

# **AMERICAN NUCLEAR SOCIETY**

## **University of Illinois at Urbana-Champaign**



**Samuel Glasstone Award Report**

**May 2012**

# Content

Officers.....	4
Outgoing Board.....	4
Incoming Board.....	4
Statement of Purpose .....	5
Membership.....	6
Future Goals.....	6
Events.....	7
Social .....	7
Semester Kick-off BBQ .....	7
Happy Hour .....	7
Corn Maze .....	7
Soccer Match .....	7
ANS Awards Banquet .....	7
Academic.....	8
Peer Advising.....	8
Admitted Freshmen Day .....	8
Study Snacks.....	8
Fundraising.....	8
Bake Sale – ANS Japan Relief Fund .....	8
EWB Workshop sponsorship.....	8
Career Development.....	8
Company Presentations .....	8
NPRE Interchange .....	9
Alumni Roundtable Discussion .....	9
Trips.....	9
Fermilab with Wisconsin and Purdue .....	9
ANS Student Conference.....	9
Outreach .....	10
E-Night.....	10
Science Demos for SHPE .....	10
Boy Scout merit badge.....	11
Engineering Open House .....	11

EOH Department Promo .....	11
Mom's Weekend .....	12
General Meetings.....	12
Future Plans .....	12
Nuclear Reactor Experiments at MST .....	12
Trip to Oak Ridge National Lab .....	12
Conclusion.....	13

# Officers



## Outgoing Board

<b>President</b>	Valentyn Bykov	bykov1@illinois.edu
<b>Vice-President</b>	Carlos Altamirano	altamir1@illinois.edu
<b>Treasurer</b>	Cody Morrow	morrow3@illinois.edu
<b>Outreach</b>	Robert Geringer	geringe1@illinois.edu
<b>Social</b>	Molly Bilderback	molybdenum96@gmail.com
<b>Communications</b>	Michael Cunningham	cunning2@illinois.edu
<b>Webmaster</b>	Talisa Chambers	talisa.chambers@gmail.com

## Incoming Board

<b>President</b>	Molly Bilderback	molybdenum96@gmail.com
<b>Vice-President</b>	Robert Geringer	geringe1@illinois.edu
<b>Treasurer</b>	Brian Pekron	brian.pekron@gmail.com
<b>Outreach</b>	Kathleen Weichman	kathleenweichman@gmail.com
<b>Social</b>	Kristin Schoemaker	schoema1@illinois.edu
<b>Communications &amp; Webmaster</b>	Michael Cheng	detectivesnipes@gmail.com

Elections take place every year in April. The remainder of the school semester (until mid-May) is a transition period during which both boards coexist at the same time.

# Statement of Purpose

Our ANS section fulfills three main roles, dealing with interaction within the department, enrichment of students' academic experience and relations with outside of the department.

During the first two years our students take general science and engineering classes with students from all the other engineering majors. Since we are a small department, we don't see many fellow nuclear engineers during these two years. Therefore ANS, to which students are exposed to during their first semester introduction class, organizes various social events, providing chances for students to get to know each other better. This also allows underclassmen to meet the upperclassmen, who often pass down various advice based on their experience. This is especially encouraged during the class registration period.

Another area where ANS is active is students' academic experience. We take a lot of engineering classes, most of which are highly technical. It's very difficult to keep in mind the overall big picture. Furthermore during some of the most difficult semesters, we all need to be reminded why we're doing all this in the first place and recharge our motivation. And so our ANS section organizes numerous trips to nuclear power plants and national labs, where students can see what kind of work nuclear engineers can do after they graduate, as well as understand how all these individual components come together, forming the big picture. It's also a good opportunity to get an industry insight on various topics and see what they do differently, what they do the same.

We also make sure to stay in touch with people outside of the department and the nuclear industry, mainly through outreach events. When we ask people what do they think when you say nuclear engineering, we often hear of nuclear weapons, cooling towers and (more often than you'd think) the dangerous health effects of the microwave oven radiation. Our goal is to inform and educate, but also share why we think that industry nuclear is interesting and exciting career choice. We help out and organize several boy scout merit badge events, where young boy scouts learn about the science behind nuclear power, as well as the related career choices. Every March we hold a series of demonstrations and presentations during our university's Engineering Open House, a two day event during which over 20,000 people visit campus to see various engineering demos created by students. We also try to be present during various non-engineering events, for example we have a table next to other student organizations in an event organized during Mom's weekend, where students and their visiting moms can see what various student organizations do on campus. Being usually the only engineering organization present at this event, our interactive demonstration of radiation sources is very popular. Many of the visitors wanted to talk to us about the nature of our organizations, potential careers, details about Fukushima, or nuclear power in general.

