

2013-2014

Glasstone Report



2013-2014 Board of Governors
Matt Zimmer, President
Spencer Scott, Vice President
Ryan Magruder, Secretary
Angela Kawai Chan, Treasurer
Faculty Advisor: Dr. Peter Caracappa



Contents

| | |
|--|---|
| Introduction | 4 |
| Administrative Updates | 5 |
| Recruitment and Membership..... | 5 |
| Section Bylaws and Rules Update..... | 5 |
| Board of Governors..... | 5 |
| General Body Meetings and Technical Seminars..... | 6 |
| RPI ANS Homework Help | 6 |
| RPI ANS Technical Seminar: Dr. Tom Haley | 6 |
| RPI ANS Technical Seminar: Dr. Jason Thompson..... | 6 |
| RPI ANS Technical Seminar: Dr. Julie Ezold..... | 6 |
| RPI ANS Technical Seminar: Dr. Yaron Danon..... | 7 |
| RPI ANS Navy Speakers | 7 |
| RPI HASS Movie Showing: Pandora’s Promise | 7 |
| RPI MANE Technical Seminar: Dr. Richard Lester, MIT, <i>Innovation and the Future of Nuclear Power</i> .. | 7 |
| RPI ANS Technical Seminar: Julie Turcotte | 7 |
| RPI ANS Technical Seminar: Dr. Michael Z. Podowski | 7 |
| RPI ANS Presentation: Amanda Youmans..... | 8 |
| RPI ANS Workshop: An Introduction to LaTeX by Andrew Pavlou | 8 |
| RPI ANS Technical Seminar: Dr. Jim Napolitano | 8 |
| RPI Technical Seminar: Janice Dunn Lee, “60 years of Atoms for Peace” | 8 |
| RPI MANE Technical Seminar: Dr. Sukesh Aghara, U Mass Lowell, <i>Space Radiation Shielding and Protection</i> | 8 |
| RPI ANS Technical Seminar: Dr. Sastry Sreepada..... | 8 |
| RPI ANS Workshop: An Introduction to C++, Chris Morrison | 9 |
| RPI ANS Resume Critique | 9 |
| RPI ANS Technical Seminar: Dr. Emily Liu | 9 |
| RPI MANE Technical Seminar: Dr. Karl Van Bibber, UC Berkeley, <i>A Physicist Walks on the Dark Side</i> | 9 |
| RPI MANE Technical Seminar: Dr. Fei Gao, PNNL, <i>Materials Behavior under Extreme Condition: Multi-scale Computer Simulations</i> | 9 |
| RPI MANE Technical Seminar: Dr. Avneet Sood, LANL, <i>Lessons Learned from Direct Calculation of Measured Observables in a Multiplying Sub-Critical System</i> | 9 |



| | |
|---|----|
| RPI MANE Technical Seminar: Dr. David Hayes, LANL, <i>Nuclear Engineering Research and Development Capabilities and Opportunities at Los Alamos National Laboratory</i> | 9 |
| RPI ANS Technical Seminar: Dr. Peter Caracappa | 10 |
| RPI ANS Field Trip: Vermont Yankee Nuclear Reactor | 10 |
| RPI and NENY ANS Seminar: Gwyneth Cravens | 10 |
| Professional Relations Committee | 10 |
| Institute Relations Committee | 10 |
| RPI Activities Fair | 11 |
| RPI Medalist Day | 11 |
| Faculty Student Mixer | 11 |
| Outreach Committee | 11 |
| Nicholas Thompson, <i>An Overview of Nuclear Power and Other Energy Sources, Post Fukushima</i> | 11 |
| Boy Scout Talk, <i>Overview of Nuclear Science and Radiation</i> | 11 |
| Young Professionals Congress Meeting with Representative Chris Gibson | 11 |
| Meeting with Representative Paul Tonko and Citizen’s Climate Lobby | 11 |
| Nicholas Thompson, Eagle Scouts and a “Pandora’s Promise” Screening | 12 |
| Exploring Engineering Day | 12 |
| Nuclear Science Boy Scout Merit Badge | 12 |
| Social Committee | 13 |
| Biweekly Bowling | 13 |
| Intramural Sports | 13 |
| Apple Picking | 14 |
| Relay for Life | 14 |
| RPI ANS Holiday Party and Potluck | 14 |
| Conference Committee | 14 |
| Graduate and Alumni Relations Committee | 14 |
| Invited Presentations Series | 14 |
| Ongoing Activities | 15 |
| Section Accomplishments | 15 |
| Conferences | 15 |
| Conclusion | 16 |



