

Exhibit A

Name Michel Martin Maharbiz

Professional Preparation

1997	Cornell University	Electrical Engineering & Computer Science	B.S.
2003	University of California at Berkeley	Electrical Engineering & Computer Science	Ph.D.

Appointments

2010 – current	Associate Professor, EECS Dept., University of California, Berkeley
2010 – 2011	Vice-President of Product Development, Quswami, Inc. (on industrial leave from U.C Berkeley, 7/2010 – 6/2011)
2008 – 2010	Assistant Professor, EECS Dept., University of California, Berkeley
2003 - 2007	Assistant Professor, EECS Dept., University of Michigan, Ann Arbor

Professional Activities, Major Invited Talks and Honors

2011	Keynote Speaker, <i>Sensys 2011</i>
2011	Invited Speaker, 2011 <i>International Joint Conference on Neural Networks</i> , San Jose, California, July 31 - August 5, 2011
2011	Invited Speaker, VLSI Symposium, Kyoto, June 2011
2011	Speaker, <i>Science of Cyborgs</i> , Science and Entertainment Exchange, National Academy of Science, Hollywood, CA
2010	Keynote Speaker, <i>IEEE Sensors</i> , Nov 2010
2009	NSF CAREER
2009	Editorial Board (Systems Biology), <i>Journal of Experimental Biology and Medicine</i>
2009	MIT Technology Review, TR 10 list (www.technologyreview.com/tr10)
2009	Time Magazine's Top 50 Inventions of the Year
2009	Invited Speaker, <i>CMOS ET</i> , Banff, Canada, Feb 16, 2009
2008-2009	Transducers 2009, Technical Program Committee
2005-2006	President, <i>University of Michigan Latino Faculty-Staff Association (LFSA)</i> , University of Michigan.
2005-2006	Chair of Educational Activities for the IEEE Sensor Council
2005	Invited Speaker, National Academy of Engineering, German-American Frontiers of Engineering Symposium, Potsdam, May 5 – 7, 2005
2005	National Science Foundation Workshop Co-chair, "From Macro to Nano: Challenges and Opportunities in Integrative Complex Systems Engineering," sponsored by the National Science Foundation, co-chairs: Rajinder Khosla and Kensall D. Wise, Arlington, VA, March 7-8, 2005.
2003	2nd place (\$1000 prize), Stanford's Vertex Innovator's Challenge
2003	Finalist (\$1000 prize), USF Business Plan Competition
2003	Merck Best Paper Award, Biochemical Engineering, Boulder, CO
1999-2001	Intel Masters Award Program (IMAP) Fellowship
1997-1998	Graduate Opportunity Award Program
1997	Summer Undergraduate Program in Engineering Research at Berkeley (SUPERB)
1995-1997	GE Scholar, Cornell University

Reviewer

Nature Biotechnology, PNAS, Lab on a Chip, Physical Chemistry Chemical Physics, Biotechnology and Bioengineering, Smart Materials and Structures, *Journal of Experimental Biology and Medicine*, Sensors and Actuators A, *Journal of Micro/Nanolithography*, JMEMS, and MOEMS, IEE Proceedings on Nanobiotechnology, IEEE Transactions on Electron Devices (Society for Electron Devices), Canadian Journal of Microbiology, Army Research Office, National Science Foundation, National Research Foundation, Singapore, International Journal of Nanosystems and Technology (IJNST)

Publications

Books

Fawwaz P. Ulaby and Michel M. Maharbiz, *Circuits*, 1st Ed, NTS Press, 2009

Book Chapters

H. Sato, D. Cohen, and M. M. Maharbiz, "Building Interfaces to Developing Cells and Organisms: From Cyborg Beetles to Synthetic Biology," in *CMOS Biomicrosystems*, John Wiley & Sons, Inc., 2011, pp. 325-354.

