Maggie K. **Delano**

Medical Device Designer · PhD Candidate

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Education

Massachusetts Institute of Technology — *Cambridge, MA, USA*

PhD in Electrical Engineering and Computer Science with Minor in Women's and Gender Studies — *Sept. 2012 - June 2017 (Expected)*

Massachusetts Institute of Technology / Harvard Medical School — *Cambridge, MA, USA*

Graduate Education in Medical Sciences (GEMS) Certificate Program — *Spring 2013 - Fall 2015*

Massachusetts Institute of Technology — *Cambridge, MA, USA*

Master's of Engineering in Electrical Engineering and Computer Science — *Aug. 2010 - June 2012*

Massachusetts Institute of Technology — *Cambridge, MA, USA*

Bachelor of Science in Electrical Science and Engineering — *Sept. 2006 - June 2010*

Experience

Sodini Medical Electronics Research Group — *Cambridge, MA, USA*

PhD Thesis Project — *Sept. 2012 - June 2017 (Expected)*

- Designing a wearable bioimpedance system to help reduce heart failure re-admission rates.
- Analog front end circuit design for bioimpedance measurements (1 kHz - 1 MHz).
- Firmware development (MSP430).
- Electrode-skin interface characterization.
- Clinical testing in healthy participants (MIT) and hemodialysis patients (MGH).

Fitbit — *San Francisco, CA, USA*

Research Intern — *June 2012 - August 2012*

- Lead Prototype Electrical Engineer on the Fitbit Surge.
- Designed second generation PCB, including board level design, layout, and firmware (MSP430).
- Characterized system and made preliminary measurements in humans.

Sodini Medical Electronics Research Group — *Cambridge, MA, USA*

MEng Thesis Project — *Jan. 2010 - June 2012*

- Designed a wearable cardiac monitor based around an MSP430 microcontroller.
- Records electrocardiogram and 3-axis acceleration data continuously for up to one week.
- Validated cardiac monitor in the Clinical Research Center at MIT.
- Performed as well or better than a commercial monitor, especially during running.

Boston Scientific (Cardiac Rhythm Management) — *St. Paul, MN, USA*

Research Intern — *June 2009 - August 2009*

- Developed and tested theories to characterize pacemaker lead heating in MRI.
- Wrote final report that became the basis for an FDA approval application.

Publications and Talks

Papers

- **Delano M**, and Sodini C, "A Long Term Wearable Electrocardiogram Measurement System," in *Body Sensor Networks Conference*, 2013; 1-6.
- Winokur E, **Delano M**, and Sodini C, "A Wearable Cardiac Monitor for Long-term Data Acquisition and Analysis," *Transactions on Biomedical Engineering*, 2013 Jan; 60(1):189-92.
- Egner T, **Delano M**, and Hirsch J, "Separate conflict-specific cognitive control mechanisms in the human brain," *Neuroimage* 2007; 35(2), 940-948.

Conference Presentations

- **Delano M**, "Building Myself Back Up." Show & Tell Talk, Quantified Self Global Conference, San Francisco, CA, June 18, 2015.
- **Delano M**, "ECG and Activity Tracking: What Can We Learn?" Show & Tell Talk, Quantified Self Global Conference, San Francisco, CA, October 10, 2013.

Invited Talks

- **Delano M**, "A Portable Bioimpedance Measurement System for Congestive Heart Failure (CHF) Management." Rising Stars in Biomedical Workshop, November 9, 2016.
- **Delano M**, "Productivity and Quantified Self." Guest Lecture, STS.091 (Critical Issues in STS: Data as Self), October 21, 2013.

Posters

- **Delano M** and Sodini C, "A Portable Bioimpedance Measurement System for Congestive Heart Failure (CHF) Management." Poster, IEEE Symposium on Medical Electronic Devices and Systems (ISMEDS), Cambridge, MA, May 8, 2014. Also presented at ISMEDS 2015 and MTL Annual Research Conference (MARC) 2015.
- **Delano M** and Sodini C, "A Long-Term Wearable Electrocardiogram Measurement System." Poster, Medical Electronic Device Realization Center (MEDRC) Workshop, Cambridge, MA, May 2, 2013. Also presented at MARC 2014.

