Mark L. Chang

Contact Information

Franklin W. Olin College of Engineering
1000 Olin Way
Needham, MA 02492
USA

Mobile: 781.559.0565
Fax: 781.292.2508
Email: mark.chang@olin.edu
Web: http://markchang.net

Education

1. Ph.D. in Electrical Engineering, University of Washington, Seattle, WA, 2004.

   Thesis: *Variable Precision Analysis for FPGA Synthesis*
   Adviser: Scott Hauck

2. M.S., Electrical and Computer Engineering, Northwestern University, Evanston, IL, 2000.

   Thesis: *Adaptive Computing in NASA Multi-Spectral Image Processing*
   Adviser: Scott Hauck

3. B.S. with University and Departmental Honors, Electrical and Computer Engineering, The Johns Hopkins University, Baltimore, MD, 1997.

Research Interests

Mobile, social, and ubiquitous computing; engineering education; design and student motivation; reconfigurable computing

Awards

1. Intel Corporation: 2002-2003 Intel Foundation Graduate Fellowship
2. University of Washington: Outstanding Graduate Research Assistant (2002), Nominated for the Yang Research Award (2002)
3. Northwestern University: Royal E. Cabell Fellowship (1997), ECE Department Best Teaching Assistant Honorable Mention (1998)
4. Johns Hopkins University: IEEE student chapter president (1996), Eta Kappa Nu chapter president (1996, 1997), Tau Beta Pi, Dean's List, Electrical and Computer Engineering Chair Award
5. National Merit Scholar, National Computer Systems Merit Scholarship

Employment

1. Director of Product — edX
   Cambridge, MA — 08/2012 - Present
   Helping build the world's finest online learning platform.

2. Advisor — Boston Startup School
   Boston, MA — 03/2012 - Present
   Designed academic program and curriculum, recruited instructors, and taught in the inaugural class of Boston Startup School. As an advisor, responsible for setting strategic vision for future programs.

3. Creative Technologist — The Boston Globe / The New York Times
   Boston, MA — 10/2011 - 08/2012
   Performed research and development of next generation news production and consumption technologies at The Globe Lab.

4. Associate Professor — Franklin W. Olin College of Engineering
   Needham, MA — 08/2011 - Present
   Electrical and Computer Engineering faculty member.
5. Resident Scholar — Franklin W. Olin College of Engineering
   Needham, MA — 08/2005 - 09/2012
   Lived on campus as an academic resource for students at Olin College. Responsible for academic advising and intellectually stimulating activities in the residence halls.
6. Assistant Professor — Franklin W. Olin College of Engineering
   Needham, MA — 08/2004 - 8/2011
   Electrical and Computer Engineering faculty member.
7. Graduate Research Assistant — University of Washington
   Seattle, WA — 07/2000 - 07/2004
   Developed variable precision design tools for FPGAs.
8. Software Developer — Quicksilver Technologies, Inc.
   Seattle, WA — 07/2001 - 10/2001
   Assisted design and development of software development tools for Quicksilver's reconfigurable hardware.
9. Graduate Research Assistant — Northwestern University
   Evanston, IL — 09/1997 - 06/2000
   Developed FPGA implementations of NASA image processing applications.
10. Customer service operator — National Computer Systems
    Iowa City, IA — 06/1997 - 08/1997
    Phone operator for the Department of Education.
11. Undergraduate Research Assistant — Johns Hopkins University
    Baltimore, MD — 10/1994 - 06/1997
    Worked on a portable high performance linear algebra library. Investigated the IEEE-1394 draft standard in conjunction with the JHU Applied Physics Laboratory for a 1394-based spacecraft bus design.
12. Assistant System Administrator — Johns Hopkins University
    Baltimore, MD — 03/1995 - 06/1997
    Maintained a network of servers and workstations for the Center for Language and Speech Processing.
13. Webmaster — Johns Hopkins University
    Baltimore, MD — 05/1995 - 01/1997
    Designed and maintained a web site for the Maryland Space Grant Consortium.
14. Embedded Software Developer — Anton-Paar, GmbH
    Graz, Austria — 06/1996 - 07/1996
    Participated in a cooperative internship with the Technical University of Graz, Austria. Developed embedded software for use in concentration determination instruments.
15. Programmer and technician — Products Unlimited, Corp.
    Iowa City, IA — Summer 1989 - 1994
    Set up and maintained a network of PCs for a small engineering office. Developed computer-aided testing facilities using IEEE-488 instruments and hardware.

