

George M. Whitesides

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Cambridge, MA 02138

i. Professional Preparation

Harvard University, Cambridge, MA	AB	1960	Chemistry
Cal Tech, Pasadena, CA (with J.D. Roberts)	PhD	1964	Chemistry

ii. Appointments

2004 – present:	Harvard University, Woodford L. and Ann A. Flowers University Professor
1987 – 2004:	Harvard University, Mallinckrodt Professor of Chemistry (Chairman 1986-1989)
1983 – 1986:	Harvard University, Professor of Chemistry
1980 – 1983:	Massachusetts Institute of Technology, Haslam & Dewey Professor of Chemistry
1978 – 1980:	Massachusetts Institute of Technology, Arthur C. Cope Professor of Chemistry
1974 – 1978:	Massachusetts Institute of Technology, Professor of Chemistry
1969 – 1973:	Massachusetts Institute of Technology, Associate Professor of Chemistry
1963 – 1969:	Massachusetts Institute of Technology, Assistant Professor of Chemistry

iii. Publications

Five most relevant:

- "An Integrated Approach to a Portable and Low-Cost Immunoassay for Resource-Poor Settings", Sia, S. K., Linder, V., Amirparviz, B. A., Siegel, A. and Whitesides, G. M., *Angew. Chem. Int. Ed.*, **2004**, *43*, 498-502.
- "A Miniaturized, Parallel, Serially Diluted Immunoassay for Analyzing Multiple Antigens", Jiang, X., Ng, J., Stroock, A., Dertinger, S. and Whitesides, G. M., *J. Am. Chem. Soc.*, **2003**, *125*, 5294-5295.
- "Reagent-Loaded Cartridges for Valveless and Automated Fluid Delivery in Microfluidic Devices", Linder, V., Sia, S. K. and Whitesides, G. M., *Anal. Chem.*, **2005**, *77*, 64-71.
- "A General Method for Patterning Gradients of Biomolecules on Surfaces Using Microfluidic Networks", Jiang, X., Xu, Q., Dertinger, S. K. W., Stroock, A. D., Fu, T. and Whitesides, G. M., *Anal. Chem.*, **2005**, *77*, 2338-2347.
- "Kosmotropes Form the Basis of Protein-Resistant Surfaces", Kane, R. S., Deschatelets, P. and Whitesides, G. M., *Langmuir*, **2003**, *19*, 2388-2391.

Five significant and also relevant:

- "Whitesides' Group: Writing a Paper", Whitesides, G. M., *Adv. Mater.*, **2004**, *16*, 1375-1377.
- "Potentiometric Titrations in a Poly(dimethylsiloxane)-Based Microfluidic Device", Ferrigno, R., Lee, N., J. Jiang, X. and Whitesides, G. M., *Anal. Chem.*, **2004**, *76*, 2273-2280.
- "Micropatterned Agarose Gels for Stamping Arrays of Proteins and Gradients of Proteins", Mayer, M., Yang, J., Gitlin, I., Gracias, D. H. and Whitesides, G. M., *Proteomics*, **2004**, *4*, 2366-2376.
- "Generation of Monodisperse Particles Using Microfluidics: Control Over Size, Shape and Composition", Xu, S., Nie, Z., Seo, M., Lewis, P., Kumacheva, E., Garstecki, P., Weibel, D. B., Gitlin, I. and Whitesides, G. M., *Angew. Chem. Int. Ed.*, **2005**, *44*, 724-728.
- "Self-Assembled Monolayers (SAMs) and Synthesis of Planar Micro- and Nanostructures", Yan, L., Huck, W. T. S. and Whitesides, G. M., *J. Macro. Sci.*, **2004**, *44*, 175-206.

