

PENN STATE NUCLEAR ENGINEERING SOCIETY

MEETING MINUTES – APRIL 13, 2013 – PSNES Annual Meeting

Participants:

PSNES Officers & Board Participants

Rick Etling – President
Jim Stavely – VP / President Elect
Pat Loftus – Former President
Ron Brown – Secretary / Treasurer – via telecon
Arthur Motta – Ex-Officio NE Program Chair (with vote)
Kenan Ünlü – Board (RSEC Director / Faculty Representative)
Catherine Perego – ANS Student Section President

PSNES Directors

Ed Klevans
Joe Sholtis
James Stover
Doug Wood

PSNES Members / Other:

Eric Beaumont (Director Elect)
Dr. Jack Brenizer (attended part-time)
Sue Hochreiter
Duane Karchner (Director Elect)
Hilary Neal (Director Elect)
Michael Pantano (Director Elect)
Tom Richard (Secretary / Treasurer Elect)
David Sholtis – guest of Joe Sholtis

OPENING

Arthur Motta began the meeting at 9:00 AM by welcoming everyone in celebrating the 10th anniversary of PSNES. The meeting was started with round table introductions by each person present at the meeting.

Rick Etling called the meeting to order, made a roll call, and confirmed a quorum to conduct business.

OLD BUSINESS

The minutes from the previous business meeting of November 15, 2012, are approved.

Financial Report:

The account balance for the PSNES General Fund Account Balance was last noted to be \$2,897.26. The current balance of the general fund should be approximately the same, but **the balance needs to be updated to reflect the current amount.** Tory Fryer has left the department. The financial report and balance information will continue to be handled by her replacement.

\$500 was transferred from the General Fund to the Awards Fund to cover the PSNES Leadership & Service Award. The Awards Fund should still be \$200 following last year's awards and new contributions. **This balance needs to be updated / confirmed.**

Nuclear Engineering Student Networking & Mentoring Program Feedback:

Joe Sholtis had one mentee reach out to him. The best way to get students involved is by word-of-mouth and talking about the program in order to let students know that the mentoring program is actually used by students.

The mentoring has been more networking-based, where there are one-time meetings when students are looking for a job.

Rick Etling and Dr. Motta have both sponsored letters in order to get students more involved. Currently, 10% of the students have participated.

Every year, the results are fairly the same: only a handful of students each year. The nuclear engineering classes used to be smaller. However, now there are 100 students in Junior year of the NucE program, where the professors do not know each student personally.

Dr. Motta suggests that mentors volunteer, and have students randomly assigned to mentors in their Junior year. This allows the students to become familiar with the mentoring program. Mentors can be changed for a better fit at a later time. However, the hardest step – getting the students to initially participate – would be addressed.

Rick Etling asks if society members would be willing to accept 10 students randomly assigned to you, with the expectation that only 2 or 3 students would accept. The mentoring program would continue to remain confidential, and let the students dictate the relationship.

Eric Beaumont suggested whether there should be a “networking board”? Networks are great, but we need someone to be able to manage the networking.

In the spirit of spreading the word, the mentoring program and concept should be explained at the ANS Student meeting.

Jim Stavely suggested that the first ANS Student meeting in September would be a great time to give testimony. Are there any other meetings or programs that would provide a good opportunity to speak about the mentoring program?

Joe Sholtis suggested that the students should be given the option of either choosing a mentor or being assigned a mentor. Both of these options should be open.

Doug Wood stated that, as a board member, he would be willing to email 10 random students in order to see if any students would be interested.

Jim Stavely suggested that a group mentoring situation may work better. For example, a group of students and a mentor could meet at the Corner Room over a meal?

Rick Etling says there are mainly two options: Board members volunteer their name to be a mentor. Or, make it mandatory for Board Members to be mentors. A vote was taken, and everyone in attendance would be willing to mentor.

Pat Loftus stated that a referral from the department/program would help. Maybe Professors could refer students to specific board members?

PSNES Website Update:

The recent update of the new MNE website has made everything more accessible, and it includes more information. The update is in the process of having faculty update their webpages.

