

## 2008 MEDALS & AWARDS

### 2008 BIGGS AWARD FOR EXCELLENCE IN EARTH SCIENCE TEACHING

Presented to Karen M. Kortz



Karen M. Kortz  
Community College of Rhode Island

#### *Citation by Daniel P. Murray*

I am both pleased and honored to be the citationist for this year's recipient of the Carolyn Biggs Earth Science Teaching Award, my colleague Karen Kortz. I have known Professor Kortz for six years, originally as "that gifted new teacher" in the Physics Dept. of the Community College of Rhode Island (CCRI), and more recently as my Ph.D. student. Specifically, I first met her as a co-member of the RI Space Grant program, from which she has secured competitive funding for students to build and test an experiment in conjunction with the Reduced Gravity Student Flight Opportunity Program by NASA.

Ms Kortz received her B.A. in Geology, Magma cum Laude, from Pomona College in 1998 and a M.Sc. in planetary geology from Brown University in 2001. Although she originally planned to continue on for a Ph.D. in planetary geology, a funny thing happened. During a leave of absence after her Masters, she took an adjunct position in the physics department (they have no geoscience department) at CCRI. She fell in love with teaching, and quickly decided to make it her career, and she is now a tenured associate professor. Additionally she is currently enrolled at the University of Rhode Island for her Ph.D. in Geoscience Education, where she is expected to complete all work by the end of this semester. Good career change, as in her

short time in the profession she has made great progress. But wait, you may ask, how can such an ABD—even a very good one—merit consideration for such a prestigious award as the Biggs, when there are so many other gifted young geoscience educators in the discipline? But Professor Kortz is much more than an excellent teacher, for despite her youth she has emerged as a major player, nationally, in earth science education. Let me elaborate.

At CCRI she has developed from scratch an exemplary earth and space science curriculum, in which she does all the teaching, including courses in introductory geology, planetary geology, and oceanography. She is also director of the Honors Program and a member of a variety of committees that deal with issues ranging from mentoring students with disabilities to college accreditation. Her teaching is superb, as evidenced by summaries of course evaluations, student comments, and letters of support from former students. The following comments from former and current students capture the essence of her impact on their careers: "Prof. Kortz had us work with our classmates ... As a shy person I was not so sure that this would be helpful for me to learn. Well as it turns out, It was helpful! It allowed myself and classmates to discuss what we had learned ... It also helped me overcome my shyness. That is something that I can apply to my future in every area of my life...." and "Karen's general excitement for the subject of Geology and caring personality makes it virtually impossible not to learn. The knowledge I received from Geology I will carry with me for the rest of my life. There is no way to just look at a rock anymore;...".

Her doctoral research focuses on alternative ways to present E&SS materials to students that takes into account learning differences and the latest research in the cognitive sciences. The first chapter of her thesis identifies barriers to learning introductory geology, and develops ways to counter them through the creation of Lecture Tutorials. This work is complete and was published in the May issue of the Journal of Geoscience Education, and in an expanded form as a book (for which a publisher has been lined up). Additionally, she has presented workshops on the use of Lecture Tutorials at the 2007 New England section of the NAGT meeting, and at this GSA meeting. Other chapters (which are also presented at this meeting) address difficulties students have with core issues in cladistics and the rock cycle. Her early publications dealt with Venusian and Martian soils and volcanism. More recently her work has focused on

the aforementioned Lecture Tutorials, the development of outcomes- and assessment-based curricula in the geosciences, and misconceptions in geosciences, in general. Her grantsmanship is also enviable, as she is the PI or Co-PI on three NSF grants and a DLESE grant.

In addition to the Biggs award, Professor Kortz received the Dedicated Teacher Award at CCRI, and an award from the American Association of Woman Geologists. Part of her success in these endeavors is due to her initiative in making the effort to become a major player in the national geoscience community. This includes her involvement in DLESE, CERES & Cutting Edge activities, NAGT (for which she is the vice-president of the New England section), GSA, and AGU. Let me draw from the words of her peers, as they speak eloquently to her impact on all of us in Rhode Island and elsewhere in the profession: "This balance between challenging students and making a subject enjoyable is difficult to achieve, yet Karen has managed to do this in her classes.... It was interesting how the students tended to highlight different activities and projects, indicating to me how carefully Karen has constructed her class to use many different assessment techniques, such as web-research homework, presentations, small and large group discussions, and hands-on activities." and "Karen is a remarkably inventive and versatile teacher. She has collaborated on the creation of new types of curricula; most importantly, she strives to understand the effectiveness of the materials that she uses and develops. Her passion for teaching, for engaging students in research, and for being a life-long learner makes her an excellent resource for students. Karen seems to have boundless energy for teaching, understanding how students learn, and investigation of learning in her own classrooms."