Our ANS section simply provides many ways in which to get involved, whether it's getting advice on what class to take next semester, meeting some of the nuclear power plant workers and talking to them about their job, or practicing one's teaching abilities with children or the general public.

One of the important properties of our ANS section is that it's an extension of students. At times various students would have an idea for an interesting event or a trip, and instead of leaving the organization up to the (already very busy) departments, ANS will step in and handle everything. This gives more power to the students, as we can spread the word about the idea and, if there's sufficient interest, organize the whole event without the need for the department to get involved. This also works the other way around, where the department would ask or encourage us to set up an event that would address an issue they often hear in the student feedback forms.

# Membership

There are currently 175 members in our section. For reference the nuclear engineering department at our university has approximately 200 undergraduate and 80 graduate students.

# Future Goals

At this point our membership is composed almost exclusively of nuclear engineering majors, most of whom are undergraduate. One of the long-term goals is to get more people involved, especially from other departments. We believe that the nature of all our trips and many of our other events would be relevant to other departments.

We are also trying to extend our involvement with other departments (i.e. by cooperating with other students organization on joined events) and non-engineering events.

# Events

As was described in the statement of purpose, our section organizes many events aimed at different audiences. This section will outline the various events we have organized (or helped organize) in the 2011-12 academic year.

## Social

These events aim to strength the bonds between students and provide an opportunity for the underclassmen and upperclassmen to interact outside of the academic environment.

### *Semester Kick-off BBQ*

To start off the semester, provide an opportunity for students of all years to meet each other, as well as promote ANS membership, we held a Barbecue at the beginning of the school year.

### *Happy Hour*

In order to facilitate an easy contact between students and the board we have organized several “Happy Hour” events. During these events we would go to a local café and provide appetizers for students. This is a popular way to approach the board with event ideas, or (just before elections) to find out about the different officer positions.



### *Corn Maze*

This year we have organized a visit to a local corn maze, where groups of students competed to navigate through the maze and find all stations in the shortest time. This fun activity develops students’ team work.

### *Soccer Match*

As engineers, we generally find ourselves spending time inside libraries and in front of computer screens. In order to encourage exercise, we have organized a friendly soccer match against another student organization (Illinois Space Society – A society of students for the exploration and development of space)

### *ANS Awards Banquet*

Together with our (nuclear engineering) department we have organize and run the annual Awards Banquet, during which the chosen alumni, faculty and students receive various awards. This is a formal dinner during which we reflect on the achievements of the past year.



## **Academic**

As most of our members are nuclear engineering majors, we also organize several events connected with the curriculum and academics in general.

### *Peer Advising*

As part of our close cooperation with the nuclear engineering department, our section has several times organized peer advising sessions, during which underclassmen can ask upperclassmen about different classes, professors and changes to the academic schedule sequence.

### *Admitted Freshmen Day*

Every year our department organizes the Admitted Freshmen Day, during which next-year freshmen, often accompanied by their parents, are given a chance to talk to current students and ask them questions about the department, classes and future careers. This year our section has been involved with the organization and recruitment of volunteers for this event.

### *Study Snacks*

Twice a semester, during the final exam period, our section brings food to the study lounges, where most of the nuclear engineers usually study. The snacks range from bagels, coffee and juice in the morning hours, to sandwiches and chips in the afternoons. This is very popular among students, as it reduces the amount of time they have to spend away from studying.

## **Fundraising**

### *Bake Sale – ANS Japan Relief Fund*

In October we have organized a bake sale in an attempt to raise money for the ANS Japan Relief Fund. All of the baked goods were made by the ANS members.

### *EWB Workshop sponsorship*

In September the local section of Engineers Without Borders was holding a regional seminar on our campus. Our ANS section has financially contributed.

## **Career Development**

These events are designed to provide our members with an insight into possible future careers and the nuclear industry in general, as well as help them establish contacts with potential employers.

### *Company Presentations*

We have organized approximately ten different talks by various companies, including Bechtel, Exelon, Sargent & Lundy, GE Nuclear, NRC and Sandia national lab. During these talks representatives from the aforementioned companies talk about the careers available, as well as their experiences and impressions. These events were organized with the help of the nuclear engineering department.



### *NPRE Interchange*

Every year on the homecoming weekend our department invites all of their alumni to visit the department and talk to the current students. Our student section has been heavily involved with the organization of this event, which features talks by individual organizations and panel discussions. The attendees included alumni from Exelon, GE Healthcare, GE Nuclear, Sargent & Lundy, NRC, Argonne National Lab, Starfire Industries, and Soladigm.

### *Alumni Roundtable Discussion*

Taking advantage of the fact that many alumni come for the Awards Banquet, we have organized a roundtable discussion with some of the alumni winning department awards this year. This was a truly remarkable experience, as all of these people had extremely interesting careers and many lessons to share.

