535-537.

11. **Gao, J.**; Cheng, X.; Chen, R.; Sigal, G. B.; Bruce, J. E.; Schwartz, B. L.; Hofstadler, S. A.; Anderson, G. A.; Smith, R. D.; Whitesides, G. M. Screening Derivatized Peptide Libraries for Tight Binding Inhibitors to Carbonic Anhydrase II by Electrospray Ionization-Mass Spectrometry. *J. Med. Chem.* **1996**, *39*, 1949-1955.

12. **Gao, J.**; Martichonok, V.; Whitesides, G. M. Synthesis of a Phosphonate Analog of Sialic Acid (Neu5Ac) Using Indium-Mediated Allylation of Unprotected Carbohydrates in Aqueous Media. *J. Org. Chem.* **1996**, *61*, 9538-9540.

13. Wu, Q.; **Gao, J.**; Joseph-McCarthy, D.; Sigal, G. B.; Bruce, J. E.; Whitesides, G. M.; Smith, R. D. Carbonic Anhydrase-Inhibitor Binding: From Solution to the Gas Phase. *J. Am. Chem. Soc.* **1997**, *119*, 1157-1158.

14. **Gao, J.**; Whitesides, G. M. Using Protein Charge Ladders to Determine the Values of Effective Charge and Molecular Weight of Proteins. *Anal. Chem.* **1997**, *69*, 575-580.

15. Córdova, E.; **Gao, J.**; Whitesides, G. M. Non-Covalent Polycationic Coatings for Capillaries in Capillary Electrophoresis of Proteins. *Anal. Chem.* **1997**, *69*, 1370-1379.

16. Colton, I.; Anderson, J.; **Gao, J.**; Chapman, R.; Isaacs, L.; Whitesides, G. M. Formation of Protein Charge Ladders by Acylation of Amino Groups on Proteins. *J. Am. Chem. Soc.* **1997**, *119*, 12701-12709.

17. **Gao, J.**; Niklason, L.; Zhao, X.; Langer, R. S. Surface Modification of Polyanhydride Microspheres. *J. Pharm. Sci.* **1998***, 87,* 246-248.

18. Carbeck, J.; Colton, I.; **Gao, J.**; Whitesides, G. M. Protein Charge Ladders, Capillary Electrophoresis, and the Role of Electrostatics in Biomolecular Recognition. *Acc. Chem. Res.* **1998**, *31*, 343-350.

19. **Gao, J.**; Niklason, L.; Langer, R. S. Surface Hydrolysis of Poly(glycolic acid) Meshes Increases the Seeding Density of Vascular Smooth Muscle Cells. *J. Biomed. Mater. Res.* **1998**, *42*, 417-424.

20. Niklason, L.; **Gao, J.;** Abbott, W.; Hirschi, K.; Houser, S.; Marini, R.; Langer, R. Functional Arteries Grown In Vitro. *Science* **1999**, *284*, 489-493.

21. Carbeck, J.; Severs, J.; **Gao, J.**; Wu, Q.; Smith, R. D.; Whitesides, G. M. Correlation between the Charge of Proteins in Solution and in the Gas Phase Investigated by Protein Charge Ladders, Capillary Electrophoresis, and Electrospray Ionization Mass Spectrometry. *J. Phys. Chem. B* **1999**, *102*, 10596-10601.

22. **Gao, J.;** Wu, Q.; Carbeck, J.; Lei, Q. P.; Smith, R. D.; Whitesides, G. M. Probing the Energetics of Dissociation of Carbonic Anhydrase-Ligand Complexes in the Gas Phase. *Biophys J.* **1999**, *76*, 3253-3260.

23. Niklason, L.E.; Abbott, W.; **Gao, J**.; Klagges, B.; Hirschi, K.K.; Ulubayram, K.; Conroy, N.; Jones, R.; Vasanawala, A.; Sanzgiri, S.; Langer, R. Morphologic and Mechanical Characteristics of Engineered Bovine Arteries. *J. Vas. Surg*. **2001**, *33*, 628-638.

24. Qian, F.; Szymanski, A.; Gao, J. Fabrication and Characterization of Controlled Release Poly(D, L-Lactide-co-Glycolide) Millirods. *J. Biomed. Mat. Res.* **2001**, *55*, 512-522.

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26. **Gao, J**.; Qian, F.; Szymanski-Exner, A.; Stowe, N.; Haaga, J. *In Vivo* Drug Distribution Dynamics in Thermoablated and Normal Rabbit Livers from Biodegradable Polymers. *J. Biomed. Mat. Res.* **2002***, 62,* 308-314.

