PRESIDENTIAL ADDRESS

Examing South Dakota Academy of Science's Role in the Scientific Landscape of South Dakota

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This is the Year of Science 2009 (COPUS, 2009), and the Academy has been celebrating it these past few days. The meeting has reenergized me and hopefully many of you to address some of the challenges we face as a scientific community. It is an excellent time to celebrate our many accomplishments; recognize our members who support the academy and excel in their fields; acknowledge the work of graduate and undergraduate students at our various institutions; continue to encourage science activities in K-12; and assess where we are headed in the future. Perhaps it is also time to consider how the academy might expand its influence in the South Dakota science landscape and fill possible voids.

As an academy we continue to provide a forum for the entire spectrum of disciplines and that in itself makes us unique. With today's emphasis on specialization, it is rare that the scientific community meets in a forum where we can hear papers on everything from DNA to dinosaurs. Additionally, we provide a venue for everyone from those at the top of their profession to those just beginning—our undergraduates. With the changed format of the Poster Session in Pierre, we have the opportunity to be one of the major forums for undergraduates to receive acclaim for their work and experience presenting their work to fellow scientists. Our support of the Regional Science Fairs allows us to reach down into K-12 and have a positive impact at early points in a person's academic career. Just yesterday we heard about some of the Title II grants that are doing just that. Many of our members teach non-major courses and have an opportunity to influence future voters by instilling in them the ability to critically look at information and ask pertinent questions. We are able through our teaching to instill the values of science. We can help our students develop curiosity about the world around us, the idea that knowledge is good, that it is wrong to falsify or fabricate data on which knowledge is based and that it is good to keep an open mind tempered by a vigilant level of skepticism (Zeigler, 2009). Values which Charles Berry tells us may be at risk in our society (Berry, 2009).

National, regional, and local organizations have long recognized and supported the need within the scientific community for leadership. Dr. Arden L. Bement, Jr., Director of the National Science Foundation spoke at a symposium on "Leadership and the Eye for Innovation" at Tulane University on March 6,

2009. He commented: "The way I see it, today's leaders—in any sector—must have panoramic vision." (Bement, 2009) In his comments he went on to say that a leader must not only see the present but also keep an eye to the future; to constantly examine the perspective of others whether they be the law makers, the state holders, or the workers (Bement, 2009). As an academy, I believe we can become such a leader for science in our state. We have all the pieces—we have the people, we have the knowledge and expertise, we certainly willing, we but need the plan and then execute it.

In the 2001 Presidential Address, Charles R. Lamb (2001) of Black Hills State University took a look at the academy and its role within the scientific landscape of South Dakota in the 21st Century. Much of what he had to say at the beginning of the millennium holds true almost a decade later. Our state has in fact become increasingly dependent on technology and increased its emphasis on scientific research and activities. The citizens of South Dakota are being asked to make informed decision on socially, environmentally, and economically important issues. The issues faced by our fellow South Dakotans such as alternative energy, bioengineering, and carbon emission reduction are increasingly technical with not all the electorate fully educated on the complexity of such issues. Doug Hansen (2009) told us yesterday how good science can influence policy when politicians and scientists work together. Perhaps there is a way in which the Academy can be part of this process and help educate law makers and voters on issues of interest to us.

The capacity for science in the state has increased through the efforts of our scientific community, our state and local governments, and private organizations. Membership of the Academy includes individuals from other organizations and the private sector. Large and significant grant opportunities such as South Dakota EPSCoR (Experimental Program to Stimulate Competitive Research), NIH BRIN (National Institute of Health Biomedical Research Infrastructure Network), NPURC (Northern Plains Undergraduate Research Center) and grants from Sanford for a science education center have gone a long way to increase the resources available for the scientific community to expand research, develop technology, enrich our teaching of science and provide opportunities for our scientists and students. The Universities and Colleges and their faculty along with citizens and lawmakers have worked hard seeking these opportunities and should be commended on their efforts, dedication, and vision for science in South Dakota. Additionally many of the other local, regional and nationally affiliated organizations which operate in the state provide opportunities. Many of these organizations regularly contribute to the Academy. Most of us know of these opportunities, but are there others out there which can be leveraged by our members and students? Perhaps a repository or clearing house of such information is needed. It may be a chance for the organization to fill a need in terms of facilitating, funneling, and coordinating access to the resources that exist in our state's academies, agencies, and scientific communities.

Charles Lamb (2001) questioned: "[W]hat can the Academy do to help conduct research and improve science education and scientific understanding in South Dakota?" This remains a valid question. In his presidential address to

the Academy, he went on to identify the many activities and ways in which the academy supports and promotes science within the state to include the annual meeting, the work to improve science education, and co-sponsorship of scientific activities. Lamb also identified one area in which clear work was required by the academy to increase our effectiveness—communication—both among the scientific community and throughout South Dakota. I would challenge the membership of the Academy to pick up the torch and continue to move forward in the coming years, letting all know what we can do.

Taking a lesson from the National Academy of Science, I would propose that we as an academy could be to South Dakota some of what the National Academy of Science is to the nation. While we don't have the resources or influence that NAS might have, we can emulate some of their policies and initiatives. NAS is a society of distinguished scholars engaged in scientific research and dedicated to the use of science and technology for the public welfare. The National Academy promotes public understanding of science and has a role to act as advisor to the federal government. The South Dakota Academy of Science is just that for South Dakota. One of SDAS's purposes is to provide a forum for the scientific community so that the interpretation and dissemination of scientific information will result in a better public understanding of science. Many of our members both current and past have worked hard through resolutions and letter writing campaigns to influence the direction science has taken in the state.

The positions of the academy have not always have not always had the influence we would like to see in policy making decisions in the state. This past December, Nels Troelstrup and I had an opportunity to meet with the Presidents of South Dakota State University and Mount Marty College. The President of Mount Marty College had initiated this meeting with the purpose of exploring and informal and informational relationship with the South Dakota Academy of Science. A door has been opened and I believe it is one the Academy should consider entering.

There is a leadership role to be assumed by the academy in the state of South Dakota. As an academy we need to continue to step up and accept that role. My challenge to the membership is help move the academy forward by not just meeting once a year to share our work and discuss our plans. Be an active member throughout the year by recruiting new members, supporting our initiatives and educating the citizens of South Dakota on science issues. Make the Year of Science last beyond December 31, 2009.

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