Given the sad state of STEM education in the USA today, the infusion of young teachers such as Professor Kortz into the system is critical, especially at the community college level. CCRI, as with many community colleges nationwide, educates students who, to a greater extent than at four year schools such as the University of Rhode Island, have physical, cognitive, and cultural issues that impede learning. Karen is keenly sensitive to these issues and they are, at least partially the reason she has devoted considerable time and energy to development of alternative teaching instruments.

Bottom line, Karen Kortz is the complete package. She is a gifted teacher who is

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not content to limit her efforts to her own classroom. Rather, she is continually striving to improve science education, nationally as well as parochially, through her efforts to develop new methodologies and approaches to teaching. It has been my great fortune to have such a gifted young teacher as my student, colleague, and friend, to be able to watch her grow intellectually and professionally, over the last few years. And as a bonus, I've learned much from her about what comprises a great teacher and educator, and how to go about becoming one.

### *Response by Karen M. Kortz*

I am delighted and deeply honored to be named this year's recipient of the Donald and Carolyn Biggs Award for Excellence in Earth Science Teaching. I thank Dr. Dan Murray, who nominated me, and my colleagues and students who wrote letters of support. I also thank the selection committee and the Geoscience Education division of the GSA for selecting me to be the newest member of this distinguished group of faculty. I am truly humbled.

I want to begin by saying that I am actually a second-generation Biggs recipient. Two of my former professors at Pomona College, Eric Grosfils and Linda Reinen, received the Biggs award. I appreciate their excellent teaching, and they have been wonderful role models for me.

My path to becoming a professor was not a straight and simple one. I didn't start off knowing what I wanted to do, and I ended up where I am now through a series of fortunate events. I entered graduate school with the goal of getting my Ph.D. After earning my Masters degree, though, I began to re-visit my long-term career aspirations. So, I took a break from graduate studies. At the same time, the local community college (the Community

College of Rhode Island) was looking for an adjunct professor in geology, so I applied. Since it was one week before classes started, I got the job.

I quickly discovered that I loved teaching. However, after my first semester, I felt that I could do more to help students learn. I knew I could do better, but I wasn't sure how. Looking around online, I accidentally stumbled across a website with information about On the Cutting Edge workshops. I had never heard of the workshops, but because they were free and because the one for beginning geology teachers sounded to be just what I needed, I attended.

The workshop, once more, changed my career. I not only learned about great ideas to improve my teaching, but also that there was a field of geology, called geocognition, where you actually learn how people think about geology. I have always loved geology, but now I had finally found my passion within the field.

After discovering the field of geocognition, I started doing some research on my own and began to re-entertain the notion of pursuing a Ph.D. At a meeting with representatives from colleges across the state (in Rhode Island, that's not too difficult), I talked to a geologist from the University of Rhode Island, Dan Murray. I floated the possibility by him that I was thinking of pursuing my Ph.D., and he was very enthusiastic about the idea and was willing to take me on as a student.

Since then, I've been researching and taking classes in addition to keeping my teaching position at CCRI, and I have been loving every minute of it. I want to thank Dan for his support and his nomination. He has been a wonderful mentor for me. He has guided my education and influenced my teaching with his broad interests ranging from art history to geology to cognition.

I also especially want to thank Jessica Smay, who has played many roles in my life. She is a colleague, a collaborator, a supporter, a friend, and my little sister. She also has an instinct for teaching, and has an excellent vision of how to approach the teaching of difficult topics. Our unique relationship as colleagues and sisters allows us to be excellent collaborators. And without her, I would not be where I am today.

In addition, I would like to thank my family. My parents always supported me in doing whatever I wanted that would make me happy, and I thank them for that. I couldn't have accomplished what I have done without my husband, Brian. He has been there for me, and his dedication and support have allowed me to take on everything that I have, and actually succeed at it.

I would like to wrap up by saying that I teach at a community college, and it is my understanding that I am only the second community college professor to be selected for the Biggs Award. I am honored to be in such prestigious company, but disappointed that there are not more community college professors selected for the award. Faculty at community colleges face difficulties not typically seen at four year institutions. Community college instructors are often the sole geologists at their schools, so they work in isolation, and do not have colleagues to nominate them for awards such as this one. They often do not have funding to travel to meetings, and their teaching loads prevent them from conducting research and publishing papers. As a result, although I'm sure there are many community college professors that are deserving of this award, their efforts are not being recognized. I hope that this is something that will change in the future.

Thank you again for this extraordinary honor.