

Edmund G. Seebauer
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Edmund G. Seebauer is the James W. Westwater Endowed Professor of Chemical & Biomolecular Engineering at the University of Illinois at Urbana-Champaign. He has served on the faculty there since 1988, including as Department Head 2005-11. During 2011-14 he served as a Provost Fellow for the Illinois campus, functioning as a special-assignment associate provost focusing on international academic programs.

Seebauer received his Bachelor's degree from the University of Illinois in 1983, and his PhD from the University of Minnesota in 1986 – both degrees in chemical engineering. After a year of postdoctoral study in the Laser and Atomic Physics Division at Sandia National Laboratories in Albuquerque, he returned to Illinois. His current research focuses on the manipulation of atomic-scale defects in semiconducting oxides to make nanoscale devices, catalysts, and photocatalysts of interest in microelectronics, energy and environmental applications. The work lies at the crossroads of engineering, physics, chemistry, and materials science. Seebauer's group has devised a battery of new experimental and computational methods for quantifying the rates at which defects interact with surfaces, and has discovered several new optical and ion-related phenomena for enabling defect engineering. Apart from the intellectual property this work has generated, his group has worked with numerous major corporations to connect the basic science to practical applications.

He has received a Sloan Research Fellowship in Chemistry and an Inventor Recognition Award from Semiconductor Research Corporation, and is currently a Fellow of the American Association for the Advancement of Science, the American Institute of Chemical Engineers, the American Physical Society and AVS – the Society for Science and Technology of Materials, Interfaces and Processing. He has roughly 200 journal and conference publications, four patents, and two books on charged defects in semiconductors as well as engineering ethics. He has received several awards for student teaching and advising. Seebauer has formal education in philosophy through a Study in a Second Discipline Fellowship for faculty at Illinois. He has developed an undergraduate course in engineering ethics, and continues to write and lecture publically on the subject.

As a department head, Seebauer led an effort to develop a new approach for integrating team-oriented design throughout a chemical engineering curriculum with large student-to-faculty ratios. He organized an advancement campaign that raised several million dollars, with endowments for several chairs, professorships, fellowships and scholarships. He created a Corporate Relations Advisory Council, and helped to create a Local Corporate Partners program focused on companies within the community. He oversaw efforts that re-energized student organizations and tutoring programs for students from underrepresented groups, as well as improvements in the diversity of the faculty and graduate students. As Provost Fellow, he spearheaded the development of a new university-level approach for enabling large numbers of undergraduates to perform research abroad.