iv. Synergistic Activities

Selected Awards: National Medal of Science (1998); The Wallace Oy Innovation Award in High Throughput Screening (Society for Biomolecular Screening) (1999); Award for Excellence in Surface Science (Surfaces in Biomaterials Foundation) (1999); Von Hippel Award (Materials Research Society) (2000); World Technology Award for Materials from the World Technology Network (2001); Doctorate Honoris Causa, University of Twente (The Netherlands) (2001); Small Times Magazine's Researcher of the Year award (2002); Pittsburgh Analytical Chemistry Award (Society for Analytical Chemists of Pittsburgh) (2003); Kyoto Prize for Advanced Technology (Inamori Foundation) (2003); Paracelsus Prize (Swiss Chemical Society) (2004); Jacob Heskell Gabbay Award in Biotechnology and Medicine (2004); 2004 Dickson Prize in Science (Carnegie Mellon University) (2005); Dan David Prize (Dan David Foundation) (2005); Welch Foundation Award (2005); Linus Pauling Medal (Oregon, Portland, and Puget Sound Sections of ACS) (2005).

Fellow: American Academy of Arts and Sciences; National Academy of Sciences; National Academy of Engineering; American Philosophical Society; American Association for the Advancement of Science; New York Academy of Sciences; World Technology Network; Institute of Physics, Foreign Fellow of the Indian National Science Academy; Royal Netherlands Academy of Arts and Sciences.

Recent NSF advisory positions: Chemistry Advisory Committee (1984-86; Chairman, 1986), Materials Research Advisory Committee (1991-93; Chairman, 1993), Review Panel for the Materials Research Laboratories (1993, co-Chairman); Advisory Committee for Mathematics and Physical Sciences (1993-96); NSF Senior Assessment Panel: International Assessment of U. S. Mathematical Sciences (1997); Workshop on Chemical Bonding Centers, (2003).

Editorial Boards: Bioorganic and Medicinal Chemistry Letters, Chemistry of Materials, Angewandte Chemie, Chemistry & Biology, Langmuir, Nanotechnology, Colloids and Surfaces B: Biointerfaces, Sensors and Actuators, Electrophoresis, and Small.

v. Collaborators and Other Affiliations

a. Collaborators and Co-Editors Senior investigators with whom we have shared authorship on one or more papers since 1999 include: Bob Westerveld, Harvard; John Rogers, U. Illinois; Klaus Jensen, MIT; Jeff Carbeck, Princeton; Y. Xia, U. Washington; J. Aizenberg, Lucent; Don Ingber, Harvard Med. School; Maria Anita Rampi, U. Ferrara; Rustem Ismagilov, Chicago; Paul Kenis, U. Ill.; Bartosz Grzybowski, Northwestern; Joe Tien, Boston U.; John Deutch, MIT; Ralph Nuzzo, U. Ill.; Greg Girolami, U. Ill.; Noo-Li Jeon, U.C. Irvine; Ned. Bowen, U. Iowa; Mara Prentiss, Harvard; Dan Chiu, U. Wash.; Wilhelm Huck, Cambridge (UK); Abe Stroock, Cornell; Chris Chen, Johns Hopkins; Henry White, Utah; David Gracias, Johns Hopkins; John Hutchinson, Harvard; Eugene Shakhnovich, Harvard; Galen Stucky, U.C. Santa Barbara; Sue Whitesides, McGill; Steve Metallo, George Wash. Univ.; Tony Evans, U.C. Santa Barbara; Shaw Warren, Harvard Med. School; Howard Stone, Harvard; Shu Takayama, U. Mich.; Heiko Jacobs, U. Minn.; Jim Hogle, Harvard Med. School; Armand Ajdari, U. Paris; David Christianson, U. Penn.; Venkat Thalladi, Worcester Polytechnic; Teri Odem, Northwestern; Andreas Manz, Dortmund; Charlie Lieber, Harvard; Rosaria Ferrigno, U. Lyon; Paul Nealey, U. Wisc.; Michael Mayer, U. Mich.; Milan Mrksich, Chicago; Ravi Kane, RPI; Ralph Nuzzo, U. Ill.; Eric Mazur, Harvard; Richard Syms, U. Manchester (UK); Victor Bright, U. Colo.; Eugenia Kumacheva, Toronto; Margaret Tosteson, Harvard. Med. School; Cathy Costello, Boston Univ.; Babak Amirparviz, U. Wash.; Ning Wang, Harvard Med. School; Michael Grunze, U. Maine, Heidelberg; Dong Qin, U. Wash.; Grant Willson, U. Texas at Austin; Jon Clardy, Harvard Med. School.