Journal Publications

1. Justin Hsia, William A. Holtz, Daniel C. Huang, Murat Arcak, Michel M. Maharbiz, "A feedback quenched oscillator produces Turing patterning with one diffuser," *in press, PLoS Biology*, 2012.
2. Daniel Cohen, Debkishore Mitra, Kevin Peterson and Michel M. Maharbiz, "A highly elastic, capacitive strain gauge based on percolating nanotube networks," *in review*
3. S Chen, N Patel, D Schaffer and M M Maharbiz, "Trap and corral: a two-step approach for constructing and constraining dynamic cell contact events in differentiating progenitor cell populations," *J. Micromech. Microeng.*, 21 (2011). 054027 doi: 10.1088/0960-1317/21/5/054027.
4. H. Sato, M.M. Maharbiz "Recent Developments in the Remote Radio Control of Insect Flight" *Frontiers in Neuroscience*, 4:199 (2010). *Invited Review*.
5. M.M. Maharbiz and H. Sato "Cyborg Beetles: Tiny flying robots that are part machine and part insect may one day save lives in wars and disasters" *Scientific American*, Vol. 303, Number 6, 94-99 (December 2010).
6. Sato H, Berry CW, Peeri Y, Baghoomian E, Casey BE, Lavella G, VandenBrooks JM, Harrison JF and Maharbiz MM, "Remote radio control of insect flight," *Front. Integr. Neurosci.* 3:24, 2009. doi:10.3389/neuro.07.024.2009
7. Daniel J. Cohen, Roberto Morfino, Michel M. Maharbiz, "Spatiotemporal Control of Gene Expression via Inkjet Printing," *PLoS ONE*, Sep 18;4(9), 2009,:e7086.

8. Ruba T. Borno, Joseph D. Steinmeyer, Michel M. Maharbiz, "Charge-pumping in a synthetic leaf for harvesting energy from evaporation-driven flows," *Applied Physics Letters*, 95, 2009, 013705.
9. Meng-Ping Chang and Michel M. Maharbiz, "Electrostatically-driven elastomer components for user-reconfigurable high density microfluidics," *Lab on a Chip*, vol 9, pp. 1274 – 1281, 2009.
10. T. Bansal, J. Lenhart, T. Kim, C. Duan and M. M. Maharbiz, 'Patterned delivery and expression of gene constructs into developing zebrafish embryos using microfabricated interfaces', *IEEE Biomedical Microdevices*, Jan 2009, no.1, vol. 11.
11. T.K. Kim, M Pinelis, M. M. Maharbiz, "Generating Steep, Sheer-free Gradients of Small Molecules for Cell Culture," *IEEE Biomedical Microdevices*, Dec 2008, 10(6), pp. 807-11.
12. M. Pinelis, T. Kim, M. M. Maharbiz, "A high-yield method for generating mass-transfer gradients in elastomer microfluidics using impermeable capillaries," *IEEE Biomedical Microdevices*, Dec 2008, 10(6), pp. 807-11.
13. R. F. Ismagilov and M. M. Maharbiz, "Can we build synthetic, multicellular systems by controlling developmental signaling in space and time?" *Current Opinion in Chemical Biology*, 11 (6), pg. 604-611, 2008.
14. T. Bansal, M.P. Chang, M. M. Maharbiz, "A class of low voltage, PDMS-gold 'wet' actuators for use in high-density microfluidics," *Lab on a Chip*, 7, pg. 164-166, 2007.
15. R.T. Borno, J.D. Steinmeyer, and M. M. Maharbiz, "Transpiration actuation: the design, fabrication, and characterization of biomimetic microactuators driven by the surface tension of water," *Journal of Micromechanics and Microengineering*, 16, pg. 2375-2383, 2006.
16. J. H. Park, T. Bansal, M. Pinelis, M. M. Maharbiz, "Electrolytic patterning of dissolved oxygen microgradients during cell culture," *Lab on a Chip*, 6, pg. 611-622, 2006.
17. M.M. Maharbiz, W. J. Holtz, J.D. Keasling, R.T. Howe, "Microbioreactor arrays with parametric control for high-throughput experimentation," *Biotechnology & Bioengineering*, vol. 85, no. 4, pp. 376 – 381, 20 February 2004.