Introduction

Being established in 1964 this year marked the 50th anniversary of the Student Section of the Rensselaer Polytechnic Institute American Nuclear Society. In these 50 years the Section has developed into an integral piece of the Nuclear Engineering Program and a significant contributor to the betterment of the RPI Mechanical, Aerospace, and Nuclear Engineering (MANE) Department as well as the local community as a whole. The goals of the Section are 1) continually support the nuclear community through increased awareness by public education, 2) to support the Section by providing opportunities of employment, research, and furthering knowledge in the nuclear field, 3) to increase communication between the Section, faculty, and department, and 4) create an atmosphere of a true community through networking and social activity. On this landmark year the Section strived to meet these goals by working with the school, other local ANS sections such as NENY, and inviting more professionals than ever to speak with the Section members.

This year marked an unprecedented number of technical talks hosted by the Section. Twelve speakers from industry and/or organizations visited between which there existed a great diversity. The industry professionals ranged from a recent RPI graduate working in health physics at Massachusetts General Hospital to the highly experienced Chief Technology Officer of Areva, Dr. Finis Southworth, to an Oak Ridge National Laboratory Cf-252 production expert. These speakers also provided avenues for students to discuss employment as many of the speakers mentioned internships and jobs being offered. With this large number of industry professionals visiting RPI it was possible for the Section to improve its critical relationship with industry.

Seven professors also visited the section in order to discuss their research and provide possible employment opportunities to the members. Amongst these professors, six were from the Nuclear Engineering program and one was from the Physics department, therefore furthering ANS's relationship within RPI. This also allows for the professors to meet ambitious students and encourage them to actively strive for a strong college education.

The Section also hosted three student speakers in order to encourage its members to reach the section's goals by being dedicated members. These talks and workshops allowed students to prepare for upcoming conference presentations as well as provide learning opportunities for members who wished to adopt a new skill such as LaTeX or C++.

With the recent attainment of a list of Nuclear alumni's contact information it was possible for the Section to keep in touch with its recent graduates and learn about their career, invite them to speak, and even ask for funding to help support the Section. With this record the club has improved its network within industry and graduate level schools and can work with a larger reach hand now.

The Section works on its goals through its six standing committees: Professional Relations, Institute Relations, Outreach, Social, Graduate and Alumni Relations, and Conference. With these six committees, and the members that make up them, the Section has been able to do some excellent work throughout the year.



Administrative Updates

Recruitment and Membership

The RPI ANS Student Section continually seeks to include the freshmen class into the chapter. Information on the activities and benefits of the organization were presented to the class via emails and in class presentations. This included opportunities for homework help, networking with professors and members of the industry, tours of relevant facilities and community service projects. 14 new students were excited by these organization goals and began attending meetings. The average meeting attendance over the course of the year given biweekly General Body Meetings was 19 students with a maximum of 35 students present on one date. Attendance fell after the initial meeting similar to previous years. This is likely due to schedule conflicts and changes of majors.