Teaching

Design of Medical Devices (MIT 2.75/6.025) *Cambridge, MA, USA*

Electrical Engineering Instructor *Sept. 2012 - Present*

- Four-time Electrical Engineering Instructor.
- Weekly one-on-one mentoring of 3-5 person student teams, each prototyping medical devices.
- Develop curriculum and syllabus.
- Support student publications.
- Designed, wrote, and run yearly ECG lab.
- Designed, wrote, and graded problem sets.

Preparation for Undergraduate Thesis (MIT 6.UAT) *Cambridge, MA, USA*

Teaching Assistant *Fall 2010*

- TA for two recitation sections working closely with faculty instructors.
- Ran recitations day-to-day.
- Provided individualized feedback to help students improve presentation skills.
- Filmed in class presentations.
- Graded assignments.

Microcontroller Laboratory (MIT 6.115) *Cambridge, MA, USA*

Laboratory Assistant *Spring 2010*

- Helped students during staffed lab hours.
- Ran lab checkoffs.
- Graded laboratory notebooks.

Community Involvement

MIT Senior House *Cambridge, MA, USA*

Graduate Residence Tutor (GRT) *Aug. 2014 - Present*

- Work as part of team of GRTs, faculty, and staff.
- Provide individualized and community support and resources for undergraduate students.
- Served on Housemaster Search Committee.
- Served on GRT Feedback Committee.
- Participated in GRT Role Meetings with Chancellor Barnhart.

Quantified Self (QS) *Cambridge, MA, USA*

Meetup Organizer *Jan. 2013 - Present*

- Started a Boston based women's meetup group.
- Select show & tell speakers for Quantified Self Boston meetups.
- Wrote Quantified Self's first Code of Conduct.
- Served on Quantified Self's diversity committee for the 2015 Global Conference.

MIT Undergraduate Association (UA) *Cambridge, MA, USA*

Vice President *Spring 2009 - Spring 2010*

- Elected in four ticket election with 50% of undergraduate vote (919/1806).
- Represented MIT undergraduates on issues ranging from student life to academic policy.
- Oversaw over 10 UA Committees.
- Ran UA's Institute Committee Nomination Process (Nomcomm).

Honors & Awards

2016	**Top Pitch in Session,** Microsystems Technology Lab Annual Research Conference	*Bretton Woods, NH*
2014	**Top Pitch in Session,** Microsystems Technology Lab Annual Research Conference	*Bretton Woods, NH*
2010	**Analog Minority Scholarship,** Texas Instruments	*Dallas, TX*
2006	**Second Place in Category,** Intel International Science and Engineering Fair (ISEF)	*Indianapolis, IN*
2006	**Top 6,** National Junior Sciences and Humanities Symposium (JSHS)	*Albuquerque, NM*
2005	**Semi-Finalist,** Intel Science Talent Search (STS)	*Washington, DC*

Selected Writing and Press

Writing

- **Delano M**, How Bad Institutional Support Cost Douglas Prasher a Nobel Prize. Medium, October 11 2016.
- **Delano M**, Using Inclusive Language in Research Articles. Medium, November 16 2015.
- **Delano M**, I tried tracking my period and it was even worse than I could have imagined. Medium, February 23, 2015.
- **Delano M**, "A Code of Conduct." Quantified Self Blog, June 27, 2014.
- **Delano M**, My Roommate Has An Iron Uterus. Period. The Zine., 2013.

Press

- Abrams A., “These real-life cyborgs hack their bodies with chips, magnets and other tech.” The Washington Post, June, 2016.
- “Ahead of What’s Possible, Health Innovations Stem from Great Partnerships.” MEDRC Research Feature, Analog.com, June, 2015.
- Eveleth R., “How Self-Tracking Apps Exclude Women.” The Atlantic, December 15, 2014.
- Ramirez E., “Inclusion and Diversity at QS15.” Quantified Self Blog, October 14, 2014.
- Dooe M. “Apps for Better Sleep, Apps to Keep you awake.” WGBH Innovation Hub, April 11, 2014.
- Greenhall A, “Quantified Self at the Frontier of Feminism.” Model View Culture Quarterly No. 1, 2014.

Skills

Hardware	Basic and Advanced Electronics Lab Skills (Soldering, Oscilloscopes, Impedance Analyzers, etc.)
PCBs	Altium and Eagle, for schematic design and layout
Software	Embedded C, MATLAB, Version Control (Git, SVN), LaTeX, some: Objective C (iOS), Python, Javascript
OS	Windows, Mac, Linux
People	Certified Mediator (completed 40 hr training), QPR trained