Princeton University

Honors Faculty Members Receiving Emeritus Status

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The biographical sketches were written by staff and colleagues in the departments of those honored.

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George W. Scherer

George Scherer, a revered materials scientist who is renowned for his seminal works in sol-gel science, cements, conservation of historic structures, and glass science, will retire after twenty-one years at Princeton.

George is a native to New Jersey, and was born and raised in Teaneck, across the Hudson River from New York. His journey into materials science begun with combined bachelor's and master's degrees in ceramics at the Massachusetts Institute of Technology, and continued with a Ph.D. at the same institution in materials science. Chemistry was in the cards at the start of his time at MIT, but after blowing up a separatory funnel in lab class, he decided to change to less volatile matter. There was also a period that George considered changing his major to English, but materials science was the ultimate winner, and he obtained his doctorate in 1974 with a thesis titled "Crystal Growth in Binary Silicate Glasses."

His first position post-Ph.D. was as a research associate in Corning Glass Works' research and development division in upstate New York. For eleven years he investigated the fundamentals of glass science, which led to multiple patents, a book, and many stories that he would later incorporate into his teaching at Princeton. A career sea change in 1985 saw George moving to Wilmington, Delaware, where he worked as a senior research associate in the Central Research and Development Department of DuPont. George's research at DuPont focused on sol-gel science, and again he published a significant number of influential papers. An important milestone during his time at DuPont was the writing and publication of his book *Sol-Gel Science: The Physics and Chemistry of Sol-gel Processing,* which he wrote with colleague Jeff Brinker from 1988–1989. Today, this book is the authority on sol-gel science. DuPont recognized George's calling and drafted a contract that enabled him to spend a day or two a week to work on the book.

After eleven years at DuPont—note that this is the same duration as his position at Corning—George underwent another sea change and landed in the Department of Civil Engineering and Operations Research at Princeton in 1996. Moving from industry to academia

did not pose a large enough challenge for George, so he also decided to completely change research fields as well, from sol-gel science to cements. George established himself as a leader in the cement and concrete research community by creating and applying sophisticated mathematical models to explain complex degradation phenomena, such as salt scaling, which previously eluded researchers. He also branched out into the materials science of conservation of historic structures and monuments. During his years at Princeton, George became known as the professor on campus who could tell you all about the deterioration of buildings and monuments, and even developed a campus tour following this theme for students that included stops at Alexander Hall, Edwards Hall, McDonnell Hall, and the statue of John Witherspoon near East Pyne.

Over the course of his career, George has published more than 320 peer-reviewed articles. In 1997, George was elected into the National Academy of Engineering for his contributions to the theory and practice of glass and ceramic processing. Numerous other accolades have been bestowed on him over the years including the Ralph K. Iler Award from the American Chemical Society, and multiple S. Brunauer awards from the Cements Division in the American Ceramic Society. However, although he is a world-renowned researcher, George is quintessentially the most humble of scientists. As an example, a former postdoc of his recounts him saying, "I never understood people who live science as a competition. If you see it as a large puzzle, every piece of the puzzle that someone else contributes to finding is one less that you have to find yourself."

George's initiation into teaching cement and concrete at Princeton was not entirely smooth sailing. Having never before mixed concrete, George created a lab-based undergraduate course titled "Materials in Civil Engineering," which included students making concrete samples and subsequently testing their mechanical properties. Therefore, when the students asked during his first year of teaching, "Is this what concrete should look like?" his response was a tentative "sure." He also mentored students in the Concrete Canoe competition, which convinced him that winning this competition was not really a test of who could make the best concrete, but more a test of their paddling or swimming abilities. However, in all seriousness, George has been a highly influential teacher to undergraduate and graduate students at Princeton.