The department is looking to find a replacement for Tory Fryer. The responsibilities for her position included performing the website updates and following the financials. The job responsibilities have become larger as of late with the increase of website and social media updates. By next meeting, the department should have a replacement in place.

End of old business.

NEW BUSINESS

Program and Department Update:

Dr. Motta reported that the NucE faculty are doing very well. Dr. Seungjin Kim and Dr. Cheung have an NRC grant and funding for FY2013 (“Experiments for Development of TRACE with Interfacial Area Transport Models”). Dr. Motta and Dr. Fratoni are performing research to develop coating for nuclear fuel rods through the U.S. Department of Energy’s Nuclear Energy University Programs (NEUP). The study (“Fundamental Studies of the Role of Grain Boundaries on Uniform Corrosion of Advanced Reactor Materials”) uses state-of-the-art experimental techniques to understand the fundamentals of corrosion protectiveness of alloys used for nuclear fuel cladding, with the aim of designing improved alloys for extended service.

Dr. Motta reported that hiring season has not ended yet. Mechanical professors are being looked for (possibly 2 positions). 365 students are entering their Junior year in Mechanical Engineering this year. The MNE department has grown recently and is stretching the resources a bit.

Rick Etling discussed the role of the nuclear power advisory board, which helps advise Dr. Thole and Dr. Motta on strategy plans. Industry input is always welcome to the advisory board.

Dr. Motta reported that the department is going through the ABET process right now, or fairly soon, and will be on-going through the next year.

Dr. Motta reported that the southern part of the Reber Building will be going through a renovation in order to make a large NucE student center and lounge on the first floor. This will start sometime next year.

Dr. Motta reported on the student projects, which are done by the senior year NucE students. Back when the NucE department had 30-40 students, the program mainly did Westinghouse projects. Now, with so many more students, Dr. Seungjin Kim and Dr. Jack Brenizer are teaching their own project courses. FENOC, PPL, Holtec, Exelon, and the NRC have helped with industry sponsorships of the projects with the students. The projects provide very good learning environments to develop professional communication, report writing, and presentation skills. Furthermore, the projects are now open-ended in order to provide a positive challenge, as opposed to mainly core design optimization projects.

Joe Sholtis started a conversation on hiring and the job market for this year’s students. This year the job market and hiring has slowed down, and is going as well as in the recent past. However, the retiring wave is about to begin, and the economy is starting to recover. It was suggested, as a reminder, to make sure to keep track of where students go for work and where they are being hired.

Dr. Motta reported that Enrollment is down this year for freshman at Penn State, due purely to demographics.

Catherine Perego started a discussion on GPA requirements for declaring a major in NucE. It was noted that some students have taken issue with undergraduate students not needing a 3.0 GPA in order to declare as a major in NucE. The department and college of engineering have noticed that many students who do not have a 3.0 GPA see Nuclear Engineering as a great option when it comes to declaring in their Junior year. The department has tried to change this, but it got voted down by the engineering board.

Dr. Klevans noted that David Wormley, Dean of the College of Engineering, is retiring this summer. The process for screening candidates has just started. There are candidates both internal and external, as the university is conducting a national search for candidates.

RSEC Update:

Dr. Ünlü reported on the RSEC updates. 3 years ago, the department received \$2M from the U.S. DOE. This program with the DOE was able to convince University to renovate two buildings that were originally built in 1965. In addition to the DOE grant, the University invested \$5.5M. The first phase of the building renovation focused on the infrastructure of the buildings (included things such as the sprinkler system, elevator, etc.) The second phase start with the Cobalt source area/bay. These parts of the project made up the physical improvements of the buildings.