Consulting

1. MassChallenge — 07/2012 - present
   Mentor for various startups in the 2012 MassChallenge startup accelerator.

2. Roundware 12/2011 - present
   Integration of indoor localization technologies into an open source distributed, participatory, location-aware audio platform for art installations.
3. The MITRE Corporation 05/2011 - 09/2011
   Research investigating next-generation distributed design and collaboration tools and evaluation of mobile development frameworks.
4. Applications Technology, Inc., a division of SAIC 06/2009-present
   Research supporting machine language translation software and systems.
5. The MITRE Corporation 08/2007
   Researcher investigating 3D virtual worlds for collaboration.
6. NetFrameworks, Inc. & Applied Minds, Inc. 07/2001 - 09/2001
   Primary software developer for proprietary groupware system.
7. Hunter Benefits Consulting Group 09/2000
   Lead software developer.
8. HumaniTree.com, LLC 12/1998 - 03/1999
   Web developer and Java programmer.

Entrepreneurship

1. Spot, Co-Founder 05/2011 - present
   Co-Founder of a location-aware social photo sharing mobile/web application. Released in beta, December 2011 for the Android platform and at http://getspot.us
2. The Arugula, Co-Founder 05/2011 - present
   Co-Founder of a collaborative photo-taking and sharing mobile/web application. Released in beta, December 2011 for the Android platform and at http://thearugula.com

Teaching

1. Franklin W. Olin College of Engineering, Needham, MA

Semester	**Course**
Spring 2011	ENGR 2250: User-Oriented Collaborative Design ENGR 3499a: Mobile Application Development ENGR 3499b: Web Application Development ENGR 4190: SCOPE (Autodesk, Lexmark)
Fall 2010	ENGR 2210: Principles of Engineering ENGR 4190: SCOPE (Apple, Autodesk, Lexmark) Computer Security mass independent study Social Justice Reading Group
Spring 2010	ENGR 3499A: Mobile Application Development ENGR 3427: Mixed Analog-Digital VLSI II ENGR 4190: SCOPE (Linden Lab, Microsoft FUSE, Apple) MythTV Co-Curricular
Fall 2009	ENGR 3410: Computer Architecture ENGR 3426: Mixed Analog-Digital VLSI I ENGR 4190: SCOPE (Linden Lab, Microsoft FUSE)
Spring 2009	ENGR 3499A: Principles of Intelligent Systems Engineering (No course #): Mobile Application Development ENGR 3427: Mixed Analog-Digital VLSI II ENGR 4190: SCOPE (MITRE) Social Justice Reading Group
Fall 2008	ENGR 3410: Computer Architecture ENGR 3426: Mixed Analog-Digital VLSI I ENGR 4190: SCOPE (MITRE) Physical Security Systems Co-Curricular Social Justice Reading Group
Spring 2008	ENGR 3427: Mixed Analog-Digital VLSI II ENGR 3499A: Advanced Digital Systems ENGR 4190: SCOPE (MITRE, Nortel Networks) Social Justice Reading Group
Fall 2007	ENGR 3410: Computer Architecture ENGR 3426: Mixed Analog-Digital VLSI I ENGR 4190: SCOPE (MITRE, Nortel Networks) Social Justice Reading Group
Spring 2007	ENGR 3430: Digital VLSI Design ENGR 3499A: Embedded Systems Design ENGR 4190: SCOPE (IBM Research) Social Justice Reading Group
Fall 2006	ENGR 3410: Computer Architecture ENGR 4190: SCOPE (IBM Research) Social Justice Reading Group
Spring 2006	ENGR 3430: Digital VLSI Design ENGR 4190: SCOPE (John Deere, Motorola Labs) Olin Works Co-Curricular Social Justice Reading Group
Fall 2005	ENGR 3410: Computer Architecture ENGR 4190: SCOPE (John Deere, Motorola Labs) Olin Works Co-Curricular Social Justice Reading Group
Spring 2005	ENGR 3430: Digital VLSI Design