While it is always beneficial to have freshmen join the chapter, only a small portion of the class population typically participates. The nuclear engineering program at Rensselaer recommends students take a survey class for their prospective major their first semester alongside general courses. It is not until the sophomore year that in depth nuclear courses are taken. Thus, until more rigorous and relevant course work is assigned, students usually do not feel the need to join a professional society. As a result, often times the chapter population is dominated by upperclassmen and graduate students. An effort is being made to even out this distribution by having freshmen and sophomores attend meetings on a minimum of a semi-regular basis.

On the whole, members of the student section enjoy the time spent working with the other members. Long lasting friendships are formed regularly with social events being planned on an impromptu basis. This positively affects any important projects that need to be done since a level of trust and communication is often already established. It is common for alumni to continue this connection even several years after graduation. As a result, trips to their various work sites are welcomed. This extends to professional networking connections and provides a positive impression of the program.

Section Bylaws and Rules Update

No changes were made to the Section Bylaws and Rules. Changes to these documents have not been necessary since Spring 2011 wherein the Student Section agreed to include the Conference Committee as an official committee.

Board of Governors

General Body Meetings were held every other Thursday at 8:00pm to discuss upcoming and previous events. All of the executive board attends these meetings to ensure that all aspects of the organization are being well run. Communication between members is important and encouraged between all levels of membership. This way, no ideas are discouraged and underclassman can become immediately involved.



The 2013-2014 Board of Governors consisted of President Matthew Zimmer (Class of 2015), Vice President Spencer Scott (Ph.D. Student), Secretary Ryan Magruder (Class of 2014) and Treasurer Angela Chan (Class of 2014). Elections for next year's Board of Governors will be held on Thursday, May 1st.

General Body Meetings and Technical Seminars

A general body meeting normally consists of section business, such as discussing conference plans, followed by announcements and committee updates. The meeting will then end with a talk given by the guest speaker. This year one of the goals of the Board of Governors was to increase the outreach to the general community. As such, during the twice monthly General Body meetings, some time was spent planning and discussing future events that could educate the public on nuclear power. Another goal was to increase the membership's knowledge of the nuclear field, and so, as mentioned, a series of technical seminars was delivered by people in industry, people of academia, and current students. The RPI ANS Section is very fortunate to have close ties to the NENY ANS Section, which over the past year hosted many talks in which the RPI ANS section was invited, as well as co-hosting multiple talks with the RPI ANS Section. Below is an overview of most of the General Body meetings, jointly hosted events, and technical seminars which were offered to the RPI ANS Section members over the past year.

RPI ANS Homework Help

On every Thursday of the academic year older members of RPI ANS offered homework help for anyone who requested it, starting at 7pm and lasting until necessary. This allowed younger students to meet older students as they worked through their homework and it encouraged students to attend meetings as homework help and general body meetings coincide.

RPI ANS Technical Seminar: Dr. Tom Haley

On September 12th, 2013, Dr. Tom Haley, a lecturer at RPI, took time out of his busy day to attend an ANS general body meeting before he got home to put his kids to bed. At the meeting he gave a talk which covered a broad overview of Monte Carlo methods and the MCNP code. He went through the history of MCNP's development and gave examples of how it is used to perform powerful and impressive simulations today.

RPI ANS Technical Seminar: Dr. Jason Thompson

On September 12th, 2013, Dr. Jason Thompson, a recent RPI graduate and current employee of Knolls Atomic Power Laboratory, visited the Section to discuss RPI's Reactor Critical Facility (RCF). The RCF is a research reactor that RPI owns where all Nuclear Engineering students must take one lab class in order to graduate. Thompson discussed the process to becoming a Senior Reactor Operator (SRO) and opportunities that could stem from this achievement.

RPI ANS Technical Seminar: Dr. Julie Ezold

On September 24th, 2013, Dr. Julie Ezold, an RPI alumnus, visited the section. Dr. Ezold is the country's leading expert on Cf-252 and works at Oak Ridge National Laboratory (ORNL), the country's only supplier of Cf-252. At ORNL she also takes part in the outreach program and acts as the director for



the Nuclear Engineering Science Laboratory Synthesis (NESLS) internship program. In her talk she, in great detail, went through the process by which she produced Cf-252 and for what purposes the isotope can be used. She then discussed different internship opportunities at ORNL, such as NESLS, and how to go through the application process.

