Exploring Scientific Citizenship:
KU SPS Chapter Report
on the 2008 Sigma Pi Sigma Quadrennial Congress

The KU delegation in front of Fermilab's Wilson Hall: (front) Kristal Feldt, Jessica Snyder; (middle) Chris Bruns, Tyler Conrad, Ezra Huscher, Sarah Reynolds; (back) Dave Schudel, Mark Stockham, Dr. Michael Murray, Ben Vail.

The KU Society of Physics Students & Sigma Pi Sigma chapters were pleased to be able to send a delegation of ten to the 2008 Quadrennial Sigma Pi Sigma Congress, held November 6-8 at the Fermi National Accelerator Laboratory (Fermilab) in Batavia, Illinois. Our group attending was very diverse, with nine students ranging from the early undergraduate to graduate stages of their studies, and faculty advisor Dr. Michael Murray. KU professor Dr. Adrian Melott also attended the congress as an invited speaker.

Planning the trip was an exercise in budgeting, as we tried to maximize the people attending while minimizing cost. We used funding from the department and our previous year's SPS fundraisers in addition to our Chapter Reporter Award from SPS National. We also took advantage of one student's hotel employee discount to get rooms near Fermilab at a reduced rate. Dr. Murray, our faculty advisor, said that the planning of the trip "was a team effort, not unlike a scientific experiment: we used funding from three different sources, collaborated with diverse people, and learned something."

Most of the students attending had never been to Fermilab before, so the conference's location was itself a source of excitement in the group. We enjoyed getting the chance to tour various parts of the campus, and were grateful for Fermilab's gracious hosting of the sudden invasion of students, even with the congress ending up significantly larger than originally expected. KU student attendee Ezra Huscher said, "The quality and diversity of presentations was excellent. Topics ranging from the Higg's boson to gender and race equality in the sciences provided quite a spectrum of information, and for me, made the Congress a fantastic experience." After the congress everyone had stories to share about what they had seen, heard, and learned, and new ambitions for the roles that both science and citizenship might play in their future.

Making Connections: Art and Physics

One of the students attending from KU was Kristal Feldt, a design major with a specialty in metalsmithing, who frequently attends SPS meetings as part of her interest in exploring science through her art. Kristal was

KU student Kristal Feldt sets up her "Particle Decay Series" for the congress art contest.

excited about the chance to go to a scientific meeting with an opportunity for artistic expression, and consulted with other SPS members in designing a piece for the art contest based on particle decay. As a group, we shared in Kristal's enthusiasm for this project and were thrilled that her piece won best in show.

Upon returning to KU, Kristal and fellow congress attendee Sarah Reynolds put together a press release that prompted the university public relations office to post a feature article on the university website about Kristal and her work connecting art and physics (available online at http://www.ku.edu). Kristal has been thrilled with the opportunity this has provided to demonstrate the connections between science and other disciplines. As an artist, she noticed this theme at the congress as well: "During the workshops, there were points of interest and topics of discussion that I've had with my fellow artists – the energy crisis, the teaching of religion in science classes in public schools. I've had the same reactions that the scientists have. I think we're more alike than we think we are."

Experiencing Scientific Citizenship

Scientific citizenship is not without its challenges, as we learned from various speakers and also experienced ourselves in the hands-on democratic approach of the congress. We followed up on the topics presented by various speakers by breaking into small discussion groups, where we experienced first hand the excitement and difficulties of trying to formulate intelligent and practical responses. As scientists, we sometimes found ourselves overstepping our bounds and wanting to re-establish the order of the universe to address certain problems! Enthusiasm was high, but time was short, and it often seemed that we had only just started getting some good ideas when it was time to submit them and move on. But what we gradually realized over the weekend as we experienced this process was that scientific citizenship starts with us. We began to see that our own priorities and practices were what needed to be changed first, and that those changes were well within our own power to make.

The enthusiasm generated by the weekend was especially visible as we gathered to vote on Saturday evening. Students were eager to vote and to see the results of the weekend's discussions as boiled down into decision points. Unfortunately, the technical difficulties of democracy came to the fore, as the clicker system that had been provided for voting became problematic and the vote ultimately had to be postponed to an online survey following the conference. But discussion continued among the attendees as they waited for the situation to be resolved, and there was a palpable sense of disappointment that we would not be able to see the direct results of the voting while there.