27. Szymanski-Exner, A.; Stowe, N.; Lazebnik, R.; Salem, K.; Wilson, D.; Haaga, J.; **Gao, J**. Noninvasive Monitoring of Local Drug Release in A Rabbit Radiofrequency (RF) Ablation Model Using X-Ray Computed Tomography. *J. Controlled Release* **2002**, *83*, 415-425.

28. Qian, F.; Saidel, G.; Sutton, D.; Szymanski, A.; **Gao, J**. Combined Modeling and Experimental Approach for The Development of Dual-Release Polymer Millirods. *J. Controlled Release* **2002**, *83*, 427-435.

29. Salem, K.; Szymanski-Exner, A.; Lazebnik, R.; Breen, M.; **Gao, J**.; Wilson, D. X-Ray Computed Tomography Methods for In Vivo Evaluation of Local Drug Release Systems. *IEEE-Trans. Med. Imaging*, **2002**, *21*, 1310-1316.

30. Szymanski-Exner, A.; Stowe, N.; Lazebnik, R.; Salem, K.; Haaga, J.; Wilson, D.; **Gao, J**. Noninvasive Monitoring of Local Drug Release Using X-Ray Computed Tomography: Optimization and *In Vitro/In Vivo* Validation. *J. Pharm. Sci.* **2003**, *92*, 289-296.

31. Qian, F.; Stowe, N.; Liu, E.H.; Saidel, G.M.; **Gao, J**. Quantification of In Vivo Doxorubicin Transport from PLGA Millirods in Thermoablated Rat Livers. *J. Controlled Release*, **2003**, *91*, 157-166.

32. Nasonkla, N.; Wiedmann, A.; Bruening, A.; Beman, M.; Ray, D.; Bornmann, W.G.; Boothman, D.; **Gao, J**. Enhancement of Solubility and Bioavailability of β-Lapachone using Cyclodextrin Inclusion Complexes. *Pharm. Res.* **2003**, *20*, 1626-1633.

33. Szymanski-Exner, A.; Gallacher, A.; Stowe, N.; Weinberg, B.; Haaga, J.; **Gao, J.** Local Carboplatin Delivery and Tissue Distribution in Livers Following Radiofrequency (RF) Ablation. *J. Biomed. Mat. Res.* **2003**, *67*, 510-516.

34. Ai, H.; **Gao, J.** Size-Controlled Polyelectrolyte Nanocapsules via Layer-by-Layer Self-Assembly. *J. Mater. Sci.* **2004**, *39*, 1429-1432.

35. Qian, F.; Stowe, N.; Saidel, G.M.; **Gao, J.** Pharmacokinetic Comparison of Sustained and Dual-Release Polymer Millirods in RF Ablated Livers. *Pharm. Res.* **2004**, *21*, 394-399.

36. Blanco, E., Qian, F., Weinberg, B., Stowe, N., Anderson, J.M., **Gao, J.** Effect of Fibrous Capsule Formation on Doxorubicin Distribution in Radiofrequency Ablated Rat Livers. *J. Biomed. Mat. Res.* **2004,** *69*, 398-406.

37. Shuai, X.T.; Ai, H.; Nasongkla, N.; Kim, S.; **Gao, J.** Micellar Carriers Based on Block Copolymers of Poly(ε-caprolactone) and Poly(ethylene glycol) for Doxorubicin Delivery. *J. Controlled Release.* **2004**, *98*, 415-426.

38. Nasongkla, N.; Shuai, X.; Ai, H.; Weinberg, B.D.; Pink, J.; Boothman, D.A.; **Gao, J.** cRGD-Functionalized Polymer Micelles for Targeted Doxorubicin Delivery. *Angew. Chem. Int. Ed.* **2004**, *43*, 6323-6327.

39. Szymanski-Exner, A., Weinberg, B., Stowe, N., Gallacher, A., Wilson, D., Haaga, J. R., **Gao, J.** Pharmacokinetic Analysis of Local Drug Delivery by Computed Tomography. *Acad. Rad*. **2004**, *11*, 1326-1336.

40. Ough, M.; Lewis, A.; Bey, E.; **Gao, J.;** Ritchie, J.M.; Bornman, D.A.; Boothman, D.A.; Oberley, L.W.; Cullen, J.J. Efficacy of β-Lapachone in Pancreatic Cancer Treatment: Exploiting the Novel, Therapeutic Target NQO1. *Cancer Biology & Therapy*, **2005**, *4*, 54-61.

