

Alice Merner Agogino

Roscoe and Elizabeth Hughes Chair of Mechanical Engineering
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EDUCATION

- B.S. (1975) Mechanical Engineering, University of New Mexico, Albuquerque, NM
- M.S. (1980), Mechanical Engineering, UC Berkeley, Berkeley, CA
- Ph.D. (1984), Engineering-Economic Systems, Stanford University, Stanford, CA

APPOINTMENTS

- Roscoe and Elizabeth Hughes Chair of Mechanical Engineering, UC Berkeley (1998-present)
- Education Director, Blum Center for Developing Economies (2016-present)
- Founder and Graduate Field Advisor, Product Design, MEng Concentration (2013-present)
- Chair, Development Engineering Graduate Group: Design for Impact (2013-present)
- Chair (2005-06), Vice Chair (2004-05) Faculty Academic Senate at UC Berkeley
- Chair, Instructional Technology for the Chancellor's Computing and Communications Policy Board (1993-2001)
- Faculty Assistant, Executive Vice Chancellor & Provost, Educational Development & Technology (1999-2001)
- Associate Dean, College of Engineering: Center for Underrepresented Engineers; Distance Learning and Instructional Technology, UC Berkeley (1995-1999)
- Professor (1992-present), Associate Professor (1988-92), Assistant Professor (1984-1988) of Mechanical Engineering, University of California at Berkeley
- Engineer and Business Specialist, General Electric (1975-1980)
- Director, Women-in-Engineering Program, University of Santa Clara, California (1980-1981)

HONORS AND AWARDS

- Fellow Recognition: IEEE (2014), ASME (2005), AWIS (2003), AAAS (1993).
- Best Paper Awards:
 1. ASME Best Paper (2016). "Design Roadmapping: A Framework and Case Study of Planning Development of High-Tech Products in Silicon Valley" (with Euiyoung Kim, Jaewoo Chung, and Sara Beckman), Design Theory and Methods (DTM), International Design Engineering Technical Conference (IDETC).
 2. Reviewers' Favourite award (2015). "Design Roadmapping: Challenges and Opportunities" (with Euiyoung Kim and Shun Yao), International Conference on Engineering Design ICED15.
 3. Reviewers' Favourite award (2015). "Design Talking: An Ontology of Design Methods to Support a Common Language of Design (with Celeste Roschuni, Julia Kramer, Qian Zhang and Lauren Zakshorn), International Conference on Engineering Design ICED15.
 4. Finalist Best Paper Award (2014). "Rapid Prototyping Design and Control of Tensegrity Soft Robot for Locomotion" (doctoral student Kyunam Kim was the lead author), IEEE International Conference on Robotics and Biomimetics.
 5. Reviewers' Favourite Award (2013). "Human-Centric Study of Digital-Paper Transitions: Framing Design Opportunity Spaces" (with E.Y. Kim, V.S. Kocsik, C.E. Basnage), International Conference on Engineering Design ICED13.
 6. Leon Gaster Best Paper Award for Lighting Technology (2011). "Control of Wireless-networked Lighting in Open-plan Offices" (with Yao-Jung Wen) published in Volume 43 Issue 2 of *Lighting Research & Technology*, Society of Light and Lighting.
 7. Best Note Honorable Mention (2011). "GreenHat: Exploring the Natural Environment through Experts' Perspectives," (with Kimiko Ryokai, Lora and Michael Manoochehri) ACM CHI.
 8. Best Paper (2005). "Microfabrication and Characterization of Evolutionary MEMS Resonators," Symposium of Micro- and Nano-Mechatronics for Information-based Society (with R. Kamalian and Y. Zhang), IEEE Robotics & Automation Society.
 9. ASME Xerox Design Theory & Methods Best Paper Award (2004). "Insights on Designers' Sketching Activities in New Product Design Teams," (with Shuang Song), Design Theory & Methods Conference.
 10. First Runner-up (2001) for the Novel Smart Engineering System Design Award (with Ningning Zhou, Bo Zhu and Kris Pister), ASME/IEEE Neural Networks Council.
 11. IEEE Helen Plants Award (1998) for "Best Non-Traditional Session at Frontiers in Education".