18. M.M. Maharbiz, W. J. Holtz, S. Sharifzadeh, J.D. Keasling, R.T. Howe, "A Microfabricated Electrochemical Oxygen Generator for High- Density Cell Culture Arrays," *J MicroElectroMechanical Sys*, vol. 12, no. 5, pp. 590-599, October 2003.
19. V. Milanovic, M. M. Maharbiz, and K. Pister, "Batch Transfer Integration of RF Microrelays," *IEEE Microwave and Guided Wave Letters*, vol. 10, no. 8, pp. 313-315, Aug. 2000.

Peer-reviewed Conference Publications with Archival Papers

20. Justin Hsia, William A. Holtz, Daniel C. Huang, Murat Arcak, Michel M. Maharbiz, "A Quenched Oscillator Network for Pattern Formation in Gene Expression," *2011 American Control Conference -- ACC2011*, San Francisco, California, USA, June 29 - July 1, 2011.
21. P. Ledochowitsch, E. Olivero, T. Blanche, and M. M. Maharbiz, "A Transparent μ ECoG Array for Simultaneous Recording and Optogenetic Stimulation," *33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC '11)*, Boston Marriot Copley Place, Aug 30 – Sept 3, 2011.
22. Vedavalli G. Krishnan, Zohora Iqbal, and Michel M. Maharbiz, "A micro Tesla turbine for Power generation from Low pressure heads and Evaporation driven flows", in *The 16th International Conference on Solid-State Sensors, Actuators and Microsystems- Tranducers'11* , June 5-9 , 2011
23. P. Ledochowitsch, R. J. Félus, R. R. Gibboni, A. Miyakawa, S. Bao and M. M. Maharbiz, "Fabrication of a large area, high-density, parylene MEMS μ ECoG array," *24th International Conference on Micro Electro Mechanical Systems (MEMS 2011)*, Cancun, Mexico, January 23 – 27, 2011.
24. Gabriel Lavella, Roberto Morfino, and Michel M. Maharbiz, A Biased Brownian Rathcet for Nanoscale Chemomechanical Transduction, *A Solid-State Sensors, Actuators and Microsystems Workshop (Hilton Head Workshop 2010)*, Hilton Head Island, SC, June 6 - 10, 2010.
25. H. Sato, Y. Peeri, E. Baghoomian, C.W. Berry, M.M. Maharbiz, "Radio-controlled cyborg beetles: a radio-frequency systems for insect neural flight control," *IEEE Micro Electro Mechanical Systems, (MEMS 2009)*, January 25-29, 2009, Sorrento, Italy
26. T. Kim, M. Pinelis, M. M. Maharbiz, Small molecule gradient generator for microfluidic viscous shear-free cell culture. *MicroTAS 2008*, San Diego, CA, USA. 2008, (2), 1879-1881.

27. Hirotaka Sato, Chris W. Berry, M. M. Maharbiz, "Flight Control of 10 Gram Insects By Implanted Neural Stimulators," *Solid State Sensors, Actuators, and Microsystems Workshop 2008 (Hilton Head 2008)*, Hilton Head Island, South Carolina, June 1 – 5, 2008, pp. 90 – 91.
28. Meng-Ping Chang and M. M. Maharbiz, "Electrostatically-actuated Reconfigurable Elastomer Microfluidics," *Solid State Sensors, Actuators, and Microsystems Workshop 2008 (Hilton Head 2008)*, Hilton Head Island, South Carolina, June 1 – 5, 2008, pp. 122 - 125.
29. Hirotaka Sato, Chris W. Berry, Brendan E. Casey, Gabriel Lavella, Ying Yao, John M. VandenBrooks, M. M. Maharbiz, "A cyborg beetle: Insect flight control through an implantable, tetherless microsystem," *IEEE Micro Electro Mechanical Systems, (MEMS 2008)*, 13-17 Jan. 2008, pp. 164-167.
30. R.T. Borno, J.D. Steinmeyer, and M.M. Maharbiz, "Energy scavenging from transpiration," *Eleventh International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS 2007)*, Paris, France, Oct. 2007, pp. 566-568.
31. M. P. Chang, T. Bansal and M. M. Maharbiz, "Electrically-actuated PDMS microvalves and pumps for VLSI microfluidics," *Eleventh International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS 2007)*, Paris, France, October 2007.
32. T. Bansal and M. M. Maharbiz, " 'Wet' AC Actuated Microfluidic Micropore Array for Patterning Diffusible Gradients During Cell Culture," *Tenth International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS)*, Tokyo, Japan, November 2006.
33. M. Pinelis, R. W. Kasinskas, R. T. Borno, J. Park, E. Chu, N. S. Forbes, M. M. Maharbiz, "Microfluidics devices for the assembly and culture of three-dimensional multi-cellular constructs with diffusion-limited microenvironments," *Tenth International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS)*, Tokyo, Japan, November 2006.
34. P. Padmanabhan and M. Maharbiz, "A Microelectrolytic Device for Electronically Controlled Nitric Oxide Micro-Gradient Generation ," *Tenth International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS)*, Tokyo, Japan, November 2006.
35. M.I. Pinelis, J.H. Park and M. M. Maharbiz, "A micro "Flea Circus": Self-assembly of bacteria through spatio-temporal control of aerotaxis," *19th IEEE International Conference on Micro Electro*

