Chris Rogers
Tufts University
Department of Mechanical Engineering
200 College Ave, Medford, MA 02155

www.tufts.edu/~crogers
617-627-2882 (phone)
crogers@tufts.edu

Professional Preparation

Stanford University	Mechanical Engineering (w/distinction)	BSME, 1984
Stanford University	Mechanical Engineering	MS, 1985
Stanford University	Mechanical Engineering (w/John Eaton)	PhD, 1989

Professional Appointments

2015 -	Chair, Mechanical Engineering
2011 - 2015	Co-director, Center for Engineering Education and Outreach
2010 -	Board of Directors - Concord Consortium
2006 - 2007	Visiting Professor, ETH, Zürich, Switzerland
2004 -	Overseer, Boston Museum of Science
2003 - 2011	Director, Center for Engineering Education and Outreach
2003 - 2010	Editor, eFluids.com
2002 - 2003	Kenan Professor of Distinguished Teaching, Princeton, NJ
2002	Fulbright Senior Scholar, Lincoln University, ChCh, NZ
2001-	Professor, Tufts University, Medford, MA
1996 - 2001	Associate Professor, Tufts University, Medford, MA
1996 - 1997	Visiting Scientist, Harvard University, Cambridge, MA
1990	Visiting Scientist, McDonnell Douglas Co., St. Louis, MO
1989 - 1996	Assistant Professor, Tufts University, Medford, MA

Products

- Wendell, K., Kendall, A., Portsmore, M., Wright, C., Jarvin, L., & Rogers, C. (2014). Embedding elementary school science instruction in engineering design problem solving. In S. Purzer, J. Strobel, & M. Cardella (Eds.), Engineering in pre-college settings: Synthesizing research, policy, and practices. Purdue University Press.
- Danahy, E., E. Wang, J. Brockman, A. Carberry, B. Shapiro, C.B. Rogers, (2014) LEGO-based Robotics in Higher Education: 15 Years of Student Creativity, Int J Adv Robot Syst, ISSN: 1729-8806
- Wendell, K. and Rogers, C. (2013), Engineering Design-Based Science, Science Content Performance, and Science Attitudes in Elementary School. Journal of Engineering Education, 102: 513–540. doi: 10.1002/jee.20026
- Rogers, C. B. (2012), "Engineering in Kindergarten: How Schools are Changing," Journal of STEM Education: Innovations and Research. Volume 13, Issue 4.
- Foster, Kristen Wendell, (2010) A Review of the NAE Report, Engineering in K-12 Education, Journal of Engineering Education.
- Brophy, S., S. Klein, M. Portsmore, C.B. Rogers (2009), Advancing Engineering Education in P-12 Classrooms, Journal of Engineering Education, Vol. 97, no 2, 1-19.
- Church, W., Gravel, B.E., Rogers, C. (2007). Teaching Parabolic Motion with Stop Action Movies. International Journal of Engineering Education Special Issue, Vol 23., (5), 861-867.
- Vlahakis, J., Manno, V. P., Rogers, C. B., White, R. "Stick-Slip Transitions in Chemical Mechanical Planarization" J. Electrochem. Soc., Volume 156, Issue 10, (2009)
- Cejka, E., Rogers, C., & Portsmore, M. (2006). Kindergarten Robotics: Using Robotics to Motivate Math, Science and Engineering Literacy in Elementary School International Journal of Engineering Education, 22(4), 711-722.
- ROBOLAB software - versions 1 thru 2.9.4 in 99, 00, 01, 02, 04, 05, 06, 07, 08, 09.
- LabVIEW Education Edition - 2009, LabVIEW for LEGO Mindstorms 2010
- Advisor for all LEGO Mindstorm releases (RCX, NXT, EV3, WeDo, and WeDo2)

Synergistic Activities

My current research work falls into four areas: (1) manufacture of musical instruments (Steinway and Sons and Conn-Selmer), (2) engineering education (LEGO Education, Kodosky Foundation and NSF), (3) educational robotics (LEGO, NSF, SparkFun, USAID, Texas Instruments, National Instruments), and (4) education outreach (LEGO, Raytheon, LLL Foundation, Symantec, Foster-Miller). The first is mainly aimed at optimizing existing manufacturing processes and the other three look at ways of understanding how students think and then using that knowledge to develop new educational technologies and work with teachers and schools in the use of these technologies.

As a founding member of the Tufts Center for Engineering Education and Outreach, my work falls into 4 parts: (1) education research, (2) tool development, (3) outreach, and (4) teacher professional development. Through the Center, we work with thousands of teachers every year as part of our LEGO engineering conference circuit and our LEGOEngineering.com website. We collaborate with a dozen universities and industries in developing volunteer programs to assist teachers in bringing engineering into the classroom. We also develop tools (LEGO-based and around movie making) to increase opportunities for kids. Finally, we combine this work with education research to inform development and outreach strategies.

Collaborators and Other Affiliations

Tufts University: Marina Bers, Barbara Brizuela, David Hammer, Chris Swan, Robert White, Merredith Portsmore, Ethan Danahy, David Kaplan, Barry Trimmer, Ben Shapiro, Brian Gravel, Kristen Wendell
MIT: Michel Resnick, Gareth McKinley
Purdue University: William Oakes, Matt Ohland, Morgan Hynes
Boston College: Mike Barnett
Industry: LEGO Corp, National Instruments, Sparkfun, Texas Instruments, Steinway, Conn-Selmer, Intel Corp, Cabot Corp, Symantec, Klutz Books, Google

(i) Graduate Advisors and Postdoctoral Sponsors

Graduate Advisors: John Eaton, Bill Reynolds, William Kayes, Peter Bradshaw

(ii) Thesis Advisor and Postgraduate Scholar Sponsor

Thesis Advisor: John Eaton

(iii) Graduate Students Mentored

80 Students with Masters Theses, 17 PhDs (in engineering and education), 5 Post-Docs

Other Accomplishments

I have received a few awards: Henry and Madeleine Fischer Teaching Award, 2014, Harry C. Bigglestone award, 2010, Tufts ASME Student Chapter "Best Professor Award", 2008, Best Section Paper, International Conference on Computing (CCCT), 2004, National Science Foundation Director's Distinguished Teaching Scholar Award, 2003, Kenan Professorship of Distinguished Teaching, Princeton, 2002-2003, LabVIEW Programming Prize, NIWeek, 2002, Fulbright Senior Scholar, New Zealand, 2002, Best Paper in Computers in Education, ASEE Conference, 2000, Robert Knapp Award for Best Paper, ASME Conference, 2000, Prizes for ROBOLAB: BETT Best Software Prize (Britain), World Didact Gold Medal (Switzerland), MacWorld (USA) and DIGITA (Germany) prizes, 2000 - 2002, Carnegie Foundation Professor of the Year for Massachusetts, 1998, Outstanding Educational Software Prize, National Instruments, 1998, Teetor Award for Excellence in Education, 1994, Best Section Paper Award, ASEE Conference, 1998, Section Outstanding Teaching Award, ASEE New England Section, 1996, AIAA New England Council Achievement Award (2 years), and am a member of Phi Beta Kappa and Tau Beta Pi honor societies. I am also an ASME and ISDDE fellow.

More importantly, I have flown flying in the NASA KC-135 for almost 1000 parabolas without getting sick.