

DEREK REAMON

Co-Director, Integrated Teaching and Learning Program and Laboratory
Senior Instructor, Mechanical Engineering
College of Engineering and Applied Science
University of Colorado at Boulder

Professional Preparation

Stanford University	Mechanical Engineering	BS	1992
Stanford University	Mechatronic Systems	MS	1995
Stanford University	Educational Interface Design	PhD	1999

Appointments

- 2007 – present **Co-Director**, *Integrated Teaching and Learning Program, University of Colorado at Boulder* Co-leads the hands-on learning program by promoting faculty linkages, and encouraging the development and implementation of multi-departmental curricular initiatives. Oversees ~17 sections per year of the retention-building, undergraduate *First-Year Engineering Projects* course, including its semester-end Engineering Design Expo.
- 2007 – present **Senior Instructor**, *Mechanical Engineering, University of Colorado at Boulder* Regularly teaches the following courses: *First-Year Engineering Projects*, *Component Design*, *Dynamics*, *Systems Dynamics*, and *Mechatronics*. Research interests include robotics and engineering education.
- 2006 – 2007 **Undergraduate Chair**, *Mechanical Engineering, University of Colorado at Boulder*
and 2010 – present
- 2002 – 2006 **Instructor**, *Mechanical Engineering, University of Colorado at Boulder*
- 2000 – 2002 **Adjunct Assistant Professor**, *Integrated Teaching and Learning Program, University of Colorado at Boulder*
- 1999 – 2000 **Lead Engineer**, *Innerstep Design Services, San Jose, CA*
- 1993 – 1998 **Teaching Assistant and Fellow**, *Stanford University, Stanford, CA*
- 1991 – 1993 **Edison Engineer**, *General Electric Corporation, San Jose, CA*

Selected Engineering Education Publications

- Reamon, D., Kotys-Schwartz, D., Carlson, L. (2006) “Systematic Integration of Concept Inventories in Mechanical Engineering.” *ASEE Proceedings* - 2006-1262.
- Reamon, D., Kotys-Schwartz, D., Carlson, L. (2006) “Evaluation of the Impact of Interactivity on Student Performance,” *Proceedings*, 2006 American Society for Engineering Education, 1264.
- Reamon, D. Sullivan, J.F., and Louie, B. (2003), “Girls Embrace Technology: A Summer Internship for High School Girls,” *Proceedings*, Frontiers in Education, Boulder, CO, IEEE.
- Reamon, D. (1999), “Educational Interactive Multimedia Software: The Impact of Interactivity on Learning,” *Mechanical Engineering*, Stanford, CA, Stanford University Press.
- Reamon, D. and Sheppard, S.D. (1998), “Motor Workshop: The Role of Interactivity in Promoting Learning,” *Proceedings*, Frontiers in Education, Tempe, AZ, IEEE.
- Reamon, D., Sheppard, S.D., Friedlander, L., Kerns, C., Leifer, L., Marincovich, M., Toye, G. (1998), “Assessment of Technology-Assisted Learning in Higher Education: It Requires New Thinking by Universities and Colleges,” *Proceedings*, Frontiers in Education, Tempe, AZ, IEEE.
- Reamon, D. and Sheppard, S.D. (1997), “The Role of Simulation Software in an Ideal Learning Environment,” *ASME Design Engineering Technical Conferences*, Sacramento, CA.

Recent Collaborators: Carlson, L., Kotys-Schwartz, D., Zarske, M.

Curriculum Development and Courses Taught

Taught *First-Year Engineering Projects* course, 2000-present — an introductory course that emphasizes teamwork, design process and fabrication techniques. Student design projects include assistive technology devices, electro-mechanical systems, interactive educational exhibits and educational toys.

Redesigned curriculum for *System Dynamics* — an introductory control systems course. Participated in “Teaching Science that Matters” course development initiative as part of Leadership Advancement for Service and Promotion (LEAP) program. Created hands-on labs, workshops and added a control system design project.

Redesigned curriculum for *Dynamics* — fundamental course in dynamics of particles and rigid bodies. Revamped curriculum for a more modern textbook and created hands-on labs and workshops. The labs utilize the COSMOSMotion add-on to SolidWorks computer aided modeling software to perform complex dynamic analysis of solid models.

Introduced mechatronics to the mechanical engineering curriculum. Developed curriculum for hands-on, lab-based course, *Mechatronics*, focusing on practical electronics for mechanical engineers, and taught 2001-present. Course topics include semiconductors, combinatorial and sequential logic, sensors, actuators and microprocessor control.

Redesigned curriculum for *Basic Circuits and Electronics* — an electrical engineering course for mechanical engineers. Created five new hands-on laboratory modules and modified two existing modules for use in the course.

Courses taught in last 3 years: First-year Engineering Projects, Introduction to Mechanical Engineering, Machine Component Design, Dynamics, System Dynamics, Mechatronics and Robotics, Global Engineering.

K-12 Engineering Outreach

Developed curriculum and design project for *Success Institute* in the Summer of 2008, involving complex robotics engineering. Program targets first-generation college-bound seniors, and prepares them for success in college and engineering.

Led Mechanical Engineering portion of *High School Honor’s Institute* in the Summers of 2007 and 2008, including creation of hands-on design projects involving biomedical engineering, robotics engineering and aerodynamics. Also delivered keynote address for entire HSHI program in 2008.

Created and taught curriculum, and conducted *Girls Embrace Technology*, a six-week summer internship to introduce 37 high school girls to IT by working in teams to design multimedia software to teach elementary-school children about the physics in a popular ball-machine exhibit, 2002 and 2003.

Teaching Awards

Sullivan-Carlson Innovation in Teaching Award, Engineering Excellence Fund, College of Engineering and Applied Science, University of Colorado at Boulder, 2010

Outstanding Undergraduate Educator, Mechanical Engineering, University of Colorado at Boulder, 2009-10

Excellence in Teaching Award, Boulder Faculty Assembly, University of Colorado at Boulder, 2009

Dean’s Outstanding Teaching Award, College of Engineering and Applied Science, University of Colorado at Boulder, 2007

Best Professor Award, ASME University of Colorado Chapter, 2006-07

Shell Outstanding Undergraduate Educator, Mechanical Engineering, University of Colorado at Boulder, 2005-06

Best Professor Award, ASME University of Colorado Chapter, 2005-06

Charles Hutchinson Outstanding Teaching Award, College of Engineering and Applied Science, University of Colorado at Boulder, 2005