	Green Engineering Co-Curricular
Fall 2004	ENGR 3410: Computer Architecture

2. Yonsei University, Seoul, Korea

   Principles of Engineering, Yonsei University International Summer School, Summer 2008.

3. University of Washington, Seattle, WA

   EE 471: Computer Design and Organization. Instructor, Winter 2003.
   Overall class evaluation rating 4.13/5.0.
   (http://www.washington.edu/cec/e/EE471A4003.html).

4. Northwestern University, Evanston, IL

   B01: Introduction to Digital Logic Design. Instructor, Summer 1999.
   Overall class evaluation rating 5.56/6.0.
   C91: VLSI Systems Design. Teaching Assistant, Winter 1999.
   C92: VLSI Systems Design Projects. Teaching Assistant, Spring 1998.

Student Advising

Credit-bearing advising activities are grouped by academic year below. As of Spring 2010, I have advised 329 credit hours of research, independent study, Olin self study, and Passionate Pursuit activities.

Research Students

Academic Year	Project	Student(s)
2010-2011	Active Crowdsourcing in Support of Disaster Response	Kathryn Dramstad David Gaynor
	Cybersecurity and the hacker curriculum	approx. 18 students
	Tangible and large format interactable displays	Raphael Cherney Timothy Raymond Seungwhan Moon Jacob Getto
	Location and Ubiquitous Computing	Kelsey Breseman Colin Zwiebel Noah Tye Nathaniel Ting
	Data-Centric Operating Systems	Kevin Mehall Timothy C. Ryan Jonathan McKay Gabriel Villenavae
	Kinect for low-cost stereo vision	Kristopher Belland Jialiya Huang Travis L. St. Onge
	Digital displays for retail solutions	Zachary Brass Erika Tsutsumi Karan Kanodia Gabriel Villenave Hari Iyer
2009-2010	Cybersecurity and the hacker curriculum	Noah Tye
	Tangible and large format interactable displays	Jacob Getto
	WiFi localization	Andrew Barry Noah Tye Ilari Shafer
	Twitter social behaviors	Greg Marra

	GPU processing	Ilari Shafer
	FPGA Applications	Ben Fisher
		James Getzendanner
	Parking lot car detection	Andrew Barry
2008-2009	Low-cost, high-speed FPGA interfaces	John Morgan
		Christopher Nissman
	Stereo Vision on FPGA	Stephen Longfield
2007-2008	Low-cost, high-speed FPGA interfaces	John Morgan
	Stereo Vision on FPGA	Stephen Longfield
	Alzheimer's carepartner relief technologies	Alex Davis
2006-2007	Multi-touch user interfaces	Jonathan Tse
		Anthony Roldan
		Chris Stone
		Olek Lorenc
	Low-cost, high-speed FPGA interfaces	John Morgan
	Stereo Vision on FPGA	Stephen Longfield
		George Harris
	Alternative input devices	Evan Morikawa
		Benjamin Hayden
		Greg Marra
		Rebecca Scholl
		Jon Cass
2005-2006	Ubiquitous computing for seniors	Daniel Lindquist
	FPGA applications research	Zachary Brock
		Brian Shih
	FPGA acceleration of CFD	Eric Gallimore
		Nathaniel Smith
	FPGA-based neural networks	Eric VanWyk
2004-2005	Evolvable hardware on FPGAs	Joy Poisel
		Christopher Murphy