Mechanical Systems (MEMS 2006), Lütfi Kırdar Convention and Exhibition Centre, Istanbul, Turkey, January 22 – 26, 2006.

36. T. Bansal, M. M. Maharbiz, "Diffusion Based Chemical Microgradient array for cell culture", *Ninth International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS) 2005*, Boston, MA, October 2005.
37. R.T. Borno, M. M. Maharbiz, "Distributed actuation based on Young-Laplace forces," *The 13th International Conference on Sensors and Actuators (Transducers 2005)*, Coex, Seoul, Korea, June 5-9, 2005.
38. J. H. Park, T. Bansal, B.H. Chueh, S. Takayama, M. M. Maharbiz, "Electrolytic patterning of dissolved oxygen microgradients during cell culture," *18th IEEE International Conference on Micro Electro Mechanical Systems (MEMS 2005)*, Fontainebleau Hilton Resort, Miami Beach, Florida, January 30 - February 3, 2005
39. M.M. Maharbiz, W.J.Holtz, S.Sharifzadeh, J.D. Keasling, R.T. Howe, "A Microfabricated Electrochemical Oxygen Generator for High-Density Cell Culture Arrays," *Solid-State Sensor, Actuator, and Microsystems Workshop*, Hilton Head Island, South Carolina, June 2-6 2002, pp. 259-264.
40. M.M. Maharbiz, R. T. Howe, J. D. Keasling, "Silicon Microbial Bioreactor Arrays," *1st Annual International IEEE-EMBS Special Topic Conference on Microtechnologies in Medicine & Biology*, Palais des Congres, Lyon, France, October 12-14, 2000, pp. 165-170.
41. M.M. Maharbiz, R.T. Howe, K.S.J. Pister, "Batch Transfer Assembly of Micro-Components Onto Surface and SOI MEMS," *Transducers '99 Conference*, Sendai, Japan, June 7-10, 1999, pp. 1478-1481.
42. M.M. Maharbiz, M.B. Cohn, R.T. Howe, R. Horowitz, A.P. Pisano, "Batch micropackaging by compression-bonded wafer-wafer transfer," *Proceedings of 12th International Workshop on Micro Electro Mechanical Systems (MEMS 1999)*, Orlando, FL, USA, 17- 21 Jan. 1999, pp. 482-489.

Papers at Other Conferences and Workshops

43. T. Kim, W. J. Holtz, J. Park, J. D. Keasling, M. M. Maharbiz, Pattern Formation in a Synthetic Microbial Pathway. *Microtechnologies in Medicine and Biology*, 2009, Quebec City, Canada.

44. T. Kim, W. J. Holtz, J. Park, J. D. Keasling, M. M. Maharbiz, Synthetic microbial pattern formation modulated by a chemical micro-interface. *Synthetic Biology 4.0*, 2008, Hong Kong.
45. R. T. Borno, J. D. Steinmeyer, and M. M. Maharbiz, "Scalable Biomimetic Self-Assembling Actuators Powered By Surface Tension," *Foundations of Nanoscience: Self-Assembled Architectures and Devices (FNANO06)*, Snowbird, Utah, April 2006.
46. M. Pinelis, J. Park and M. Maharbiz, "Bacterial Aerotaxis Assays with Spatial and Temporal Control of Oxygen Microscale Gradients," *Biomedical Engineering Society (BMES), Annual Fall Meeting*, Baltimore, Maryland, September 2005
47. J. H. Park, T. Bansal, M. M. Maharbiz, "Patterning Dissolved Oxygen Microgradients during Cell Culture," *Hypoxia and Development, Physiology and Disease (Keystone Symposia)*, Beaver Run Resort, Breckenridge, Colorado, January 16 - 21, 2006.