41. Park, H.J.; Ahn, K.J.; Ahn, S.D.; Choi, E.; Lee, S.W.; Williams, B.; Kim, J.S.; Griffin, R.; Bey, E.A.; Bornmann, W.G.; **Gao, J.;** Park, H.J.; Boothman, D.A.; Song, C.W. Susceptibility of cancer cells to β-lapachone is enhanced by ionizing radiation. *Int. J. Rad. Onco. Biol. Phys.* **2005**, *61*, 212-219.

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43. Ai, H.; Pink, J.; Shuai, X.; Boothman, D.; **Gao, J.** Interactions of Polyelectrolyte Shells with Cells. *J. Biomed. Mat. Res.* **2005**, *73*, 303-315.

44. Ai, H.; Flask, C.; Weinberg, R.; Shuai, X.; Pagel, M.; Farrell, D.; Duerk, J.; **Gao, J**. Magnetite-Loaded Polymeric Micelles as Novel Magnetic Resonance Probes. *Adv. Mater.* **2005**, *17*, 1949-1952.

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48. Wang, F.; Blanco, E.; Ai, H.; Boothman, D.; **Gao, J.** Modulating β-Lapachone Release from Polymer Millirods through Cyclodextrin Complexation. *J. Pharm. Sci.* **2006**, *95*, 2309-2319.

49. Nasongkla, N.; Bey, E.A.; Ren, J.; Ai, H.; Khemtong, C.; Setti, J.G.; Chin, S.F.; Sherry, A.D.; Boothman, D.A.; **Gao, J.** Multifunctional Polymeric Micelles as Cancer-Targeted, MRI-Ultrasensitive Drug Delivery Systems. *Nano Letters* **2006**, *6*, 2427-2430.

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54. Chaubey, G.S.; Barcena, C.; Poudyal, N.; Rong, C.; **Gao, J**.; Sun, S.; Liu, J.P. Synthesis and Stabilization of FeCo Nanoparticles. *J. Am. Chem. Soc.* **2007**, *129*, 7214-7215.

55. Tao, L.; Crouch, A.; Yoon, F.; Lee, B.K.; Guthi, J.S.; Kim, J.Y.; **Gao, J.** Hu, W. Induced patterning of organic and inorganic materials by spatially discrete surface energy. *J. Vac. Sci. Tech. B,* **2007**, *25*, 1993-1997.

56. Sutton, D.; Wang, S.H.; Nasongkla, N.; **Gao, J.** Dormidontova, E.E. Doxorubicin and β-Lapachone Release and Interaction with Micellar Core Materials: Experiment and Modeling. *Exp. Biol. Med.* **2007**, *232*, 1090-1099.

57. Bey, E.A.; Bentle, M.S.; Reinicke, K.E.; Dong, Y.; Yang, C.R.; Girard, L.; Minna, J.D.; Bornmann, W.G.; **Gao, J.;** Boothman, D.A. A Novel NQO1- and PARP-1-Mediated Cell Death Pathway Induced In Non-Small Cell Lung Cancer Cells By ß-Lapachone. *Proc. Natl. Acad. Sci. USA,* **2007**, *104*, 11832-11837.

58. Blanco, E.; Bey, E.A.; Dong, Y.; Weinberg, B.D.; Sutton, D.M.; Boothman, D.A.; **Gao, J.** β-Lapachone-containing PEG-PLA Polymer Micelles as Novel Nanotherapeutics against NQO1-overexpressing Tumor Cells. *J. Controlled Release*, **2007**, *122*, 365-374.

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60. Sutton, D.; Nasongkla, N.; Blanco, E. **Gao, J.** Functionalized Micellar Systems for Cancer Targeted Drug Delivery. *Pharm. Res.* **2007**, 24, 1029-1046.

61. Weinberg, B.; Blanco, E.; **Gao, J.** Polymer Implants for Intratumoral Drug Delivery and Cancer Therapy. *J. Pharm. Sci.* **2007**, 97,1681-1702.

62. **Gao, J.** EBM Goes BME (Editorial). *Exp. Biol. Med.* **2007**, *232*, 591.

63. Barcena, C.; Sra, A.K.; Chaubey, G.S.; Khemtong, C.; Liu, J.P.; **Gao, J**. Zinc Ferrite Nanoparticles as MRI Contrast Agents. *Chem. Comm.* DOI: 10.1039/b801041b. **2008**, 2224-2226.

