Karl A. Smith is Cooperative Learning Professor of Engineering Education, School of Engineering Education, at Purdue University. He is also Emeritus Professor of Civil Engineering, Morse-Alumni Distinguished Teaching Professor, Executive Co-Director STEM Education Center, and Faculty Member, Technological Leadership Institute at the University of Minnesota. He has been at the University of Minnesota since 1972 and in 2006 he accepted a part time position as Cooperative Learning Professor, School of Engineering Education, Purdue University where he is helping start the engineering education PhD program in the College of Engineering. His research and development interests include building research and innovation capabilities in engineering education; faculty and graduate student professional development; the role of cooperation in learning and design; problem formulation, modeling, and knowledge engineering; and project and knowledge management and leadership. His bachelor's and master's degrees are in metallurgical engineering from Michigan Technological University and his Ph.D. is in educational psychology from the University of Minnesota.

Karl is currently PI on the NSF Workshop: I-Corps for Learning (I-Corps-L): A Pilot Initiative to Propagate & Scale Educational Innovations, and NSF EAGER: I-Corps for Learning (I-Corps-L): Curriculum Development and Implementation. He has been co-PI on two NSF Centers for Learning and Teaching (CLT), including the Center for the Advancement of Engineering Education (CAEE), and co-PI on a NSF-CCLI-ND—Rigorous Research in Engineering Education: Creating a Community of Practice, and the NSF project COLLABORATIVE RESEARCH: Expanding and sustaining research capacity in engineering and technology education: Building on successful programs for faculty and graduate students. He serves on the National Advisory Boards for many research projects, including the NSF-CLT Center for the Integration of Research, Teaching and Learning (CIRTL); and the National Academy of Engineering's Center for the Advancement of Scholarship on Engineering Education (CASEE). He served on the National Research Council's Discipline-Based Education Research consensus study and the National Academy of Engineering Frontiers of Engineering Education planning committee.

Karl has received numerous awards, including Honorary Doctorate, Universiti Teknologi Malaysia; Distinguished Alumni Award, College of Education and Human Development, University of Minnesota; Distinguished Service Award, Educational Research and Methods Division, Chester F. Carlson Award for Innovation in Engineering Education, and Fellow, American Society for Engineering Education; and Ronald J. Schmitz Award for outstanding continued service to engineering education through contributions to the Frontiers in Education Conference, ERM Division of ASEE and Education Society of IEEE.

He has served as Co-Coordinator for the Bush Faculty Development Program for Excellence and Diversity in Teaching, and Associate Director for Education at the NSF-ERC Center for Interfacial Engineering at the University of Minnesota; as a member of the Board of Directors of the Collaboration for the Advancement of College Teaching and Learning; and as Chair of the Educational Research and Methods Division of the American Society for Engineering Education. Between 1999 and 2004 Karl had a split appointment with Michigan State University where he served as a Senior Consultant to the Provost for Faculty Development.

Karl has published numerous articles on engineering education, cooperative learning and structured controversy, knowledge representation and expert systems, and teamwork. He teaches graduate courses on STEM education at the University of Minnesota and engineering education at Purdue, and on project and knowledge management and leadership in the Technological Leadership Institute at the University of Minnesota. He conducts workshops on building engineering education research and innovation capabilities, cooperative learning (especially in STEM disciplines), problem formulation and modeling, and project management and teamwork. He co-designed the Mn/DOT Project Management Academy and the Essential Skills for Project Managers workshops, and has worked with hundreds of engineers and managers at Mn/DOT. His workshops on cooperative learning have helped thousands of faculty build knowledge, skills and confidence for involving their students in more active, interactive, and cooperative learning both during class time and outside of class. The effects of the work are significant in terms of creating a sense of belonging and membership in a community, as well as much more engaged and deep learning.

Karl has written eight books including *How to model it: Problem solving for the computer age* (with Anthony Starfield and Andrew Bleloch), first published by McGraw-Hill in 1990; *Cooperative learning: Increasing college faculty instructional productivity* (with David and Roger Johnson), published by ASHE-ERIC Reports on Higher Education in 1991; *Strategies for energizing large classes: From small groups to learning communities* (with James Cooper and Jean MacGregor) published in Jossey-Bass's New Direction for Teaching and Learning series in 2000; and the 2014 *Teamwork and project management*, 4rd Ed. published in McGraw-Hill's BEST Series.