A Challenge for the Future

The following plenary talk by Dr. Neal Lane was one of the best of the weekend, as he drew upon his extensive experience with both science and politics to envision an era of civic scientists. Dr. Lane began by providing a historical perspective of how science's role in public policy has developed in the past hundred years, and then addressed the current challenges of an era in which technology has leveled the playing field among global markets. Science -- a crucial part of remaining viable in this playing field -- has faced additional challenges due to

what Dr. Lane described as an imbalance of scientific knowledge and opinion, in a world where ideology and politics intrude "too much" and understanding of science is simply "too little". The remedy that Dr. Lane called for is our engagement. "The nation," he said, "needs many more civic scientists – women and men who can reach across disciplines and sectors and engage the public and politicians."

When asked for specifics of how students can be involved, Dr. Lane advised students to start with their own education: "First, get the very best education you can. Don't jump into policy – get the good education that makes you valuable in policy." Secondly, he encouraged students to "fan out", using their connections and interacting with non-physicists. "Science," Dr. Lane said, "is an activity that should engage all of us in the world, whatever our backgrounds."

KU students Tyler Conrad and Jessica Snyder enjoying their visit to Fermilab for the 2008 Sigma Pi Sigma Quadrennial Congress.

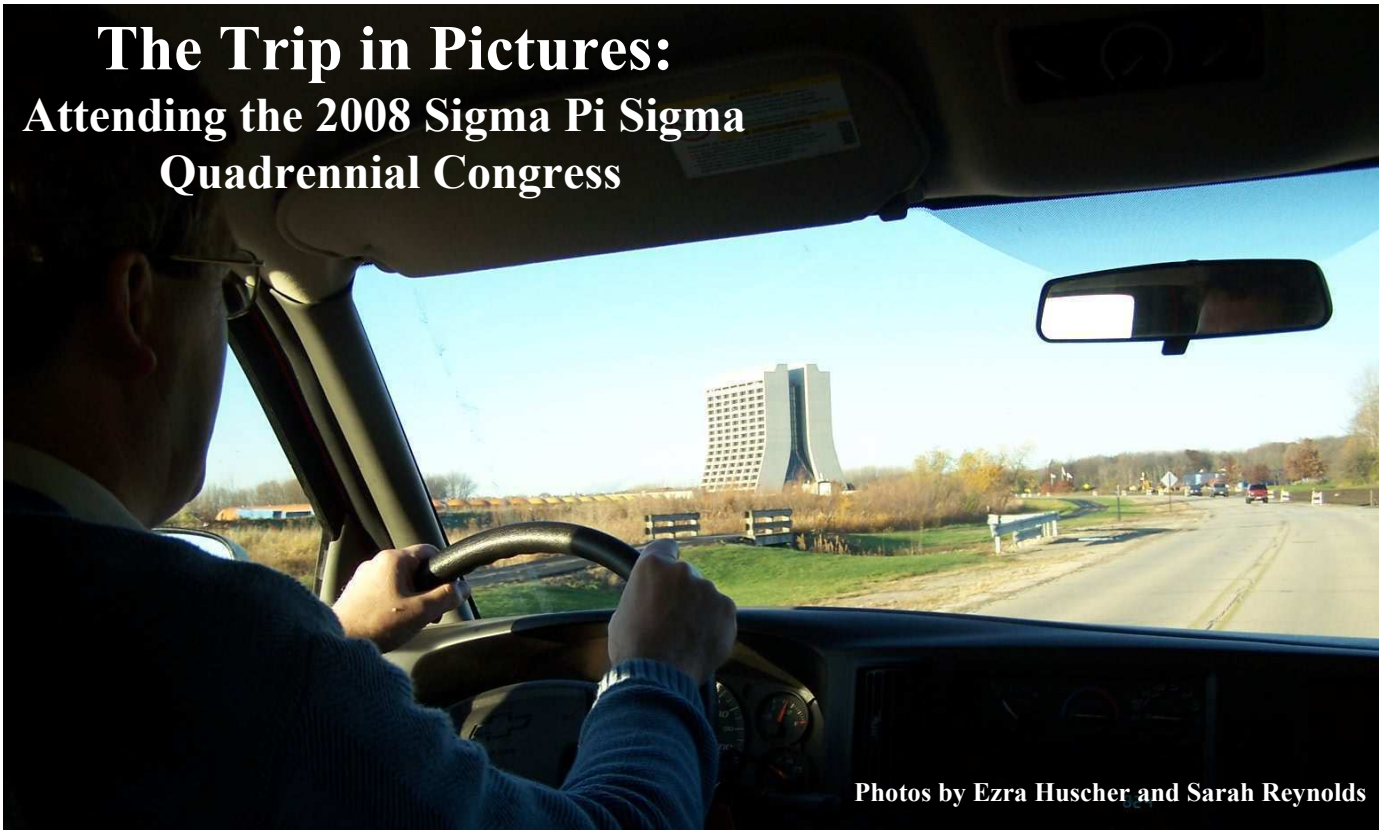
Bringing it Home

When we returned to KU, we used our next SPS meeting to have a roundtable discussion following up on topics from the conference. We shared with each other and with those unable to attend the interesting things we had heard and seen on our tours. We also discussed some of the issues that the conference addressed, and what initiatives we felt we could practically pursue as a campus chapter. Among other things, we are hoping to establish a connection with students interested in science at the Native American university in our town and open a dialogue there. We also decided that as a group we needed more information about issues in science education, and are hoping to have some people working in that area speak at upcoming SPS meetings.

