

AU alumna to deliver McMahon Lecture

8/15/06

Dr. Katherine T. Faber, a 1975 graduate of Alfred University with a degree in ceramic engineering who is president-elect of the American Ceramic Society, will deliver the annual John F. McMahon Memorial Lecture, scheduled for Thursday, Sept. 7, 11:20 a.m. in Holmes Auditorium, Harder Hall. Now the Walter P. Murphy Professor of Materials Science and Engineering in the McCormick School of Engineering and Applied Science at Northwestern University, Faber will speak on "Porous Ceramics by Nature and by Design." "Porous ceramics offer a wealth of uses from water treatment to catalysis to sensors," Faber explains, but traditional methods of processing the materials is very energy-intensive if done by traditional methods. For example, silicon carbide, one of the hardest and most refractory material known, does not occur in nature. Conventional processing requires temperatures in excess of 2,000 degrees C. In her talk, Faber will discuss alternative methods of producing silicon carbide, including one that relies on wood to create a carbon scaffold on which the material is built. Another method she will discuss is thermoreversible gelcasting, a direct casting method that uses a low-viscosity slurry to produce complex-shaped ceramics. Faber's research interests include fracture of brittle materials, thermal shock, fatigue, and reliability. She has published approximately 120 papers and edited one book in the area of fracture and toughening mechanisms in ceramics, glasses, electronic materials, cement-based materials, coatings, and ceramic-matrix composites. Educated at Alfred University with a B.S. in Ceramic Engineering (1975), she then went on to the Pennsylvania State University for a M.S. in Ceramic Science (1978) and to the University of California at Berkeley for a Ph.D. in Materials Science and Engineering (1982). She has held the positions of invited summer employee at the Lawrence Livermore National Laboratory (1975, 76) and development associate at the Carborundum Company (1978-79) and visiting professor of materials at the University of California at Santa Barbara (Winter 1996). Prior to joining the faculty at Northwestern in 1988, she was assistant and associate professor of ceramic engineering at the Ohio State University (1982-87). Her administrative positions have included associate dean for graduate studies and research in the McCormick School (1992-97) and Chair of the Department of Materials Science and Engineering (1998-2003). Among Faber's awards are the National Science Foundation's Presidential Young Investigator Award, Fellow of the American Ceramic Society and of ASM International, the Charles E. MacQuigg Award for Outstanding Teaching at Ohio State, the Society of Women Engineers Distinguished Educator Award, and the YWCA Achievement Award for Education. She is an ISI Highly Cited Author in Materials, and currently serves as president-elect of the American Ceramic Society.