Independent Study, OSS, and Passionate Pursuits

Academic Year	Type	Project	Student
2010-2011	OSS	Digital System Design	Jeff Hwang
			Sean Shi
		Image Processing and Feature Extraction	Kevin Cheng
	IS	Game Design and Development	Keerthik Omanakuttan
			Andrew Pethan
			Colden Rouleau
			Jing Li
		Novel UX in Wearable Computing	Marco Morales
			Maia Bittner
		Digital Systems Design	Kevin Cheng
			Roydan Onge
2009-2010	OSS	Novice GUI toolkits	Ben Fisher
		Second Life programming	Logan Dethrow
		Video game engine programming	Avinash Uttamchandani
		Software development for CORe	Roland Crosby
		Multi-cultural cook-book	Nina Sawhney
2008-2009	OSS	Software systems	Chujiao Ma
		Game engine development	Andrew Price
			Erik Kennedy
			Roberto Santana
			Nik Wittenstein
		Turret automation	Zachary Kratzer
			Jeff Stanton
		Video game artificial intelligence	Kelly Butcher
	IS	iPhone development	Daniel Bathgate
			Zachary Brass
			Varun Mani
			Xavier Ziemba
		Exploded FPGA	Jennifer Cross
			James Switzer
2007-2008	OSS	FPGA Systems	Anthony Roldan
		Chess	Christopher Stone
		Home-brew dynamometer	Gabriel Greely
		Software using Django	Benjamin Hayden
		Video game design	Kent Munson
		Video game design	Andrew Kalcic
		Home-brew engine management	Eamon Doyle
		Jujitsu	Hans Borchardt
		Multi-touch software frameworks	Samuel Freilich
		3D Rendering	Jeffrey DeCew
	PP	Automobile competition	Joseph Funke
2006-2007	OSS	Traffic monitoring systems	Jeffrey Glickman
		Embedded art project	Nathaniel Smith
		Analog and Digital VLSI	Benjamin Hill
		Mobile user interface design	Sean McBride
		Visualization and clustering	Brian Shih
		FPGA hardware for blob detection	Cody Wheeland
	PP	Bartending	Kelcy Adamec
			Leslie Velez
2005-2006	OSS	Mobile phone marketplace	Michael Crayton
		Recommender systems	Sean Munson

		Software engineering	Drew Harry
		Advanced digital embedded design	Christopher Murphy
		Ubiquitous computing	Daniel Lindquist
		Machine vision	Sarah Leavitt
		Reconfigurable Computing	Michael Foss
		History of Film and Technology	Thomas Kochem
		History of Film and Technology	Kevin Tostado
	PP	Acrobatic plane construction	Adam Bry
	Other	Advised student startup company	Matthew Colyer
2004-2005	PP	Mandarin Chinese	Christopher Doyle
			Sutee Dee
		Korean	Katherine Kim
		Video Game Design	Matthew Colyer
			Dean Dieker
			Brendan Doms
			Sean McBride
			Brian Shih

Student Outcomes

Providing training outside the classroom as researchers and engineers is something I am very proud of. The following is a select list of research students and students with whom I worked closely, and their current post-Olin endeavors. This list is current as of Fall 2010.

Student	**Postgraduate work**
Andrew Barry	MIT PhD
Christopher Murphy	MIT PhD
Drew Harry	MIT PhD
Ilari Shafer	Carnegie Mellon PhD
Jennifer Cross	Carnegie Mellon PhD
Stephen Longfield	Cornell PhD
Jonathan Tse	Cornell PhD
Benjamin Hill	Cornell PhD
Sean Munson	University of Michigan PhD
Connor Skye Riley	University of California Berkeley MS
Benjamin Hayden	Google
Greg Marra	Google
Brian Shih	Google
Nathaniel Smith	Google
George Harris	Microsoft
Ben Fisher	Microsoft
Ellen Chisa	Microsoft
Daniel Lindquist	Yahoo, Kellogg School of Management MBA
Alex Davis	Yelp

Publications

Name Order Convention

For publications listed below, students are generally listed first, in descending order of contribution. Next, faculty members are listed in descending order of contribution. Any papers that do not follow this form are noted and the contribution clarified.