Papers on Education / Teaching / Class Design

48. L. C. McAfee, K. Najafi, Y. Gianchandani, K. D. Wise, and M. M. Maharbiz, D.M. Aslam, P. Bergstrom, C. Friedrich, "MEMS and Microsystems Courses with National and International dissemination", *Proc. ASEE Annual Conference*, Chicago, 84, 2006.
49. L. C. McAfee, K. Najafi, Y. Gianchandani, K. D. Wise, and M. M. Maharbiz, D.M. Aslam, P. Bergstrom, C. Friedrich, "A MEMS/MICROSYSTEM CURRICULUM WITH INTERNATIONAL DISSEMINATION ", *Solid State Sensors, Actuators, and Microsystems Workshop 2006 (Hilton Head 2006)*, Hilton Head Island, South Carolina, June, 2006
50. M. M. Maharbiz, "Self-Assembly of a BioMEMS Syllabus: Teaching BioMEMS through the developing organism," *Solid State Sensors, Actuators, and Microsystems Workshop 2006 (Hilton Head 2006)*, Hilton Head Island, South Carolina, June, 2006

Invited Talks (excluding talks at university research groups)

51. Keynote Speaker, *Sensys 2011*, Seattle, November 2011
52. Invited Speaker, *2011 International Joint Conference on Neural Networks*, San Jose, California , July 31 - August 5, 2011
53. Invited Speaker, *VLSI Symposium*, Kyoto, June 2011
54. Speaker, *Science of Cyborgs*, Science and Entertainment Exchange, National Academy of Science, Hollywood, CA2010
55. Keynote Speaker, IEEE Sensors, Nov 2010 Plenary, *IEEE Sensors 2010*

- 56. *Chip on the Dunes*, 22nd Symposium on Integrated Circuits and System Design (SBCCI), Natal, Brazil, August 31 to September 3, 2009
- 57. *CMOS ET*, Banff, Canada, Feb 16, 2009
- 58. *Center for Information Technology Research in the Interest of Society (CITRIS)*, Berkeley, CA, March 2009
- 59. *National Academy of Engineering*, German-American Frontiers of Engineering Symposium, May 5 – 7, 2005

Current Graduate students

Gabriel Lavella (EECS, Berkeley, PhD, expected December 2010)
Sisi Chen (Bioengineering, Berkeley, PhD, expected May 2011)
Daniel Cohen (Bioengineering, Berkeley, PhD, expected May 2012)
Peter Ledochowitsch (Bioengineering, Berkeley, PhD, expected May 2012)
Vedavalli Krishnan (EECS, Berkeley, PhD, expected December 2013)
Travis Massey (EECS, Berkeley, PhD, expected December 2013)

Former Graduate students

Jaehyun Park (EECS, Berkeley, PhD, May 2010)
Mike Pinelis (EECS, U Michigan Ann Arbor, PhD, December 2009)
Tushar Bansal (EECS, U Michigan Ann Arbor, PhD, May 2009)
Ruba T. Borno (EECS, U Michigan Ann Arbor, PhD, May 2008)
Meng-Ping Chang (EECS, U Michigan Ann Arbor PhD May 2008)
Whijae Roh (Bioengineering, U Michigan Ann Arbor, Masters, May 2007).

Postdocs

Daniel Huang
Amol Jadhav
Hirotaka Sato
Taesung Kim (now Assistant Professor, UNIST, Korea)

PhD Committee

Roger T. Howe (Stanford)
Jay D. Keasling (UC Berkeley)
Kris J. Pister (UC Berkeley)
Luke P. Lee (UC Berkeley)