RPI ANS Technical Seminar: Dr. Yaron Danon

On September 26th, 2013, RPI professor Dr. Yaron Danon spoke on his area of study, nuclear data and experimentation. During the talk he covered the use of the Gaertner Linear Accelerator in resolving cross section data, developing new detectors, etc. He also covered the research of the large number of students that work under Danon, many of which were in attendance at the meeting and actively contribute to the Section.

RPI ANS Navy Speakers

On September 26th, 2013, two navy representatives came to speak to the students about opportunities for nuclear engineers in the navy. The information presented gave excellent guidance for those wanting to apply for the Navy as well as what the position would include while operating the reactor on the ships and submarines.

RPI HASS Movie Showing: Pandora's Promise

On October 6th, 2013, RPI held a screening of "Pandora's Promise," a documentary detailing the benefits of nuclear energy and dispelling some of the myths used to protest it. RPI ANS sent a contingent of students who helped lead a discussion after the movie. It was encouraging to see a large number of non-nuclear engineering students who supported nuclear energy and to have a concise discussion about why others in the audience disapproved of it.

RPI MANE Technical Seminar: Dr. Richard Lester, MIT, *Innovation and the Future of Nuclear Power*

On October 9th, 2013, Dr. Lester spoke about how nuclear will grow in the US and around the world, and the opportunities that exist in designing the next generation of nuclear reactors.

RPI ANS Technical Seminar: Julie Turcotte

On October 10th, 2013, Julie Turcotte, an RPI alum, visited the section to discuss her research in the medical physics field and how to obtain a job in the field. She currently works at Mass General Hospital where she studies brachytherapy. Being a recent graduate she gave excellent insight into the graduate school process and how to obtain a research position after graduating. Her research at Mass General Hospital was particularly interesting as well for it focused on an area not normally covered at RPI.

RPI ANS Technical Seminar: Dr. Michael Z. Podowski

On October 24th, 2013, RPI professor Dr. Michael Z. Podowski came to a general body meeting to discuss his research and opinions on various nuclear reactor designs. His extensive knowledge into



the area of thermal hydraulics shed a new light on some of the designs not commonly discussed due to their lack of implementation in the commercial world.

RPI ANS Presentation: Amanda Youmans

On November 11th, 2013, RPI senior Amanda Youmans offered to practice her ANS Winter Conference presentation. After giving her excellent talk members of the Section could offer advice or ask her questions that might come up during the conference. When Amanda did present at the conference an Oak Ridge National Laboratory faculty was so impressed he offered Amanda a job for this summer.

RPI ANS Workshop: An Introduction to LaTeX by Andrew Pavlou

On November 11th, 2013, RPI graduate student Andrew Pavlou hosted a workshop on how to use LaTeX for technical writings. In preparation to the meeting Andrew made a packet detailing some of the language necessary to write the code. During the workshop the basics were covered by following Andrew as he wrote samples on his computer and referring to the packet when needed. The workshop was very effective and one graduate student even adopted LaTeX as the software he will use to write his dissertation.

RPI ANS Technical Seminar: Dr. Jim Napolitano

On November 21st, 2013, RPI ANS invited Dr. Jim Napolitano of the RPI Physics department to discuss his research with neutrinos and why he is extremely happy that nuclear reactors exist. Due to the high emission rate of neutrinos from nuclear reactors his research was located right next to a reactor in China. While there he developed methods of detecting and measuring neutrinos while making huge discoveries in his field of work. As a non-Nuclear faculty it was very interesting to learn from Dr. Napolitano what other research goes on at RPI as well as to expand the Section relationship in the school.