64. Yang, X.; Chen, Y.; Yuan, R.; Chen, G.; Blanco, E.; **Gao, J.;** Shuai, X. Folate-Encoded and Fe_3O_4-Loaded Polymeric Micelles for Dual Targeting of Cancer Cells. *Polymer* **2008**, *49*, 3477–3485.

65. Yang, X.; Deng, W.; Fu, L.; **Gao, J.;** Quan, D.; Shuai, X. Folate-Functionalized Polymeric Micelles for Tumor Targeted Delivery of a Potent Multidrug-resistance Modulator FG020326. *J. Biomed. Mat. Res*. **2008**, *86*, 48-60.

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67. Sumer, B.; **Gao, J.** Theranostic Nanomedicine for Cancer (Editorial). *Nanomedicine,* **2008**, *3*, 137-140.

68. Dong, Y.; Chin, S.F.; Blanco, E.; Bey, E.A.; Kabbani, W.; Xie, X.J.; Bornmann, W.G.; Boothman, D.A. **Gao, J.** Intratumoral Delivery of β-Lapachone via Polymer Implants for Prostate Cancer Therapy. *Clin. Cancer Res.* **2009**, *15*, 131-139.

69. Khemtong, C.; Kessinger, C.W.; Ren, J.; Nasongkla, N.; Lubag, A.; Weinburg, B.D.; Sherry, A.D.; **Gao, J.** Off-resonacne Saturation MR Imaging of SPIO-encapsulated Micelles in vivo. *Cancer Res.* **2009***, 69,* 1651-1658. (*Article was picked for the journal cover*)

70. Blanco, E.; Kessinger, C.; Sumer, B.; **Gao, J**. Multifunctional Micellar Nanomedicine for Cancer Therapy. *Exp. Biol. Med.* **2009**, *234*, 123-131.

71. Chen, G.H.; Chen, W.; Wu, Z.; Yuan, R.; Li, H.; **Gao, J**.; Shuai, X.T. MRI-visible polymeric vector bearing CD3 single chain antibody mediated highly efficient gene delivery to T cells for immunosuppression. *Biomaterials*, **2009**, *30*, 1962-1970.

72. Khemtong, C.; Kessinger, C.; **Gao, J.** Polymeric Nanomedicine for Cancer MR Imaging and Drug Delivery. *Chem. Comm*. **2009**, 3497-3510. (*Article was picked for the journal cover*)

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Book Chapters

1. **Gao, J.**; Mrksich, M.; Mammen, M.; Whitesides, G. M. Using Capillary Electrophoresis to Study Interactions of Proteins with Ligands, in *High Performance Capillary Electrophoresis*, Khaledi, M. G. Ed; John Wiley & Sons, Inc.: New York, 947-972 (1998).

2. Weinberg, B.; Qian, F.; **Gao, J.** Development and Characterization of Dual Release Millirods for Tumor Treatment, in *Polymeric Drug Delivery: Science & Application*. S. Svenson, Ed.; ACS Symposium Series. 169-185 (2006).

3. **Gao, J.**; Nasongkla, N.; Khemtong, C. cRGD-Encoded, MRI-Visible Polymeric Micelles for Tumor-Targeted Drug Delivery, in *Nanotechnology For Cancer Therapeutics,* Amiji M.M. Ed; CRC Press. 465-475 (2007).

4. Barcena, C.; Sra, A.K.; **Gao, J.** Applications of Magnetic Nanoparticles in Biomedicine, in *Nanoscale Magnetic Materials and Applications*, Liu P., Sellmyer, D., Fullerton, E., and Gutfleisch, O. Eds; Springer Science & Business Media, Inc. 591-626 (2009).

5. Ding, H.Y.; Sumer, B.D.; Gao, J. Clinical Applications of Heme Biosynthetic Pathway: Photodynamic Therapy with Protoporphyrin IX, in Heme Biology, Zhang L. Ed. World Scientific, Inc. In press.

Patents

(1) Niklason, L.; Gao, J.; Langer, R. S. Tissue-engineered tubular construct having circumferentially oriented smooth muscle cells. Patent number: 6537567. Issued Date: March 25, 2003.
(2) Gao, J.; Nasongkla, N.; Pink, J.; Boothman, D.A. Lapachone delivery systems, compositions and uses related thereto. Patent Number: US 6, 890, 950. CWRU number: 2002-0715. Issued Date: May 10, 2005.