Dr. Ünlü reported that the National Nuclear Security Administration (NNSA) surveyed the entire nation, and chose 3 programs that they felt will succeed with Nuclear Security. The 3 programs chosen were at PSU, MIT, and Texas A&M. PSU can be a world-leader in nuclear security. The IAEA is also very interested in nuclear security, but action is needed to become a leader in nuclear security. PSU received \$2.8M, out of the total \$6.5M awarded by the NNSA. The NNSA program is focused on 5 areas. All 3 schools were to develop classes and share the material with each other. Currently, all of the class development is completed. PSU developed the area of Source & Detective Technologies. MIT and Texas A&M developed and shared classes 1, 4, and 5. After 2014, PSU will teach all 5 areas. Currently, the program is in the pilot phase, where each university teaches their first cycle of their own classes. Afterwards, the classes will be shared such that each university will be able to teach in all 5 areas. Each university is going to permanently catalog the nuclear security courses in their curriculum. Beyond 2014, the DOE is going to fund PSU, and other schools, to develop further classes for the school's expertise in nuclear security, and eventually the development of textbooks.

Dr. Ünlü developed 800 slides for Source & Detective Technology. Visitors from the IAEA and NRC were very impressed.

Pat Loftus started a discussion about possibly creating a unique credential or certificate to make PSU stand out in Nuclear Security. Certification could be a significant advantage, since companies will usually pay for Certificates or MEng degrees, but are not as

supportive of one-time classes. Dr. Ünlü reported Dean Wormley said Nuclear Security is a big deal right now. However, in 10 years, will it still be that way? Students will get a MS in Nuclear Engineering, and will get some recognition for the Nuclear Security. Furthermore, there is no doubt that a lot of people would want to take these courses through World Campus.

Recently, MIT picked fission, fusion, and nuclear security as three main areas of their nuclear program. Funding will continue to come from the DOE for nuclear security. Rick Etling stated that Obama's new budget had Nuclear Security as a priority. Joe Sholtis mentioned that more funds could be pursued from the Department of Homeland Security.

Rick Etling suggested that PSNES members make people aware of online classes dealing with nuclear security.

Pat Loftus and Jim Stavely emphasized that increasing security is receiving considerable management attention, and consuming increasing amounts of nuclear generation budgets.

Dr. Ünlü stated that the top-level personnel at the NNSA are mainly people with social science (political, law) backgrounds. People with a technical background in Nuclear Security are a main strategic development initiative.

Dr. Ünlü reported on Radiochemistry, where they have recently hired Dr. Amanda Johnsen as a research associate. She has a radiochemistry background with nuclear engineering degrees from MIT and U.C. Berkeley. Radiochemistry enrollment dropped in the late 1970s or early 80s, as a result of the federal government reducing funding. Radiochemistry is now on a bit of a comeback.

Break 10:20 – 10:30 am.

Student Focus Area – Co-Ops and Internships:

Pat Loftus asked how the co-op and internship recruiting is going with the students.

Catherine Perego stated that Dominion came to the student ANS meeting, and were looking for Co-op students. However, the PSU program does not really allow for a co-op program. Dominion has a good relationship with PSU. Chris Wells and Todd Flowers were on campus for Dominion.

It was suggested that Sophomores should also go to the co-op and internship recruiting sessions. This year, if the department talks to Juniors and Seniors about co-ops, it will not do any good as it is too late to start involvement. In general, it is a challenge for PSU students to do a co-op because some classes are only offered once during a specific academic calendar year.

Duane Karchner stated that PPL does not require 6 month co-ops. Furthermore, last season there were 31 interns at PPL-Susquehanna.

Rick Etling stated that Westinghouse had 180 interns. Internships are a good tool for the hiring process.

It was agreed that it could not hurt to get the word out to Sophomores, however the students will not necessarily be identified as NucE majors as Sophomores.

ANS Student Conference:

Catherine Perego reported on the ANS Student conference, and how well the PSU students did at the conference.

PSU took 31 students to the ANS National Student conference at MIT. 28 of the students presented at the conference. There were a total of 21 PSU papers at the conference, as some students paired-up. Only MIT, the host of the conference, had more papers. Iowa was third.

Furthermore, PSU received 8 awards of the 25 total. Dr. Fratoni worked as the ANS Student conference advisor, in order to get the presentations going. Dr. Fratoni also went with the students to the conference in Boston.