Key to author list

Bold Italic: Mark L. Chang
Bold: Student
No Marking: Non-student collaborator
Italics: Mark L. Chang's graduate adviser

Contribution
For any paper with collaborators in the author list, the approximate contribution of M. Chang is listed, broken down into four categories: Concept, Implementation/Data Gathering, Analysis, and Writing (including editing).

As Assistant Professor at Olin College

1. Orit Shaer, Marina Umaschi Bers, ***Mark L. Chang***, "Making the Invisible Tangible: Learning Biological Engineering in Kindergarten", *Proceedings of the 2nd Workshop on UI Technologies and Their Impact on Educational Pedagogy*, May 2011.
   Concept: 25%, Implementation/Data Gathering: 25%, Analysis: N/A, Writing: 20%
2. **Ilari Shafer**, ***Mark L. Chang***, "Movement Detection for Power-Efficient Smartphone WLAN Localization", *13th ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems*, October 2010.
   Concept: 50%, Implementation/Data Gathering: 0%, Analysis: 25%, Writing: 10%
3. **Andrew Barry**, **Noah Tye**, ***Mark L. Chang***, "Interactionless Calendar-Based Training for 802.11 Localization," *The 7th IEEE International Conference on Mobile Ad-hoc and Sensor Systems*, November 2010.
   Concept: 50%, Implementation/Data Gathering: 0%, Analysis: 25%, Writing: 25%
4. ***Mark L. Chang***, "Work in Progress: synthesizing design, engineering, and entrepreneurship through a course in mobile application development", *Frontiers in Education Conference*, 2010.
   Concept: 100%, Implementation/Data Gathering: 100%, Analysis: 100%, Writing: 100%
5. Jessica Townsend, ***Mark L. Chang*** "Work in Progress: Impact of early design instruction on capstone experiences", *Frontiers in Education Conference*, 2010.
   Concept: 50%, Implementation/Data Gathering: 50%, Analysis: 50%, Writing: 50%
6. **Andrew Barry**, **Benjamin Fisher**, ***Mark L. Chang***, "A Long-Duration Study of User-Trained 802.11 Localization," *Proceedings of the Second ACM International Workshop on Mobile Entity Localization and Tracking in GPS-less Environments*, September 2009. *Awarded best paper and best presentation.*
   Concept: 10%, Implementation/Data Gathering: 0%, Analysis: 15%, Writing: 30%
7. **Stephen Longfield, Jr.**, ***Mark L. Chang***, "A Parameterized Stereo Vision Core for FPGAs", **(Short Paper)** *IEEE Symposium on Field-Programmable Custom Computing Machines*, April 2009.
   Concept: 75%, Implementation/Data Gathering: 35%, Analysis: 75%, Writing: 100%
8. ***Mark L. Chang***, Allen Downey, "A Semi-Automatic Approach for Project Assignment in a Capstone Course", *Proceedings of the American Society for Engineering Education Annual Conference*, June, 2008.
   Concept: 50%, Implementation/Data Gathering: 50%, Analysis: 50%, Writing: 50%
   Author ordering is alphabetical
9. ***Mark L. Chang***, Jessica Townsend, "A Blank Slate: Creating a New Senior Engineering Capstone Experience", *Proceedings of the American Society for Engineering Education Annual Conference*, June, 2008.
   Concept: 50%, Implementation/Data Gathering: 50%, Analysis: 50%, Writing: 50%
   Author ordering is alphabetical
10. ***Mark L. Chang***, "Device Architecture", in *Reconfigurable Computing: The Theory and Practice of FPGA-Based Computation*; *Scott Hauck*, Andre DeHon, Editors; Morgan Kauf-

mann/Elsevier, 2008, pp. 3-27.
Concept: 100%, Implementation/Data Gathering: 100%, Analysis: 100%, Writing: 100%

11. ***Mark L. Chang***, *Scott Hauck*, "Précis: A Design-Time Precision Analysis Tool", *IEEE Design and Test of Computers*, Vol. 22, No. 4, pp. 349-361, July-August 2005.
Concept: 100%, Implementation/Data Gathering: 100%, Analysis: 100%, Writing: 100%