RPI Technical Seminar: Janice Dunn Lee, "60 years of Atoms for Peace"

On November 22nd, 2013, RPI President Dr. Shirley Ann Jackson invited her good friend and IAEA Deputy Director of General Office Janice Dunn Lee to speak to the school. A large portion of the RPI ANS section attended to learn about what the IAEA and discuss its international operations. The talk was very informative and the Section certainly made a connection that will be important for students in the coming years.

RPI MANE Technical Seminar: Dr. Sukesh Aghara, U Mass Lowell, *Space Radiation Shielding and Protection*

On December 4th, 2013, Dr. Aghara gave a very interesting talk on radiation shielding for space applications, particularly in respect to protecting humans and important electronic equipment.

RPI ANS Technical Seminar: Dr. Sastry Sreepada

On December 5th, 2013 Dr. Sastry Sreepada came to the last general body meeting of the year. While there he spoke on nuclear reactor and fuel design. He discussed new ways to fuel nuclear



reactors and the possibilities that exist from fuel recycling. He encouraged students to look at the future and see what possibilities are arising from the industry's current endeavours.

RPI ANS Workshop: An Introduction to C++, Chris Morrison

On February 6th, 2014, Chris Morrison hosted a workshop to learn the fundamentals of the computer language C++. It is especially important to learn the code because nuclear engineers often times need to the knowledge in the field but schools do not always require the courses.

RPI ANS Resume Critique

On February 6th, 2014, the older more experience members of RPI ANS held a resume critique session in preparation for the RPI career fair as well as the career fair at the 2014 ANS Student Conference. The feedback was very useful as the qualifications of the reviewers was very extensive.

RPI ANS Technical Seminar: Dr. Emily Liu

On February 20th, 2014, Dr. Emily Liu gave a presentation on nanostructures and their application to nuclear engineers. The talk was highly technical and offered an advanced look at what Dr. Liu and her team research at RPI. The material is not touched on in the RPI curriculum and this talk served as an excellent learning experience for the Section.

RPI MANE Technical Seminar: Dr. Karl Van Bibber, UC Berkeley, *A Physicist Walks on the Dark Side*

On February 26th, 2014, Dr. Bibber spoke about efforts to search for dark-matter axions.

RPI MANE Technical Seminar: Dr. Fei Gao, PNNL, *Materials Behavior under Extreme Condition: Multi-scale Computer Simulations*

On March 26, 2014, Dr. Gao explained the various techniques and methods used to model materials, with a specific focus on nuclear reactors and other extreme environments.

RPI MANE Technical Seminar: Dr. Avneet Sood, LANL, *Lessons Learned from Direct Calculation of Measured Observables in a Multiplying Sub-Critical System*

On April 3rd, 2014, Dr. Sood talked about detector development and how multiplicity detectors may be used to measure subcritical multiplication.

RPI MANE Technical Seminar: Dr. David Hayes, LANL, *Nuclear Engineering Research and Development Capabilities and Opportunities at Los Alamos National Laboratory*

On April 23rd, 2014, Dr. David Hayes spoke about some of the other critical and supercritical experiments that haven taken place and are taking place at LANL.



RPI ANS Technical Seminar: Dr. Peter Caracappa

On April 17th, 2014, RPI professor Dr. Caracappa spoke on the topic of MCNP modeling where he discussed various peculiarities that the code exhibits and how these can be used to enhance code performance and speed.

RPI ANS Field Trip: Vermont Yankee Nuclear Reactor

On April 22nd, 2014, nineteen members of RPI ANS visited the Vermont Yankee Energy BWR. While at the reactor the group was warmly welcomed and given a quick presentation regarding the background of the plant and the basics on how and why the plant is shutting down. The Vermont Yankee staff relied mostly on questions to fuel the conversation. After the discussion the group got a tour of the facility which included a look at the actual control room, the turbine building, the hydraulic control rod drivers, the turbine, and more. It was a very extensive tour.