(3) Ai, H.; Shuai, X.; Weinberg, B.; Duerk, J.; Lewin, J.; Flask, C.; Gao, J. Dual Function Polymer Micelles (2004-0887). International Publication Number: WO 2005/120585. Issued Date: Dec. 22, 2005.

(4) Hu, W.; Crouch, A.; Yoon, F.; Tao, L.; Zhao, X.M.; Gao, J. Mass Production of Polymer Nanodiscs Using Surface Energy Induced Patterning (SEIP). Invention disclosure filed on Nov. 15, 2007.

(5) Gao, J.; Hu, W.; Aryal, M.; Buyukserin, F.; Zhao, X.M. Mass Production of Polymer Nanorods Using Template-Directed Polymer Molding. Invention disclosure filed on Dec. 20, 2007.

(6) *Gao, J.; Boothman, D. Methods of Treating Cancer Comprising Targeting NQO1. Serial No.: UTSD.P2376US. Filed on Sept. 22, 2010.*

(7) *Gao, J.; Chen, H.; Huang, G.; Dong, Y.; Boothman, D. Compositions and Methods for the Delivery of β-Lapachone. Serial No.: UTSD.P2378US. Filed on Sept. 22, 2010.*

(8) *Zhou, Y.; Gao, J.; Dong, Y.; Boothman, D. pH-Sensitive Compositions for the Delivery of β-lapachone and methods of use. Serial No.: UTSD.P2379US. Filed on Sept. 22, 2010.*

(9) *Zhou, K.; Huang, X.N.; Wang, Y.G.; Huang, D.; Sumer, B.S.; Boothman, D.A.; Gao, J. Novel Block Copolymer and Micelle Compositions and Methods of use thereof. Filed on April 1, 2011.*

*StemPar Pharmaceutics (Palo Alto, CA) has licensed these inventions from UT Southwestern.

Grants

(a) Active

1. Principal Investigator, "Ultra-Sensitive MR Probes for Molecular Diagnosis of Lung Cancer." Source: National Institutes of Health (RO1CA129011). Priority score: 128 (6.4%). Period: 7/9/08-5/31/12. Amount: $1, 570, 000.

2. Principal Investigator, "Micellar Nanotherapeutics for Targeted Therapy of Lung Cancer." Source: National Institutes of Health (RO1 CA122994). Priority score: 145 (9.9%). Period: 5/1/07-2/28/12. Amount: $ 1,491,500.

3. Co-Investigator, "Use of β-lapachone for Lung Cancer Chemotherapy". Source: National Institutes of Health (2R01 CA102792). Priority score: 138 (5.2%). PI: David Boothman. Period: 7/01/08 – 04/30/13. Amount: $1, 962, 500.

4. Co-PI, "Dual MRI/Fluorescent Nanoprobes for Robotic Surgery of H&N Tumors". Source: Texas FUSION fund. Period: 1/1/2011-12/31/2012. Amount: $200,000. Other co-PI: B. Sumer (Otolaryngology).

5. Co-Principal Investigator, "Defined nanoscale Si sensors as cancer diagnostic devices". Source: Texas Instrument. Other Co-PIs: W. Hu and E. Vogel (UTD) and B. Sumer (UTSW). Period: 4/1/2008-3/31/2011. Amount: $500,000.

6. Co-Investigator, "Nanotechnology for Cellular Therapies". Source: Department of Defense. PI: Willson, James K. Period: 9/4/2009-10/03/2011. Amount: $1,871,000.

7. Principal Investigator, "pH-activatable Micellar Nanoprobes for Cancer Molecular Imaging". Source: NIH/NIBIB (RO1 EB013149). Priority score: 17 (4%). Period: 7/1/11-6/30/16. Amount: $1,500,000.

8. Principal Investigator, "Turn ON the Tumor Contrast for Surgical Resection of Head and Neck Cancers". Source: CPRIT (Texas Cancer Fund). Period: 12/01/2011-11/30/2014. Amount: $965, 257.

