

## ICPS 2013: Fringe, Physics and Haggis

Having returned from a summer abroad in Germany just one week earlier, I was both excited and a bit exhausted to be boarding a plane for another trans-Atlantic flight to attend the International Conference of Physics Students (ICPS) 2013 in Edinburgh, Scotland. I was very excited to be visiting Scotland after a summer in Germany, not only for the conference, but also because I would be able to understand the language! Another plus was that I would get to miss the first day of school at Auburn University, where I am starting my senior year in physics and music.

I arrived Thursday morning with the other SPS delegate, John Lurie. Fortunately, the conference organizers planned registration all day Thursday, which gave us ample time to explore Edinburgh. I tried haggis with neeps and tatties for the first time for lunch, and I enjoyed the traditional Scottish dish greatly. We were able to see the street performers participating in the annual Fringe festival, which brings amateur and professional comedians together from across the UK and the world to perform in venues all across Edinburgh. Over the course of the conference, John and I were able to climb the Lord Nelson monument, see the Scottish crown jewels in Edinburgh castle and walk the Royal Mile. One of the great things about ICPS is that the organizers often allow for sufficient “tourist time” to allow the conference attendees to explore their city. This greatly contributes to the international aspect of the country by letting attendees explore a new country on top of all the standard physics conference aspects.



A picture of myself overlooking Edinburgh.

I knew that ICPS would be like no other conference I had attended--though I'm a regular at my SPS Zone 6 Meetings and have been to a few other conferences, this was the first conference that I had attended that is completely student operated. ICPS is run by the International Association of Physics Students (IAPS), which does not have a national office like SPS does. In particular, it was very interesting for me to be involved with the IAPS Annual Group Meeting (AGM) on one of the afternoons of the conference. Truly a marathon meeting, lasting over six hours, the AGM is where all the details of the changes to IAPS

regulations and memberships get hashed out, and where the new Executive Committee of IAPS is elected. Having been involved as an officer in my local SPS chapter for the past two years, it was a completely new experience for me to see how a international student organization is run. Perhaps most importantly, though, the AGM is where the location of ICPS two years into the future is decided. This year there were two candidates: Zagreb (the capital of Croatia) and Malta. Ultimately, the AGM elected Zagreb to be the host for ICPS 2016. Though it was a bit long, I did greatly enjoy the experience of seeing how IAPS, a completely student-run organization, works. While not without kinks, by operating by the book IAPS is able to sustain a great organization.

Student talks, the bread and butter of the conference, got underway bright and early on Saturday morning. ICPS student talks feature an eclectic mix of different topics within physics, and the depth of talks ranges from general overviews to talks on specific research projects. There were talks on topics as broad as simulating drug delivery in tumors to how to give an engaging scientific presentation. While most conferences organize talks by subject and group sessions together by putting closely related talks together, ICPS takes a different approach. Instead, talks are organized such that back-to-backs on are from different fields within physics. Because the emphasis of the conference is more on learning than necessarily presenting new results, this serves to keep sessions entertaining and informative.

In addition to student talks, there are invited speaker talks from professors in various fields of physics research. This year's invited speakers talked on subjects from macroscopic control of particulates to the hot topic pervading popular physics, the discovery of the Higgs boson. The talk I was most looking forward to was a quantum optics talk on the angular momentum of light, to be given by Prof. Miles Padgett of the University of Glasgow. However, I was thrown for a loop when the talk of his title read, "3D Computational Imaging with Single-Pixel Detectors." However, I greatly enjoyed the talk he gave, which was on a field of research I knew little about. He showed the physics behind and the engineering of how his lab can create 3D images with single-pixel detectors. These sorts of detectors hold a lot of promise in infrared imaging, where standard cameras cannot operate.



The title slide of Prof. Miles Padgett's talk.

In addition to student and professor physics talks, ICPS also holds a session in which different national physics student organizations (like SPS) give presentations on how their national groups function, called the IAPS Workshop. John and I gave a joint talk on SPS during this session. It was interesting to learn about the similarities and differences between the different groups, and it seems like there is a lot of room to involve more American students in the IAPS effort as a whole. Going the other way, there were several students interested in how easy it would be to get involved with SPS while studying abroad in the U.S. Overall, the session is great venue for information flow between students in involved in different physics organizations.

In addition to my talk on SPS with John, I gave a talk on a proposed method of laser cooling antihydrogen atoms that I spent much of last year working on. The audience was pretty responsive, especially for an early morning during the middle of the conference. The length of the talk was a standard contributed



Giving my talk.

conference length, but it had to be given to budding physicists who were not necessarily familiar with the tools of the antihydrogen trade. It was tricky trying to balance an overview of the last few years of antihydrogen research, which provides the necessary background for understanding my research, with the specific results that I wanted to talk about involving the laser cooling. Overall, though, I was happy with how the presentation went, and it was great opportunity to continue working on my physics presentation skills.

ICPS was a great opportunity to meet new people from many different places over a common topic: physics. I had a great time learning about physics, seeing Edinburgh and talking to people who I otherwise would have never had the chance to meet. ICPS is diverse in everything from people to talk topics, and, as a result, it is a great conference to attend to broaden one's horizons, both physically and geographically.