We would like to thank SPS National and the KU Department of Physics and Astronomy for providing us the opportunity to attend the 2008 congress. And to all our fellow congress attendees: we enjoyed meeting you and getting to discover our potential as scientific citizens together!

The KU insignia on the cherry red 12-passenger van we took to the congress.

The Trip in Pictures:
Attending the 2008 Sigma Pi Sigma Quadrennial Congress



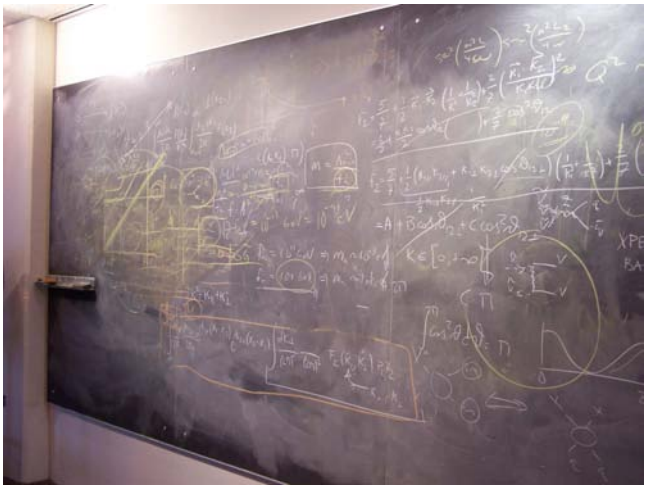
Photos by Ezra Huscher and Sarah Reynolds

Top: Arriving at Wilson Hall

Above: Buses of attendees on their way to Fermilab from the congress hotel

Above right: A view of the iconic Wilson Hall at Fermilab

Lower right: Ramsey Auditorium



Above and below right: Touring in Astrophysics wing of Wilson Hall

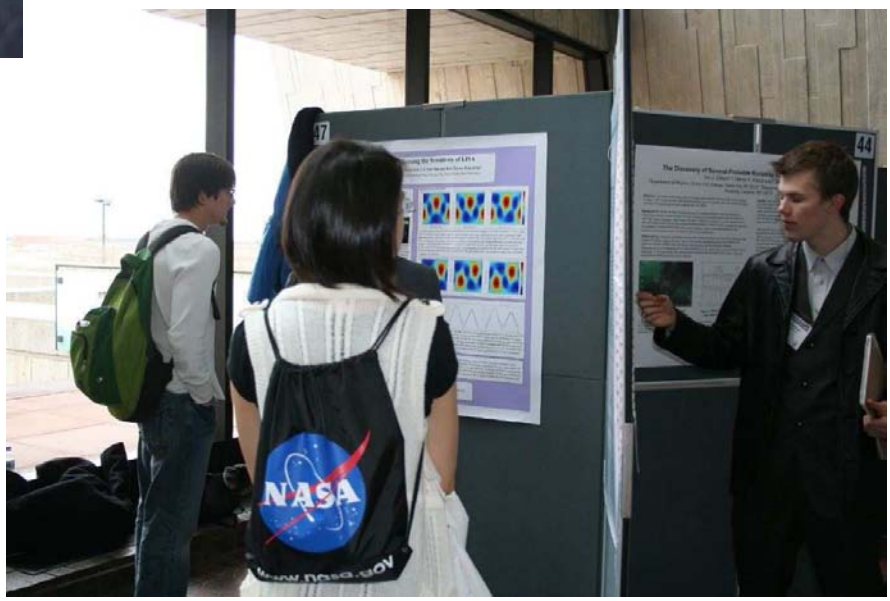
Right: View out windows as buses leave for tours

All: Tour of the Magnet Factory

Above and above right: Out touring

Right: Students at the poster session

Below: Snack time



Right: KU students Ben Vail, Mark Stockham, Ezra Huscher, and Dave Schudel wait for a talk to begin in the auditorium

Right: Plenary talk by Dr. Margaret Murnane

Below: Dinner and evening lecture at the hotel

Above: The art contest in the atrium

Right: Voting with clickers

Below: KU student Mark Stockham at the entrance to Wilson Hall