(b) Completed

1. Principal Investigator, "MFe_2O_4-Loaded Polymer Micelles as Ultra-Sensitive MR Molecular Probes." Source: National Institutes of Health (R21 EB005394). Priority score: 158. Period: 9/1/05-8/31/09. Amount: $ 1, 530, 000.
2. Principal Investigator, "MFe_2O_4-Loaded Polymer Micelles as Ultra-Sensitive MR Molecular Probes." Source: National Institute of Health (Minority Supplement for Mr. Carlos Barcena). Period: 9/1/06-8/31/09. Amount: $ 150,529.
3. Advisor for a DOD Multidisciplinary postdoctoral fellowship, "Ultrasensitive MR probes for early breast cancer detection." PI: Charlie Khemtong. Source: Department of Defense. 9/15/06-8/14/09. Amount: $430,000.
4. Advisor for a Susan G Koman Breast Cancer postdoctoral fellowship, "Ultrasensitive MR probes for early breast cancer detection." PI: Chun-Fu Zhang. Source: Susan G Koman Breast Cancer Foundation. 7/1/07-6/30/10. Amount: $135, 000.
5. Co-Investigator, "^{1}H MRI based nanosensors for imaging tumor oxygenation" Source: Natnional Institutes of Health (1R21CA132096). Priority score: 150 (1.4%). PI: Kodibagkar, Vikram D. Period: 12/01/08-11/31/10. Amount: $275,000.
6. Co-Investigator, "UT Southwestern Small Animal Imaging Resource". Source: National Institutes of Health (U24CA126608) (PI: Ralph Mason, Dean Sherry). Period: 4/1/2007-3/30/2010. Amount: $50, 000. Developmental Project: Development of multi-chromatic MR agents for cancer diagnosis (Gao, Sherry, Brown).
7. Principal Investigator of consortium, "Design of Targeting Enhancement for Drug Delivery". Source: National Institutes of Health (1R21CA112436). PI: Elena Dormindotova. Period: 2/1/06-1/31/09. Amount: $157,000.
8. Principal Investigator, "Nanotubular Capsules as Ultrasensitive MR Molecular Probes." Source: Montcrief Foundation. Period: 10/1/06-9/30/09. Amount: $250,000.
9. Co-Investigator, "Use of β-lapachone for local delivery lung cancer chemotherapy." Source: National Institute of Health (R01 CA102792). PI: David Boothman. Period: 10/01/03 – 06/30/08. Amount: $1, 784, 000.
10. Advisor for a DOD predoctoral fellowship, "Multimodality CT/SPECT Evaluation of Micelle Drug Carriers for Treatment of Breast Tumors" PI: Brent D. Weinberg. Source: Department of Defense. 7/1/05-6/30/08. Amount: $90,000.
11. Principal Investigator, "Development of Ultra-Sensitive MR Probes for Early Detection of Lung Cancer". Source: Developmental Project for NCI lung SPORE (PI: John Minna, P50CA070907). Period: 7/1/07-6/30/08. Amount: $25,000.
12. Principal Investigator, "Development of Lung Cancer-Targeted Polymer Micelles". Source: Developmental Project for NCI lung SPORE (PI: John Minna, P50CA070907). Period: 2/1/06-1/31/07. Amount: $25,000.

13. Advisor for a DOD postdoctoral fellowship, "Combined Radiation and β-Lapachone Millirod Therapy for Prostate Tumors." PI: Shook-Fong Chin. Source: Department of Defense. 10/1/04-4/30/07. Amount: $125, 000.

14. Co-Principal Investigator, "Use of β-lapachone-encapsulated millirods for improved therapy of prostate cancer." PI: David Boothman. Source: Department of Defense. Time commitment: 5%. Period: 10/1/03-9/30/06. Amount: $573, 187.

15. Co-Investigator, "Genetics of gastrointestinal cancers." PI: Joe Nadeau. Source: Ohio Biomedical Research Technology Trust Partnership Award. Period: 6/1/03-6/30/05. 10% CY. Amount: $3, 350, 000. My support was approximately $50, 000 per year.

16. Principal Investigator, "Interstitial drug delivery to the thermoablated liver tumors." Source: National Institute of Health (R01 CA90696). Period: 5/1/02-4/30/07. Amount: $1, 284, 000.

17. Principal Investigator, "Interstitial drug delivery to the thermoablated liver tumors". Source: National Institute of Health (Minority Supplement for Mr. Elvin Blanco). Period: 8/1/02-4/30/07. Amount: $192, 218.

18. Principal Investigator, "Drug delivery system for thermoablated liver tumors." Source: Whitaker Foundation. Period: 5/1/2000-4/30/2003. Amount: $ 210, 000.

19. Principal Investigator, "Computed Tomography: In vivo measure of platinum-containing drugs." Source: National Institute of Health (R21 CA093993). Period: 2/1/02-1/31/04. Amount: $ 382, 500.