RPI and NENY ANS Seminar: Gwyneth Cravens

On April 25th, 2014, Gwyneth Cravens, author of Power to Save the World: The Truth About Nuclear Energy and star in pro-nuclear documentary "Pandora's Promise," visited RPI to speak on her beliefs in nuclear energy and how she slowly went through the transformation of becoming pro nuclear after being opposed for years. The talk was streamed live so those unable to attend could still listen in. The talk was very well received and as a small thank you the section gave Cravens a "neutron hat" and RPI ANS pin.

Professional Relations Committee

The Professional Relations Committee is responsible for providing section members with internship, employment, and other nuclear opportunities. This year, the committee was headed by Solana Carlotta (Class of 2015). After receiving permission from ANS President Don Hoffman the committee sent out numerous emails and letters to companies and professionals inviting them to speak or connect with the Section. Besides the nuclear companies that visited the career fairs this year, representatives from Areva, Oak Ridge National Laboratory (ORNL), and Massachusetts General Hospital (MGH) came and spoke to the Section. Other networking opportunities arose when nuclear professionals spoke at seminars on campus or met with students outside the general body meetings. The committee made sure to send thank you notes to speakers in order to express the section's gratitude.

Institute Relations Committee

The role of the Institute Relations committee is to handle all events on campus, working with the MANE Department, the School of Engineering, and other student groups on campus. This year the committee, headed by Emily Frantz (Class of 2015), worked with other groups to co-host events and increase the visibility of RPI ANS on campus. A great effort was put into hosting professors at various meetings to learn about undergraduate research opportunities at RPI and the various research fields within nuclear.



RPI Activities Fair

On September 18th, 2013, RPI ANS sent representatives to the RPI activities fair so new and current students could come ask questions about ANS and learn how to become active in the Section.

RPI Medalist Day

On September 7th, 2013, RPI held an “Open House” for prospective students who won the RPI Medal to come and meet RPI students about the school. Four RPI ANS members attended to answer questions about the nuclear program at RPI and any other questions the students may have. RPI ANS brought a CFD simulation of a nuclear reactor channel, radioactive sources, detectors, and information packets to make the booth more interesting and to attract attention. About 30 students interested in nuclear engineering stopped by to discuss the program and the various items at the booth.

Faculty Student Mixer

On November 7th, 2013, RPI ANs hosted a faculty-student mixer in order to improve the relationship in the nuclear engineering program. Food was catered as well as brought by students and faculty. Nearly every single nuclear engineering faculty, 15, attended and about 40 students came to talk with the professors. Overall, the mixer was well received by all parties involved and helped decrease any hesitation students have to talking with faculty.

Outreach Committee

Qwerty

Nicholas Thompson, An Overview of Nuclear Power and Other Energy Sources, Post Fukushima

On October 31st, 2013, RPI graduate student Nicholas Thompson spoke at the RPI Chapter of the American Society of Mechanical Engineers on the topic of how Fukushima has changed the nuclear energy industry.

Boy Scout Talk, Overview of Nuclear Science and Radiation

On November 11th, 2013, RPI graduate student Nicholas Thompson visited his home town Boy Scout troop in Farmingdale, NY where he gave a high school level lecture on the principles of nuclear science.

Young Professionals Congress Meeting with Representative Chris Gibson

On November 26th, 2013, RPI graduate student Nicholas Thompson visited New York Representative Chris Gibson and discussed some of the various aspects of nuclear engineering that are not as well known, such as food irradiation and other non-energy applications of nuclear technology.

Meeting with Representative Paul Tonko and Citizen’s Climate Lobby

On November 26th, 2013, RPI graduate student Nicholas Thompson traveled to Albany, NY to speak with New York Representative Paul Tonko and Citizen’s Climate Lobby to discuss the future of



nuclear power and how it should not be disregarded as a clean energy source because of past events. In addition, they spoke on the idea of introducing a carbon tax in order to encourage a smaller carbon footprint.