12. Best Overall Paper Award (1998). "Engineering for Middle School: A Web-based Module for Learning and Designing with Simple Machines," (with A. McKenna), Frontiers in Engineering Education) Conference.
 13. Best Paper Award (1997). "Integrating Design, Analysis and Problem Solving in an Introduction to Engineering Curriculum for High School Students," (with Ann McKenna), ASEE/IEEE Frontiers in Engineering Education Conference.
 14. Best Paper Award (1996). "Text Analysis for Constructing Design Representations," (with A. Dong), Artificial Intelligence in Design '96 Conference (Stanford, CA).
 15. Best Paper (1992). "A Structural and Behavioral Reasoning System for Diagnosing Large-Scale Systems," (with Robert K. Paasch), Conference on AI Applications.
 16. Best Paper Award (1991). "An Intelligent Real Time Design Methodology for Component Selection," (with S. Bradley), ASME Design, Theory and Methods Conference.
- ASME Ruth and Joel Spira Outstanding Design Educator Award (2015) for *tireless efforts in furthering engineering design education including curriculum changes that blend cutting-edge design topics with state-of-the-art educational practices; promoting wide-ranging interaction between industry and students; performing game-changing design research; and mentoring the next generation of designers, educators, researchers and engineers.* The award was presented at the 2015 International Design and Engineering Technical Conference (IDETC).
 - Faculty sponsor Big Ideas Competition (2015): First Place in Global Health, "Visualize: Saving Lives with Training for Cervical Cancer Screening", (Julia Kramer as student lead).
 - Awardee and Keynote Speaker at Assemblymember Nancy Skinner STEM Women of the Year (2014).
 - AAAS Lifetime Mentoring Award (2013). Citation: *for efforts to significantly increase the number of women and African- and Hispanic-American doctorates in mechanical engineering.*
 - Faculty Sponsor of student team in the Max Tech and Beyond Appliance Design Competition: Ultra-Low Energy Use Appliance Design Competition (2012-13). Project title: "User-Centric And Self-Commissioning Predictive-Model-Based Lighting Retrofit System", LBNL, Department of Energy.
 - Academy of Distinguished Alumni (2012). University of New Mexico, 2012.
 - Pi Tau Sigma Professor of the Year Award (2011). Citation: *demonstrated time and again her commitment to high academic standards and improving the undergraduate experience for Mechanical Engineering students.*
 - Faculty sponsor for First Place in Social Entrepreneurship Competition, "Class Projects to Social Ventures" and Second Place in Social Justice, Community Engagement Competition, "Students-Community Collaborative Design Challenge", Big Ideas Contest (2011).
 - Chancellor's Community Service Award (2010).
 - Semifinalist Announcement: Clean Technology Innovation Prize Competition (2008).
 - Faculty Award for Excellence in Graduate Student Mentoring, ME Graduate Student Council (2007).
 - Chancellor's Green Fund Award (2007).
 - Chancellor's Award for Advancing Institutional Excellence in Diversity (2006).
 - NSF Director's Award for Distinguished Teaching Scholars (2004).
 - Helen Plant Award for Best Innovative Session, Frontiers in Engineering Education Conference (1999).
 - Elected to the National Academy of Engineering (1997) with citation "*for applications of artificial intelligence to manufacturing, and for reform efforts in engineering education*".
 - John Wiley & Sons Premier Courseware Award, "Virtual Disk Drive Design Studio" (with D. Yu) for (1997).
 - Most Outstanding Alumnus, Dept. of Mechanical Engineering, University of New Mexico (1992).
 - Young Manufacturing Engineer of the Year (1987-88), Society of Manufacturing Engineers.
 - Ralph R. Teetor Educator Award (1987).
 - Pi Tau Sigma Award for Excellence in Teaching (1986).
 - NSF Presidential Young Investigator Award (1985).

SELECTED PROFESSIONAL AND SYNERGISTIC ACTIVITIES

- National Academies: Member, Committee on Women in Science, Engineering, and Medicine (2009-present); Member, National Academies Board on Science Education (BOSE, 2005-2007).
- National Academy of Engineering: Council (elected), 2008-2014; Co-Chair, Nomination Committee, Section 10 (2007-20010); Chair (2005-2006), Vice-Chair (2004-2005) Section 10 Peer Committee;

Chair, Gordon Prize Committee (2003); Member, National Academy of Engineering, Committee on Engineering Education (1998/2002); Engineer of the Year 2020 Committee (2001/2002); Committee on Technology Literacy Standards (1997/2000).