Catherine Perego reported that PSU was awarded the ANS National Student conference for next year (2014). The NucE program did a great job working towards this nomination. A well-coordinated paper for the nomination proposal was developed throughout the year. Dr. Motta reported that he reviewed the report, and it was very professional. The theme for the student conference will be "iNUC – innovations in new nuclear technology". This theme was chosen to help move beyond the Nuclear Renaissance theme. The ANS National Student conference will be held on April 3rd-5th, 2014. Sponsorship packets will be coming out in June and July.

The awards received by PSU students at the ANS National Student conference (2013):

- Matt Wolfson – Best Undergrad Presentation in Fuel Cycle and Waste Mgmt
- Amanda Majcher – Best Undergrad Presentation in Material Science & Tech
- Dan Abercrombie – Best Presentation in Accelerator Applications
- Matt Block – Best Presentation in Radiation Protection & Shielding
- Mike Riley – Best Graduate Presentation in Thermal Hydraulics
- Valerie Fudurich & Nancy Sinha – Best Presentation in Isotopes and Radiation
- Phyllis Ko – Best Graduate Presentation in Detection & Measurements
- Erica Quarrick – Most Unique Poster

Regards to Karen Bobkowski, Matt Wargon, and everyone else who helped write the bid for the ANS National Student Conference 2014.

For the 2014 student conference, PSU should expect approximately 700 people - or possibly even 750 (including industry people) for the conference. Students are receiving class credits for helping with activities associated with running the student conference.

PSEAS Update:

Jim Stavely reported on the Penn State Engineering Alumni Society (PSEAS). Recently, there was a “City of Lights” activity at Penn State.

PSEAS has been focusing on outreach with new students. Facebook and LinkedIn were started to develop a PSEAS social media presence. However, these social media outlets were not a magic bullet.

It was noted that a lot of PSEAS activities require people to be living in State College in order to participate effectively. The society has 1,000 members, but only 15 people are currently actively participating. With regards to PSNES, the focus should be to get board members with an interest and commitment to help. Commitment is most important.

PSNES Awards Program:

Rick Etling reported on the PSNES awards program.

There were two awards given out this year at the senior banquet.

The John J. Brennan Excellence in Nuclear Engineering Award (recognizes an undergraduate student in the nuclear engineering program for academic excellence) was received by Alex Punzi.

The PSNES Leadership & Service Award in Nuclear Engineering (recognizes an undergraduate student in nuclear engineering who has demonstrated the highest degree of excellence in leadership and service) was given to Timothy Jacomb-Hood.

Jim Tusar has been doing the work for the awards process. Don Lenze has proposed wording changes to the selection process.

Pat Loftus will be endowing the PSNES Leadership & Service Award. Endowment for the Leadership & Service Award is in progress.

PSNES is not off-the-hook when the award is endowed in the future. PSNES will still have a role if they want to. PSNES can choose to not be involved, but it would have to change the charter. Doug Wood started a conversation on how long PSNES is supposed to support the award until it is fully endowed. Rick Etling stated that PSNES will continue to step-up and provide funding. Pat Loftus stated that the award is \$1,000 per year. PSNES would have to provide \$1,000 this fall.

Social Media:

Hilary Neal reported new ideas for PSNES’ involvement with social media. It was recommended that LinkedIn would be better than Facebook, since the profiles are professional based. This would encourage students to network on LinkedIn, without having to mix Facebook or other personal social media profiles with PSNES. It was agreed that LinkedIn would be more beneficial for students and PSNES members in a

professional setting, and would also allow for easier set-up, as the Facebook page would have to be co-developed with the Department.

Furthermore, LinkedIn has easy-to-use group-managing tools for building a PSNES group network. **Hilary Neal took an action item to start the LinkedIn PSNES group, and will be the primary administrator in order to create the group.** She has a high involvement with Facebook and social media outreach with NA-YGN. Jim Stavely stated that PSEAS could provide more involvement with the PSNES social media outreach.