Nicholas Thompson, Eagle Scouts and a “Pandora’s Promise” Screening

On January 27th, 2014, RPI graduate student Nicholas Thompson visited the Arthur R. Eldred Chapter of the National Eagle Scout Association in Massapequa, NY. While there he watched the pro-nuclear energy documentary “Pandora’s Promise” and answered any question the audience had.

Exploring Engineering Day

On February 15th, 2014, the RPI chapter of the Society of Women Engineers hosted Exploring Engineering Day (EED). This event brings in 300+ 4-8 graders to the Rensselaer Polytechnic Institute to engage in engineering activities. Section members Matthew Zimmer (Class of 2015), Walter Pfuntner (Class of 2015), Emily Frantz (Class of 2015) and Nicholas Thompson (Graduate Student) staffed this event where throughout the day they taught the basics of nuclear science and radiation. Children and parents were able to safely handle radiation sources and detectors in order to demonstrate the principles of radiation protection and measurement. In addition, mock fuel pellets were used to demonstrate the benefits of nuclear power and how it compares to other methods of energy production. Section members also answered any questions from the children and parents in a multitude of nuclear related topics. This was the fourth time that RPI ANS has taken part in EED and we plan to take part in it again in the future.

Nuclear Science Boy Scout Merit Badge

For the eighth consecutive year at the Rensselaer Polytechnic Institute that the ANS Outreach Committee hosted the Boy Scout Nuclear Science Merit Badge. This event was held on November 23rd and on March 22nd at the Gaerttner LINAC Center, RPI’s Linear Accelerator on campus. Matthew Zimmer (Class of 2015), Walter Pfuntner (Class of 2015), Nicholas Thompson (Graduate Student), Brian McDermott (Graduate Student), and Will Noll (Class of 2017) helped out with running the activities and giving presentations.

Between both dates Over 50 Boy Scouts and many parents attended, some driving over two hours and spending a night in a hotel. Throughout the day, the scouts were taught about the important of nuclear concepts and key nuclear definitions relating to topics ranging from parts of the atom to the generation of nuclear power. They also learned about careers in the nuclear field along with how to protect themselves using the principles of ALARA in case of radiation exposure. There were also activities spaced throughout the sessions which included drawing chain reactions, using a Geiger counter and a tour of the Linear Accelerator lead by Brian McDermott (Graduate Student) and Nicholas Thompson (Graduate Student.)

By the end of both sessions, all of the boys had earned the Nuclear Science Merit Badge and many of the attendees left with a deeper knowledge in nuclear science and power. This event was so well



accepted that the demand for another session before the end the spring semester convinced the Section to plan one more session in early May.



Figure 1: Attendees and ANS Members of the Second Session

Social Committee

The social committee of RPI ANS is responsible for developing programming that encourages interaction among members outside of the traditional academic experience. The social committee was chaired by Brian McDermott (graduate student) for the 2013-2014 academic year.

Biweekly Bowling

Every other Monday, members of the section gather for an informal bowling tournament at Uncle Sam's Lanes in downtown Troy, NY. This provided section members and their guests with a relaxing, inexpensive venue for socializing, while challenging one another to improve their bowling skills.

Intramural Sports

RPI ANS made a volleyball team in the fall semester and walleyball in the spring semester. Both semesters were great successes and the volleyball team was runners-up in the division tournament.



Apple Picking

On October 19th, 2013 RPI ANS carpoled to go apple picking. This autumn-themed outing to a local apple orchard provided members with the opportunity to enjoy fresh-picked apples and interact with one another in an outdoor setting away from the RPI campus.

Relay for Life

On April 25th, 2014, RPI ANS participated in Relay for Life where the group raised \$100 and participated in the relay for four hours.

RPI ANS Holiday Party and Potluck

On December 9th, 2013, RPI ANS hosted a Holiday party to celebrate the end of the semester and the upcoming holidays the students would be celebrating on break. At the party students brought a gift for a yankee swap as well as food for everyone to enjoy. It was an excellent way to relax before finals came around.

