



Rosemary Knight

Rosemary Knight is a professor at Stanford University where she is widely recognized as someone who cares about the personal welfare of students and postdoctoral scholars, as well as their scientific success. She is an example of excellent mentoring and advising. Knight has infused students with an enthusiastic love for geophysics, focusing on the environment and near-surface geophysics. Her long list of awards and compliments are a testament to her dedication and excellence as an educator.

BY ELLIOT GRUNEWALD, KRISTINA KEATING, STEPHEN MOYSEY, ANDREW PARSEKIAN, AND KAMINI SINGHA

Rosemary Knight is the George L. Harrington Professor in the School of Earth, Energy and Environmental Sciences at Stanford University where her research is focused on near-surface geophysics. Rosemary has formally supervised more than 27 graduate students, eight postdoctoral scholars, and influenced many more through informal mentoring and inspiration that she has provided over the years. It is notable that eight of her 15 PhD students have continued in academia, with many others holding influential roles in industry. She has been appreciated not just for the science she does, but also for her teaching, mentoring, and advising excellence. Collaborating with students and infusing them with a love for geophysics is something that Rosemary particularly excels at.

Former graduate students have highlighted her importance to them, with some familiar themes. One student said, “Rosemary has, without question, been the most important and formative influence in my career as a scientist.” Another had similar feedback: “I can say without reservation that working as a student with Dr. Knight reshaped my view of the world and not only allowed me to become a geophysicist, but also made me a better hydrologist and better person as well.” A third student noted, “Throughout my doctoral degree, Rosemary was a constant source of motivation and support. She was encouraging when there was a new experiment that I wanted to try and, when I hit roadblocks in my research, she helped me find different ways of looking at a problem. Despite the fact that she was chairing the department of geophysics, serving on the university’s budget committee, developing the I-Earth course series, and chairing the AGU Near-Surface Geophysics Focus Group, Rosemary never failed to take the time to talk about my research progress and show enthusiasm for my project. ... Rosemary’s unequivocal support was instrumental in convincing me to follow in her footsteps.”

Rosemary is not only interested in graduate education but also has pushed Stanford to be a leader in undergraduate education. Pamela Matson, Chester Naramore dean of the School of Earth, Energy and

Environmental Sciences at Stanford University, said of Rosemary: “She has also conceived and led a major initiative at Stanford University to enhance education in the area of earth and environmental sciences. In the I-Earth initiative (Introduction to Planet Earth), Rosemary led an effort that identified or created a selection of courses designed to provide undergraduates with an understanding of how earth works — in particular how humans interact with their resource and environmental systems. The I-Earth byline — ‘not yet a requirement for Stanford... already a requirement for life’ — communicates not only the importance of the subject matter, but Rosemary’s commitment to ensure that all college students understand something about the planet that we share.”

Beyond her contributions to the next generation of scientists, Rosemary has also pushed the envelope on the use of near-surface geophysics to solve environmental problems. She is perhaps best known for her contributions in two areas: rock physics on partially saturated samples and, more recently, developing nuclear magnetic resonance (NMR) as a reliable groundwater characterization method. With respect to NMR, Rosemary has been a pioneer in defining this field and developing imaginative applications of the technique. Following the outlook mirrored in her other fields of research, Rosemary’s approach to training students in NMR has emphasized addressing the most fundamental (and often most poorly understood) aspects of the NMR response. In addition to the immediate impacts of her discoveries in NMR, her focus on fundamentals has built a robust foundation that has allowed others in the hydrogeophysical community to further advance this methodology.

Rosemary has said that we all need to be “a positive force for change.” It is clear that she has accomplished this by injecting the next generation of near-surface geophysicists with enthusiasm and curiosity and motivating them through the challenges of research. The sum of all of these examples demonstrates how Rosemary has been a consistent inspiration to the next generation of geophysical scientists.