Prior to Employment at Olin College

1. ***Mark L. Chang***, *Variable Precision Analysis for FPGA Synthesis*, Ph.D. Dissertation, University of Washington, Department of Electrical Engineering, 2004.
2. ***Mark L. Chang***, *Scott Hauck*, "Automated Least-Significant Bit Datapath Optimization for FPGAs", *IEEE Symposium on Field-Programmable Custom Computing Machines*, April, 2004.
Concept: 100%, Implementation/Data Gathering: 100%, Analysis: 100%, Writing: 100%
3. ***Mark L. Chang***, *Scott Hauck*, "Variable Precision Analysis for FPGA Synthesis", *Earth Science Technology Conference*, June, 2003.
Concept: 100%, Implementation/Data Gathering: 100%, Analysis: 100%, Writing: 100%
4. ***Mark L. Chang***, *Scott Hauck*, "Précis: A Design-Time Precision Analysis Tool", *Earth Science Technology Conference*, June, 2002.
Concept: 100%, Implementation/Data Gathering: 100%, Analysis: 100%, Writing: 100%
5. ***Mark L. Chang***, *Scott Hauck*, "Précis: A Design-Time Precision Analysis Tool", *IEEE Symposium on Field-Programmable Custom Computing Machines*, pp. 229–238, 2002.
Concept: 100%, Implementation/Data Gathering: 100%, Analysis: 100%, Writing: 100%
6. ***Mark L. Chang***, *Adaptive Computing in NASA Multi-Spectral Image Processing*, M.S. thesis, Northwestern University, Dept. of ECE, December, 1999.
Concept: 100%, Implementation/Data Gathering: 100%, Analysis: 100%, Writing: 100%
7. ***Mark L. Chang***, *Scott Hauck*, "Adaptive Computing in NASA Multi-Spectral Image Processing", *Military and Aerospace Applications of Programmable Devices and Technologies International Conference*, 1999.
Concept: 100%, Implementation/Data Gathering: 100%, Analysis: 100%, Writing: 100%
8. P. Banerjee, A. Choudhary, *S. Hauck*, N. Shenoy, C. Bachmann, ***Mark L. Chang***, M. Haldar, P. Joisha, A. Jones, A. Kanhare, A. Nayak, S. Periyacheri, M. Walkden, "MATCH: A MATLAB Compiler for Adaptive Computing Systems", *Northwestern University Department of Electrical and Computer Engineering Technical Report CPDC-TR-9908-013*, 1999.
Concept: 0%, Implementation/Data Gathering: 10%, Analysis: 10%, Writing: 10%

Conference Posters

1. Mihir Ravel, ***Mark L. Chang***, Mark McDermott, Michael Morrow, Nikola Teslic, Mihajlo Katona, Jyotsna Bapat, "A Cross-Curriculum Open Design Platform Approach to Electronic and Computing Systems Education," *IEEE International Conference on Microelectronic Systems Education*, July 2009.
Concept: 0%, Implementation/Data Gathering: 15%, Analysis: 15%, Writing: 15%
2. **C. Murphy, D. Lindquist, A.M. Rynning, T. Cecil, S. Leavitt**, ***M.L. Chang***, "Low-Cost Stereo Vision on an FPGA", IEEE Symposium on Field-Programmable Custom Computing Machines, 2007.
Concept: 50%, Implementation/Data Gathering: 0%, Analysis: 0%, Writing: 100%
3. ***Mark L. Chang***, *Scott Hauck*, "Least-Significant Bit Optimization Techniques for FPGAs", *ACM/SIGDA International Symposium on Field-Programmable Gate Arrays*, February, 2004.
Concept: 100%, Implementation/Data Gathering: 100%, Analysis: 100%, Writing: 100%