2013 BOARD ELECTION RESULTS

Jim Stavely reported on the 2013 board election results.

Board members with expiring terms were thanked for their involvement and leadership:

Ron Brown (Secretary / Treasurer)	Pat Loftus (Past President)
Rick Etling (President)	Jim Stavely (VP / President Elect)
Dick Gill (Director)	James Stover (Director)
Ed Klevans (Director)	Doug Wood (Director)

2013 election results, including 6 At-Large Directors:

John Atchison (Director)	Michael Pantano (Director)
Eric Beaumont (Director)	Tom Richard (Secretary / Treasurer)
Duane Karchner (Director)	James Stover (VP / President Elect)
Hilary Neal (Director)	Doug Wood (Director)

Continuing board members:

Rick Etling (Past President)	Jim Stavely (President)
Rachel Heath (Director)	Jim Tusar (Director)
Joe Sholtis (Director)	

Founding members of PSNES were recognized:

Jack Brenizer	Pat Loftus
Jeff Jeffries	Len Pasquini
Ed Klevans	

PSU NEWS & EVENTS ROUNDTABLE

Rick Etling reported on upcoming events and meetings.

2014 ANS National Student conference will be held at PSU on April 3rd-5th.

The next PSNES annual meeting date is tentatively scheduled for April 5th, 2014, in order to build around the ANS Student conference.

The 3rd Quarter PSNES meeting will be held via teleconference in the August / September timeframe.

Coordination of students for the ANS Winter Meeting (November 2013) is being looked into.

Lawrence E. Hochreiter Distinguished Lecture Series:

Each year the lecture series will bring two distinguished speakers to campus from universities, government agencies, or industry. In the past, the speakers have been Aris Candris (Westinghouse), Alan Hanson (Areva), John C. Luxat (McMaster University), George Apostolakis (NRC), Brian Wirth (University of Tennessee), and William Magwood (NRC). **PSNES Board members should send recommendations for the Hochreiter Distinguished Lecture Series to Dr. Motta.**

Dr. Motta is setting-up the fall schedule right now for the weekly NucE seminars, and speaker recommendations can be sent to him or Dr. Igor Jovanovic. The weekly NucE seminars are Thursdays @ 4pm. The seminars can be streamed from the web through Angel. Live webstreams are not available, but are posted shortly afterwards on Angel.

Hilary Neal started a discussion about Coursera and massively open online classes (MOOCs). Coursera is a company that is providing free college-level classes online. Pitt is offering an online course. Larry Foulke is teaching a nuclear engineering FYS (first year seminar) online. Catherine Perego stated that only a Teach Assistant at PSU is required in order to take Foulke's FYS course. The work-load for the course is equivalent to 1.5 credits.

Joe Sholtis reported that PSU is on Mars. A nuclear powered propulsion device containing a PSU sticker/decal landed on Mars. Lockheed Martin produced the box.

Dr. Motta reported that Jim Tusar was honored this past week with the NucE OEA (Outstanding Engineering Alumnus) Award.

The Nuclear Power Advisory Board meets bi-annually with Dr. Thole and Dr. Motta. Companies from around the industry, such as PSEG and Exelon, meet with the board.

Turn-over to New Officers and Board Members:

Rick Etling officially turned the gavel over to Jim Stavely and the new board.

The meeting was adjourned at 11:30 am.

RSEC Tour:

Following the meeting, Dr. Ünlü conducted a tour of the RSEC for interested meeting attendees.

Time Capsule:

After the Annual Meeting, there was a discussion about the Time Capsule. The Time Capsule will be kept open for another year. This will allow for the Time Capsule to be debuted in the new Student Area Center in Reber. Joe Sholtis was hoping that a complete list of all faculty, staff, and students associated with the PSU Nuclear Engineering Program could be put in the time capsule. Joe asked Catherine Perego to challenge the **ANS Student Section to take this on, as well as to help identify & locate items for encapsulation in a year.** Dr. Klevans has offered to assist also. The main focus of the Time Capsule should be more on great, historic items. Time Capsule items are to be sent to Dr. Motta.