## **Trips**

### *Fermilab with Wisconsin and Purdue*

Following a discussion that took place on one of the ANS conferences we have established contact with the ANS Student sections in University of Wisconsin – Madison and Purdue. We have planned a joint trip to Fermilab, where had a chance to learn about both current state of particle physics research and the experiences of students from these other universities. Each section brought 15 students. We would like to recognize that Darius Lisowski, president of the UW ANS section, handled all the planning and communication with Fermilab. This event was a huge success, and therefore an agreement was made to repeat such joint visits every year.



### *ANS Student Conference*

This year we have sent a record number of students (twenty) to the ANS Student conference. We have attended many different talks and overall had a very enjoyable time.

## Outreach

Outreach is a very important focus for our section. We make sure to schedule outreach events for various audiences.

### *E-Night*

At the beginning of this academic year we have participated in the university-organized engineering event called E-Night, during which the engineering student organizations are encouraged to set up a table on the engineering quad and recruit members. This year was very successful for us, as approximately 50 people signed up to our mailing list with an intention of participating in future activities.



### *Science Demos for SHPE*

In a joint effort with the local section of SHPE (Society of Hispanic Professional Engineers) we have organized a series of science demonstrations for high school students. SHPE was in charge of bringing in the students, our section was responsible for the actual presentation. The demonstrations were very visual and exciting, and so the high-schoolers enjoyed them a lot.



### *Boy Scout merit badge*

Together with members of the regional (non-student) ANS section, we have run a boy scout merit badge event, during which more than 40 boy scouts received the nuclear badge.

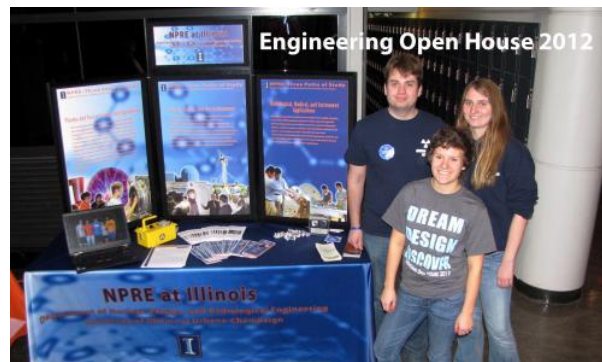


### *Engineering Open House*

Every year our university organizes a two day large scale outreach event called “Engineering Open House,” during which engineering departments and student organizations set up tables with various science demonstrations. Many of the nearby schools and parents bring students to this event. This year the attendance exceeded 20,000 people. Our section has organized a series of demonstrations in a large lecture room, which demonstrate various concepts related to the nuclear industry. These demos are then connected together via a presentation that tells people more about nuclear power. This year more than a thousand visitors visited our exhibit.

### *EOH Department Promo*

Except for presenting about the nuclear industry as a whole, we have also this year organized a separate booth dedicated to talking to students interested in studying nuclear engineering here at our university. This effort, supported by our department, reached out to many high school students. Furthermore we have talked to many current students, interested in joining ANS.



### *Mom's Weekend*

On April 20<sup>th</sup> the University begins celebrating “Mom’s weekend” – a three day event which aims to honor moms of students. As part of this celebration, the university organizes an event called “Explore Illinois,” during which student organizations are encouraged to talk to visiting moms about the nature of the organization. Many of the visitors talked to us about things beyond our organization, like the impact of Fukushima or the nuclear industry in general. Being the only technical organization at this event, our interactive demonstration of radiation sources was very popular.

### **General Meetings**

Approximately every month we organize a general meeting, during which we announce upcoming events and plans. We also generally bring in speakers to talk about a topic related to the nuclear industry. This year we had presentations by Prof. David Ruzic about some of the ongoing projects in plasma research, Prof. William Roy about underground movement of radionuclides and related research, as well as various speakers from the industry.

### **Future Plans**

#### *Nuclear Reactor Experiments at MST*

We are currently in contact with the ANS sections in Missouri University of Science and Technology. Their campus still has a reactor, while ours is currently being decommissioned. Therefore in order to provide our students with this unique experience of controlling a research reactor, we are planning to take several of our students to MST and perform an experience, similar to the experiment their undergraduates do (approach to criticality, etc.).

#### *Trip to Oak Ridge National Lab*

In the past we have organized many trips to Argonne National Lab. This year we visited Fermilab. Next year we are planning to expand this list by going to the Oak Ridge National Lab.

# Conclusion

While both our department and our student section are very small, we stay busy. We try to organize many events, for students as well as the general public, aiming to spread the knowledge about the nuclear industry. We believe that we have managed to accomplish a great deal with the resources at our disposal. Furthermore, our section has continued to grow and now encompasses more than 80% of the undergraduate students. By now our section has settled into an important role that extent the ability of students to organize events and visits, as well as helps out the department with the burden of organization.