Panels and Workshops

1. ***Mark L. Chang***, Jonathan Hulbert, Martha Minow, Jonathan Zittrain, "The 2013 Hack IP Challenge" *HarvardX/edX*, February 2013.
2. Hal Abelson, ***Mark L. Chang***, Cyprien Lomas, David Wolber, "Google App Inventor for Android: Building mobile applications as a first computing experience" *Frontiers in Education Conference*, 2010.
3. Hal Abelson, ***Mark L. Chang***, Eni Mustafaraj, Franklyn Turbak, "Mobile Phone Apps in CS0 Using App Inventor for Android", *15th Annual Conference of the Northeast region of the Consortium for Computing Sciences in Colleges*, 2010.
4. Ellen Spertus, ***Mark L. Chang***, Paul Gestwicki, David Wolber, "Novel Approaches to CS0 with App Inventor for Android", *The 41st ACM Technical Symposium on Computer Science Education (SIGCSE)*, 2010.

Invited Talks

1. "Two Sides to Innovation in the Classroom", Seoul National University, Center for Teaching and Learning, February 2013.
2. "Innovation in Engineering Education: Olin College", Seoul National University, College of Engineering, February 2013.
3. "Disruption: Online Education", Seoul National University, College of Engineering, February 2013.
4. "Play With Others", *World Lab Summer Institute*, University of Washington Department of Computer Science and Engineering, July 2012.
5. "Play With Others", *World Lab Summer Institute*, University of Washington Department of Computer Science and Engineering, July 2012.
6. Invited speaker, Scientia Conference on Research and Innovation in Undergraduate Science and Engineering Education, Rice University, February, 2011
7. "Master of motivation: engaging students with smartphones and Google Android", *Boston-area Advanced Technological Education Connections IT Futures Forum*, May 2010.
8. "Spinning the World Wide Web: How the Internet Really Works", Needham Exchange Club presentation, October 2008.
9. "Olin College: Accrediting an Innovative Engineering Curriculum", Yonsei University Engineering Seminar, August 2008.
10. "Olin College: Rethinking Engineering Education", Microsoft Research, June 2008
11. "A Beginner's Guide to Bad Engineering Presentations", University of Hartford, November 2007.
12. "Spinning the World Wide Web: How the Internet Really Works", Olin College Lecture Series, Needham Adult Education Program, October 2007.

Grants

Awarded or under review

1. MIT Lincoln Laboratory, "Active Crowdsourcing in Support of Disaster Response,", $50,000.
2. MITRE Grant with Ozgur Eris (Olin) and Doug Phair (MITRE) for distributed design technologies and assessment methodologies, and evaluation of mobile development frameworks.
3. Olin Innovation Grant funding for "Network Hacking and Cyber Security" course development. Summer 2010.

4. Wellesley Tanner Conference grant for work on extending the reach of the 10th anniversary Wellesley Tanner conference. Funding to support equipment and Olin summer student Jacob Getto. Summer 2010.

Not awarded

1. Co-PI on NSF TUES proposal with Gunar Schirner (Northeastern University), David Kaeli (Northeastern University), Bradley Minch (Olin), and Mihir Ravel (Olin), *Collaborative Research, TUES-Type 1: Fostering Student Learning Continuity Employing a Personal Active Learning Platform*.
2. NSF CISE-IIS: Making the invisible tangible: Developing reality-based interfaces for learning biological engineering in kindergarten, Co-PI with Orit Shaer (Wellesley) and Marina Bers (Tufts University).
3. NSF EHR-ENG: Designing for Experience: Changing Engineering Education to Foster Innovators.
4. NSF REU Site: Engineering Education Research: Understanding and Improving Student Experiences, Senior personnel with co-PIs Debbie Chachra (Olin) and Lynn Stein (Olin).
5. Nokia Research Global University Cooperation Donation, with Jonathan Ledlie (Nokia Research).
6. Co-PI on NSF TUES proposal with Gunar Schirner (Northeastern University), David Kaeli (Northeastern University), Mark Somerville (Olin), and Mihir Ravel (Olin), *Collaborative Research, TUES-Type 1: Fostering Student Learning Continuity Employing a Personal Active Learning Platform*.
7. Alzheimer's Foundation Early Technologies for Alzheimer's Care proposal with Aaron Boxer (Olin) and Stephen Schiffman (Olin), *Ubiquitous Computing for Carepartner Relief Through Patient Independence*.
8. DARPA proposal for BAA 07-46 with David Barrett (Olin) and Dr. Nahid Sidki (SAIC), *Portable Autonomous Communications Robotic Assistant: PACRAT*.
9. HP Technology for Teaching grant