Conference Committee

The conference committee is tasked with writing a proposal to host the annual ANS Student Conference. This year, only an initial investigation into the logistics of hosting the conference were completed. Both writing the proposal and executing it would require a large number of dedicated students. Unfortunately, not enough interest was generated for this to be possible. Hopefully next year there will be enough interest for a proposal to be submitted.

Graduate and Alumni Relations Committee

The role of the Graduate and Alumni Relations Committee (GARC) is to foster the involvement of the graduate student population at RPI and the section alumni with RPI-ANS. This year, the position of committee chair was held by Dillon R. Shaver (Ph.D. Candidate).

Invited Presentations Series

This year the graduate and alumni relations committee expanded its role in RPI ANS by kick starting the "invited presentations" series in the local section. This included inviting professors at RPI to come to the general body meetings to present some information about their research as well as possible opportunities to join with their research groups. After determining the schedule for the first semester and setting up the first four invited presentations, the responsibilities for the invited presentations series was passed on to the Institute Relations Committee. The first invited speaker were

Dr. Tom Haley – Monte Carlo and statistics in everyday life

Dr. Yaron Danon – Research activities at the RPI Gaertner LINAC facility

Dr. Michael Podowski – Research activities in the RPI Center for Multiphase Research

Dr. Jim Napolitano – Neutrino detection and measurement

In addition, the committee chair was invited to give a presentation on March 6th, 2014.



Ongoing Activities

As part of its primary responsibilities, the GARC actively builds and maintains a list of RPI-ANS alumni. Through this alumni list, we were able to offer the 2014 T-shirt and neutron hat designs for sale to the alumni.

The GARC hosted several review sessions for nuclear engineer classes including:

MANE – 2400, Fundamentals of Nuclear Engineering

Hosted by Dillon R. Shaver and Andrew T. Pavlou (Ph.D. Student)

MANE – 4480, Physics of Nuclear Reactors

Hosted by Ezekiel J. Blain (Ph. D. Candidate)

Section Accomplishments

This year marked a significant increase in young active members. The freshman class brought new faces that regularly attend the meetings and contribute to the Section. It is the hope that this new membership will continue to uphold the success of the RPI ANS Student Section.

In the last year, RPI ANS, has placed an increased emphasis on drawing guest speakers, which has been quite successful as demonstrated by the list of this year's speakers. These presentations have been open to the entire student body, as well as NENY ANS, and have been a key component of the section's outreach activities.

As with previous years, RPI ANS, has continued its weekly Peer Tutoring sessions. Peer Tutoring consists of graduate, and upper classmen helping younger students improve understanding of concepts, homework, or scheduling classes. The increased participation of graduate students has proven to be a huge benefit, as the range of topics being covered has grown significantly. However, the greatest benefit to the students involved has been from forming groups to help each other through difficult assignments.

Conferences

As with previous years, conference attendance continues to be a priority of RPI ANS. All members, regardless of class, or career goals are encouraged to attend conferences. Our section continues to attend in impressive numbers, with 11 students attending the ANS Winter Conference in Washington DC, and 16 students attending the ANS Student Conference in State College, PA. Also, there were over 10 presentations made by RPI ANS members at these conferences.



RPI ANS with faculty and alumni at the 2014 ANS Winter Conference

Conclusion

The RPI ANS Board of Directors for the 2013-2014 year has been extremely successful in their efforts to increase the section's presence on campus and in the region. By placing a focus on attracting guest speakers, and reaching out to both the student body as a whole and professional organizations, such as NENY ANS and HPS, RPI ANS has expanded its presence, visibility, and influence within the school and region. Overall, the past year has been a successful one for RPI ANS; with increasing recruitment aimed at the underclassmen in the nuclear engineering program, the section is positioned to continually grow and improve.