Steven Keating - Résumé 2016

Education

- **Massachusetts Institute of Technology - Mechanical Engineering (Ph.D)** *August 2016*
  - Advisors: Dr. Neri Oxman, Dr. David Wallace, and Dr. Woodie Flowers. (GPA: 4.9/5.0). Holtzman Fellowship for Digital Expression. NSERC Postgraduate Scholarship.

- **Queen's University - Mechanical Engineering (Materials Option) (B.Sc)** *April 2010*
  - Completed first year engineering in top 1% out of 800+ peers and graduated with the highest academic standing for all students in the Materials Engineering Option.

- **Queen's University - Film and Media (B.A)** *April 2010*
  - Dean's List for all previous years and graduated with honours, dual degree fast track.

- **Sir Winston Churchill (Calgary, AB) - High School Diploma** *June 2006*
  - Graduated with a 98% average and voted as Valedictorian by peers from a graduating class of 600+.

Experience

Research Assistant, Mediated Matter Group, MIT Media Lab *2010 to Current*
- Developed lab projects and environment as the first student under Dr. Neri Oxman.
- Produced novel research on fabrication design, synthetic biological systems, and digital construction.
- Invited to present at top conferences including *Robotic Fabrication in Architecture, Art, and Design,* and *Bits and Bio* (CBA MIT), and produced work covered by Wired, Fast Company, CNN, and further press.

Patient Advocate for Open Medical Data Access *2014 to Current*
- Explored personal genomic, MRI, and pathology patient data to enable treatment decisions, novel 3D biomedical printing research, and enhanced community support.
- Presented invited talks at the MIT Koch Institute, Harvard Medical School, cancer fundraisers, and the White House. Participated as an invited member of the federal Precision Medicine Task Force.

Product Design, Apple *Summer 2013*
- Worked on hardware design as a PhD intern on new confidential products.

Lab Instructor for the senior course *Product Design Processes* (MIT 2.009) *Fall 2013*
- Led teaching of 16 students (one of 8 groups) in 2.009, MIT's senior Mechanical Engineering capstone class focused on design through creative brainstorming, testing, and prototyping of novel products.
- Received highest rating from student evaluators (7.0/7.0) amongst the 20 instructors in class.

Course Instructor for *Toy Product Design* (MIT 2.00b) *Spring 2012*
- Taught a MIT mechanical engineering class which introduced 80+ undergraduates to design processes, prototyping techniques, and mechanical analysis through projects focused around toys

Course Teaching Assistant for Design Classes at MIT (2.009, MAS.S64, MAS.500) *Fall 2010 to Current*
- Actively involved as a teaching assistant for various design classes which serve 200+ students at MIT; classes range from mechanical engineering, to fabrication design, to computational analysis.

Research Assistant, Queen's Applied Sustainability Group, Kingston ON *Summer 2009*
- Led original material research on ternary semiconductors for use in photovoltaic applications through applying material research technologies such as FESEM, AFM, XRD, SIMS, and numerical analysis packages MATLAB and Origin.

Film Festival Director, Queen's University, Kingston, ON *2008 to 2009*
- Directed and organized Queen's University's 7th annual Focus Film Festival which involved 100+ participants, a community screening attended by audience of 500+, and an awards night.

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Select Recent Publications

3D Printed Multimaterial Microfluidic Valve.
S. Keating, M.I. Gariboldi, W. G. Patrick, S. Sharma, D. S. Kong, and N. Oxman. *Plos ONE* (2016). 11(8).

Grown, Printed, and Biologically Augmented: An Additively Manufactured Microfluidic Wearable, Functionally Templated for Synthetic Microbes.
C. Bader, W. G. Patrick, D. Kolb, S. G. Hays, S. Keating, S. Sharma, D. Dikovsky, B. Belocon, J. C. Weaver, P. A. Silver, and N. Oxman. *3D Printing and Additive Manufacturing* (2016). 3(2).

Beyond 3D Printing: The New Dimensions of Additive Fabrication
S. Keating. Follet, Jonathan (Ed.) *Designing for Emerging Technologies* (2014). 379-405. O'Reilly Media.

A Compound Arm Approach to Digital Construction.
S. Keating, N.A. Spielberg, J. Klein, and N. Oxman. *Robotic Fabrication in Architecture, Art and Design.* (2014). 99-110

Compound Fabrication: A Multi-Functional Robotic Platform for Digital Design and Fabrication.
S. Keating and N. Oxman, *Robotics and Computer Integrated Manufacturing*. (2013). 29 (439-448).

Additional publications available online at http://matter.media.mit.edu/people/bio/steven-keating

Select Achievements

- Selected for the Forbes 30 Under 30 list in Healthcare. (2016)
- TEDx talk on patient data access (video online at www.stevenkeating.info). (2015)
- Emerging Voices Award to Mediated Matter, The Architectural League of NY. (2015)
- Hugh Hampton Young Fellowship.
- NSERC (National Science and Engineering Research Council) Postgraduate Scholarship. (2013)
- Steven R. Holtzman Fellowship for Digital Expression for research in digital fabrication and innovation. (2011)
- Glen Milbourne Scholarship from Queen's University for strong academic and interpersonal skills. (2010)
- Willard G. Henry Memorial Scholarship based on scholarship, character, and contribution to the well-being of the student body and an undergraduate NSERC research award for InGaN photovoltaic applications. (2009)
- Academic scholarships including the Principal's Scholarship, the Anne Gertrude O-Farrell Award in Engineering, and the James H. Rattray Scholarship for Applied Science. (2008)
- Short film "Heliocentric" was selected for the Cinema City International Film Festival in Los Angeles. (2007)
- Nortel Networks Entrance Scholarship, the Alexander Rutherford Scholarship, the Kevin Pelehos Award for athletics, and the Principal's Scholarship. (2006)

Personal Interests

My personal interests are diverse and fuelled by a innate desire to learn and explore the world! Areas of interest include science, the environment, art, medicine, and music. Ever since I was young, I have been a basement tinkerer in my spare time and I enjoy experimenting with electronics, programming, and chemistry. From Tesla coils to weather balloon cameras to radio trackers, curiosity fuels my life. Aside from science, I like to lead an active lifestyle and I enjoy playing racquet sports. I have represented Canada internationally in the sport of badminton and continue to play recreationally within MIT clubs. I spend time volunteering with the Boston Open organizing committee and with a medical design team at Brigham Hospital. As well, I enjoy volleyball, hiking, and photography. Calgary is my hometown and I am easily invigorated by creativity, design, and maple syrup.