Donations and Gifts

1. Kevin and Marlene Getzendanner (P'10) funded a 5-year Olin Tuition Scholarship named in honor of Mark Chang as a result of Marks impact on the education of their son, James Getzendanner ('10)
2. Altera Corp., donation of FPGA hardware and software (2006-2008)
3. AndroidCentral.com, financial support for Mobile Application Development Course: $3,000 (2009)
4. Applications Technology, Inc., financial support for Mobile Application Development Course: $2,000 (2009)
5. CommonsWare, textbook for all students in Mobile Application Development Course (2009, 2010, 2011)
6. Google, financial support for development of AppInventor curriculum: $10,000 (2010)
7. Google, hardware support for Mobile Application Development course (2011).
8. Hewlett-Packard, Inc., donation of workstations for VLSI teaching laboratory: $23,824 (2005)
9. Microsoft, hardware and software for Mobile Application Development Course (2009)
10. Nokia Research Center, donation of handheld computing hardware (2008)
11. Palm, Inc., donation of textbook for all students in Mobile Application Development Course (2009)

12. Xilinx, Inc., donation of FPGA hardware and software: $15,635 (2004), $11,170 (per year, 2005-present)

Professional Activities

Conference Steering Committee Member

1. Publicity Chair, IEEE Conference on Field-Programmable Custom Computing Machines, 2010
2. General co-chair, IEEE Workshop on Mobile Entity Localization and Tracking. Co-located with *The 7th IEEE International Conference on Mobile Ad-hoc and Sensor Systems*, November 2010

Program Committee Member

1. IEEE Microelectronic Systems Education Conference (2005, 2007, 2009, 2011)
2. IEEE International Conference on Field-Programmable Technology (2007, 2008, 2009, 2010)
3. IEEE International Conference on Field Programmable Logic and Applications (2005, 2006, 2007, 2008, 2009, 2010)
4. International Symposium on Applied Reconfigurable Computing (2008, 2009, 2010, 2011)
5. IEEE Conference on Field-Programmable Custom Computing Machines (2010)

Reviewer

1. ACM International Conference on Interactive Tabletops and Surfaces (2011)
2. ACM Symposium on User Interface Software and Technology (2010)
3. NSF ECCS Division BRIGE Program
4. IEE Proceedings of Computers & Digital Techniques
5. IEEE Transactions on Computers
6. IEEE Transactions on Education
7. IEEE Transactions on VLSI Systems
8. IEEE Transactions on Computer-Aided Design of Integrated Circuits & Systems
9. IEEE Transactions on Instrumentation & Measurement
10. ACM Transactions on Design Automation of Electronic Systems
11. IEEE International Symposium on Circuits and Systems
12. EURASIP Journal of Embedded Systems
13. ACM Transactions on Reconfigurable Technology and Systems
14. Journal of Real-Time Image Processing
15. International Journal of Reconfigurable Computing

Committees and Department Service

1. Ad hoc committee on curricular innovation, Fall 2009
2. SCOPE Director search, Fall 2009
3. Committee on Diversity and the Academic Experience, 2005 - 2007
4. Electrical and Computer Engineering Faculty Search committee, 2004, 2005, 2007
5. Electrical and Computer Engineering Program Group, 2004 - present
6. Entrepreneurship Strategic Vision committee, Fall 2012
7. Faculty / IT committee, 2004 - 2007
8. Honor Board faculty representative, 2004 - 2009

9. Intercollegiate Relations Committee, 2007 - present (chair 2007 - present)
10. Task force on the 2nd and 3rd year curriculum, 2007 - 2008 (chair)
11. Wellesley Olin Working Group Committee, 2004 - 2007
12. Olin Certificate in Engineering Studies coordinator, 2007 - present