

FROM THE FIELD

Program Profile

Science and Me: Intergenerational Interaction Rewards Both Sides

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Appreciation for science and for the impact science has on the world varies a great deal in different societies, cultures, and, especially, generations. In some instances, retirees and the elderly are aware that many aspects of their daily lives are better and easier because of scientific advances in medicine, in managing the environment, in developing technology, improving foods, and more. In other instances, appreciation for science is lacking, and the lack of information or education results in little appreciation for the role science plays in modern societies. In either case, getting information is hard for this age group. Some retirees are limited in their ability to get to places where science is presented. However, we suggest that it is more likely because scientific presentations that aim to communicate science to the lay public are not abundant. We often hear from people who attend science-based talks that it was difficult to understand what the speaker was talking about and it discourages people from coming again. There is a real need to communicate more about the basic scientific research behind everyday advances and the process of translating science to become a part of our daily lives.

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The need for science-based educational programs that would be presented in lay language and that would be easily accessible to elderly persons is the motivation for a group of eight young science and science-education graduate students at the University of Missouri who set out to bring science to the people. This group of students participated in a new course, “Science Outreach: Public Understanding of Science,” with the goal of communicating science to the elderly at their places of residence in our community. The main idea was to increase awareness to the science behind the medicines we use, the vaccines we get, the food we eat, and the technologies we use. With this goal in mind, each of the students generated a 40 minute presentation on a topic ranging from dealing with animals in the backyard to understanding climate change, memory loss, biodiversity, natural selection, genetically modified food, and vision loss. The series of presentations was dubbed the “Science and Me” series. Presentations were prepared in lay language, with minimal, carefully explained professional jargon and engaged the nonscientific audience in thinking about how the topics applied to them personally.

Each presentation was accompanied by a colorful brochure generated by the students, which highlighted the main points of the presentations. Our audiences ranged from 6 to 50 participants. Following the presentations the students engaged in discussions with members of the audience, answered questions, and exchanged stories and anecdotes in what were very friendly settings. The students delivered over 30 presentations in several independent living facilities, the University of Missouri Alumni Center, and the public library and delivered abbreviated presentations on a popular community television talk show. Each of these venues was visited at least twice, and some of the venues were visited by all 8 students in response to the audience requests for more talks. All told, the students interacted with at least 500 retirees in a six month period.

THE AGING BRAIN

What to Remember About Memory Loss

It was amazing to me how this topic piqued the interest of so many people. One of the most fulfilling aspects of this experience was that the discussion period following the presentation often lasted longer than the presentation itself and included many personal anecdotes.

—Student

A 92-year-old resident told one of our students, “Today you reminded me that one is truly never too old to learn.” A lady told another student, “Today, for the first time, I really understood why my son is studying ecology in Florida,” and yet another lady commented after attending the eye-sight and vision loss presentation, “You made this so easy to understand. A while back, we watched a video about vision and I was so confused. Rods and cones and stuff. Your presentation really made it clear. Now I feel like I could go back and watch that video and it would make a lot more sense.” Comments like these showed the students and instructors that the audiences enjoyed and benefitted from their presentations and from the interactions with the student presenters. Many of our listeners expressed interest in sharing information with their friends who could not attend the talks and often requested additional handouts. Our listeners were touched by the fact that “young scientists” came to them and they welcomed the students and appreciated the time and effort taken on their behalf.

IT'S GETTING HOT IN HERE

What's the Big Deal About Climate Change?

One of the challenges I had was explaining the use of mathematical models and their predictive value. The other was much more basic: There are many who don't believe in climate change . . .

—Student

What was a pleasant surprise for us was how much the students themselves learned from their interactions with senior audiences and how rewarding the students found this program. Small groups allowed for personal dialogues and, indeed, students and residents engaged in discussions before, during, and after the presentations. Seniors have different perspectives, expectations, and knowledge bases, and through these dialogues the students gained another perspective about their topics and learned from their audiences. Members of the audience, based on years of experience, shared memories and anecdotes from the past that were relevant to the presentations. They remember a world without antibiotics, without immunization programs, without cell phones, iPods, or hearing aids. They remember our city before so many neighborhoods were added, fragmenting habitats and creating problems with wildlife. They remarked on how the science they studied in elementary school years ago is different from what it is today. These conversations added real depth for the students and, many times, resulted in the students revising presentations to better address the questions and concerns of these audiences.

Students usually give talks to scientists who speak the same professional language. It was an authentic challenge for the students to prepare talks in lay language. Having the opportunity to present their topics several times to public audiences highlighted for the students which parts of their talks worked well and which parts needed improvement, which colors were easy for elderly persons to see in the slides, how to engage the audiences at key points in the talks, what concepts were harder to convey and what are some of the prevailing misconceptions the public holds about the topics being discussed. Because many graduate students will eventually teach science in the future in schools or in colleges, students felt that this experience would make them better science teachers in the future.

This "Science Outreach" course was a new experience for us. We do not have many opportunities within the university curriculum to interact with the elderly or to communicate specialized knowledge to lay audiences. This course taught us that an intergenerational program is not only possible but is highly beneficial and rewarding for young scientists and experienced elders. Making a difference in our community gave the students a sense of purpose beyond the laboratory.