- Chair (2017+), Member (2012-2017), Scientific Advisory Board, Singapore University of Technology and Design SUTD-MIT International Design Centre (IDC); Member, International Review Panel, Ministry of Education, for the Singapore University of Technology and Design SUTD-MIT IDC (2017).
- Member, President's International Advisory Council, King Abdullah's University of Science and Technology (KAUST) (2012-2013).
- Co-Chair, Chancellor's Berkeley Diversity Research Initiative, UC Berkeley (2005-2006)
- Member, Manufacturing Engineering Laboratory of the National Institute of Standards & Technology (NIST; 2004-2005).
- President, Association of Academic Women, UC Berkeley (2002-2004).
- Chair, Executive Committee, SESAME (Studies in Engineering, Science and Mathematics Education) doctoral program, UC Berkeley (Chair, 2003-2004; Member, since 1998).
- Member, ASME, Education Board (2004-2006).
- Member, ESD Advisory Board, Jet Propulsion Laboratory (2003).
- Member, Advisory Committees: Radcliffe Institute, Harvard (2003-2006), MIT (2001-2003).
- Chair, Panel Review, NASA Advanced Human Support (2002).
- Member, Advisory Committee, Center for Race and Gender at the UC Berkeley (2002-present).
- Chair of the AAAS section on Engineering (2001-2002); Member, Committee on Opportunities in Science (COOS), AAAS (1998-2003).
- Director of Synthesis, a NSF-sponsored engineering education coalition (1995-98).
- NSF Advisory Committee for Engineering, Engineering Directorate, (1991-96, Chair 1996-97).
- Associate Editor, *Artificial Intelligence in Engineering, Design, Analysis and Manufacturing* (AIEDAM).
- Editorial Board: *Journal of Engineering Education* and *Research in Engineering Design* (1995-2005).

SELECTED PUBLICATIONS

1. W.H. Wood, A.M. Agogino (2005). "Decision-Based Conceptual Design: Modeling and Navigating Heterogeneous Design Space," *ASME Journal of Mechanical Design*, Vol. 127, Issue 1, pp. 2-11.
2. C.L. Dym, A.M. Agogino, O. Eris, D.D. Frey, L.J. Leifer (2005). "Engineering Design Thinking, Teaching and Learning," *Journal of Engineering Education*, v. 94, no. 1, pp. 103-120.
3. J.H. Hey, A.P. Van Pelt, A.M. Agogino, S. Beckman (2007). "Self-Reflection: Lessons Learned in a New Product Development Class," *Journal of Mechanical Design*, ASME, Vol. 129 (7), pp. 668-676.
4. L. Oehlborg, K. Lau, A.M. Agogino (2009). "Tangible Interactions in a Digital Age: Medium and Graphic Visualization in Design Journals," *AI in Engineering Design, Automation and Manufacturing*, Vol. 23, No. 3, pp. 237-249.
5. L. Oehlborg, R. Shelby, A.M. Agogino (2010). "Sustainable Product Design: Designing for Diversity in Engineering Education," *Int. J. of Engineering Education*, **26** (2), pp. 489-498.
6. C.L. Cobb, A.M. Agogino (2010). Case-based Reasoning for Evolutionary Design, *ASME Journal of Computing and Information Science in Engineering*, Vol. 10 (3).
7. L. Oehlborg, R. Shelby, A. M. Agogino (2010). "Sustainable Product Design: Designing for Diversity in Engineering Education," *International Journal of Engineering Education*, Vol. 26 (2), pp. 489-498.
8. Y. Zhang, A.M. Agogino (2012). "Hybrid Evolutionary Optimal MEMS Design," *International Journal of Advanced Manufacturing Technology*, **63**(1-4) pp. 305-317.
9. R. Shelby, Y. Perez, A.M., Agogino (2012). "Partnering with the Pinoleville Pomo Nation: Co-Design Methodology Case Study for Creating Sustainable, Culturally Inspired Renewable Energy Systems and Infrastructures," *Sustainability* **4** (5), pp. 794-818.
10. M. Fuge, A.M. Agogino (2015). "Pattern Analysis of IDEO's Human-Centered Design Methods in Developing Regions", *ASME Journal of Mechanical Design*, **138** (4).
11. C.L. Cobb, J. Hey, A.M. Agogino, S.L. Beckman, S.-Y. Kim (2016). "What Alumni Value New Product Development Education: A longitudinal Study", *ASEE AEE*, **5** (1) pp. 1-37.
12. Kim, E., J. Chung, S. Beckman, A.M. Agogino (2016). "Design Roadmapping: A Framework and Case Study of Planning Development of High-Tech Products in Silicon Valley", *ASME Transaction, Journal of Design*, **138** (10). Also BEST Paper at ASME IDETC 2016.