b. Graduate Advisor: J. D. Roberts, California Institute of Technology (PhD advisor; no postdoctoral advisor).

c. Thesis Advisor and Postgraduate-Scholar Sponsor (since 1999)

Graduate Students (30): George Sigal, IGEN; Enoch Kim, Surface Logix; Eric Simanek, Tex. A&M; Mathei Mammen, Theravance; Younan Xia, U. Wash.; Jinming Gao, Case Western; Robert Bird, CAS; Rebecca Jackman, The Commonwealth School; Laura Goetting, Shell; Andrew Black, Patent Office, Australia; Insung Choi, KIST (Korea); Emanuele Ostuni, McKinsey & Co; Tao Deng, MIT; Scott Brittain, Georgia State College; Jianghong Rau, Stanford; Ned Bowden, Iowa State; Joe Tien, Boston Univ.; Xiao-mei Zhao, Goodrich; Bartosz Grzybowski, Northwestern U.; JC McDonald, Clark & Elbing, LLP; Janelle Anderson, self-employed; Kateri Paul, Nomadics; Ming-Hsien Wu, self-employed; Abraham Stroock, Cornell U.; Hongkai Wu, Stanford; Daniel Wolfe, Harris & Harris, NY; John Love, Harvard Med. School; Jessamine Lee, Wolf, Greenfield & Sachs; Justin Jiang, Beijing University, China; Willow DiLuzio, Millennium Pharmaceuticals, Boston.(24 current grad. students not listed).
Postdoctoral Fellows (58): Joanna Aizenberg, Lucent; Seok-ki Choi, Theravance; Ian Colton, Canada; Junmin Hu, HP; Lyle Isaacs, U. Maryland; Christain Marxolin, France; Dong Qin, U. Wash.; John Rogers, U. Ill.; Nik Wilmore, self-employed.; Younan Xia, U. Wash.; Lin Yan, Bristol-Meyers Squibb; Carmichael Roberts, Surface Logix; Andreas Terfort, Germany; Jeff Carbeck, Princeton; Francisco Arias, P&G; Tricia Breen, IBM; Bob Chapman, Predicant Bioscience; Daniel Chiu, U. Wash.; Peter Glink, UNSW, Australia; Rainer Haag, U. Freiburg; Wilhelm Huck, Cambridge U.; Noo Li Jeon, U.C. Irvine; Paul Kenis, U. Ill.; Joydeep Lahiri, Corning; Michael Liang, Advent; Scott Oliver, SUNY-Binghamton; Olivier Schueller, Surface Logix; Shu Takayama, U. Mich.; Marcus Weck, U. Georgia; Bing Xu, Hong Kong; Jason Wiles, Achillion Pharmaceuticals; Laurie Calvet, MIT; Venkat Thalladi, WPI; Teri Odom, Northwestern U., Cheolmin Park, Yonsei U., Korea; Alex Schwartz, McKinsey & Co.; Abraham Stroock, Cornell U.; Bartosz Grzybowski, Northwestern U.; Chengde Mao, Purdue U.; Rosaria Ferrigno, U. Lyon, France; Jerry Yang, UCSD; Babak Amirparviz, U. Wash.; Michael Mayer, U. Mich.; Vincent Linder, U. Neuchatel; Mila Boncheva-Bettex, Firmenich SA; Declan Ryan, Harvard Med. School; Adam Urbach, Trinity U.; Elizabeth Tran, Corning; Byron Gates, Simon Fraser U.; Valentine Vullev, Photosecure.; Vincent Semetey, Institut Curie; Richard Conroy, NIH; Roman Boulatov, U. Ill.; Tingbing Cao, China; Samuel Sia, Columbia; Lara Estroff, Cornell U.; Nicolae Damean, Romania; Piotr Garstecki, Polish Acad. Sci. (15 current postdoc. fellows not listed).