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# SAMUEL GLASSTONE REPORT 2013-2014

AMERICAN NUCLEAR SOCIETY,

UNIVERSITY OF WISCONSIN – MADISON

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SUBMITTED TO THE ANS GLASSTONE AWARD COMMITTEE



**President:** Kalin Kiesling

**Vice-President:** Matthew Jasica

**Treasurer:** Ian Jentz

**Public Information:** Nathan Vogel

**Communications:** Andrew Nigh

**Governor & Communications:** Kelsey Amundson

**Governor:** John Daugherty

**Governor:** Kazi Ahmed

**Governor:** AJ Gross

**Faculty Advisor:** Paul P.H. Wilson

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## INTRODUCTION

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During the 2013-2014 academic year the American Nuclear Society, University of Wisconsin-Madison (UW-ANS) has worked very diligently to maintain its track record of planning, organizing, and executing events in the areas of service to ANS, public outreach, professional development, and community service. Having been recognized as a very successful student section for many years past, UW-ANS has tried to uphold this image through organization of many traditional events as well as undertaking several new projects involving many professional development opportunities. Part of this success is due to developing relationships with other student organizations such as the American Institute of Aeronautics and Astronautics (AIAA), Energy-Hub (E-Hub), and Women in Nuclear (WIN), as well as strong involvement with the Department of Engineering Physics, the College of Engineering, and the ANS Wisconsin Local Section.

As done in past years, UW-ANS has participated in a plethora of community service and public outreach events as a way to give back to the community that has fostered the growth of the student section. Some of these events include Adopt-A-Highway, the high school essay contest, Boy Scout Nuclear Science Merit Badge Days, Science Olympiad, Badger State Science and Engineering Fair, and Mickies Dairy Bar Fundraiser. As in the past, there was tremendous participation in these activities that allowed them to be huge successes in the community.

In addition to community service and public outreach, UW-ANS values the professional development of students. This year, professional development and networking opportunities were widely available in part due to a growing relationship with the American Nuclear Society Wisconsin Local Section. Students had the opportunity to attend two local section meetings that were hosted on campus where they were able to network with professionals from all around the state of Wisconsin. As well, UW-ANS was able to organize several visits from professionals to give presentations on nuclear engineering and other related fields. Some of these talks were co-hosted with other student organizations such as AIAA and E-Hub. UW-ANS also encourages students to become involved at a national level. This was able to be done by having many people attend both the ANS Winter Section Meeting in Washington, D.C. and the ANS Student Conference at Penn State. In addition to these large networking events, members of UW-ANS, as well as other students in the department, attend weekly networking events such as breakfast at Mickies Dairy Bar every Friday and coffee and donuts every Wednesday.

This year, UW-ANS started two new large projects that will continue into future years. The first is the development of a committee to submit a proposal to host the 2015 ANS Student Conference. This committee involved 16 students dedicating their time every week to organize a proposal. The second big project for the year was the development of a group to design and build a nuclear battery. This project has made such a large stride in progress this year that has already started to win awards in competitions. Having been able to reach such large stepping stones in both of these projects, it is hoped that they can continue in the future.

Although having done several outreach and professional developments events, as well as starting new projects, the members of UW-ANS have still found time to socialize with one another through many ANS hosted events. The largest social event is the biannual Pic-Nuke which is a picnic held at the beginning and end of every year for the students and faculty of the entire Department of Engineering Physics. In addition, there have been many other outings such as bowling, games

nights, and even a brewery tour that have allowed students to take a break in their busy schedules and get to know one another.

In summary, UW-ANS has been able to maintain their level of involvement in the community this past year while being able to expand its realm of interests to many other types of activities. Overall, the student members of UW-ANS have been nothing short of committed and driven with everything they have done this year. This has allowed for the 2013-2014 academic year for UW-ANS to be very successful.

## SECTION MANAGEMENT

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A large reason for being able to provide many opportunities to student members is having a dedicated and hard working board of executive officers and committee chairs. This group of students consists of seven elected members and many more volunteer members that work strive to provide the best opportunities for students and the general public.

### EXECUTIVE OFFICERS

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The executive committee consists of seven elected officers: President, Vice-President, Treasurer, Public Information Officer, Communications Officer, and two Governors. The President, Vice-President, Treasurer, and Public Information Officer are all year-long elected positions while the Communications Officer and Governors are elected semester positions.

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#### PRESIDENT

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The President's main responsibilities included moderating general member and executive committee meetings, scheduling speakers for general meetings, organizing tours and conferences, managing the section's schedule, appointing the Webmaster and Mentoring Chair, and acting as the liaison and representative for the section both professionally and within the College of Engineering. The President for UW-ANS this year was Kalin Kiesling, who served as the Communications Officer both semesters last year. Next year's president will be Kazi Ahmed, who served as a Governor in the spring semester this year.

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#### VICE-PRESIDENT

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The Vice-President's responsibilities are organizing the section's social activities, acting as President in the President's absence, and providing support for the President. Some of this year's specific duties included coordinating Pic-Nuke and the other UW-ANS socials and ordering new t-shirts. This year the Vice-President was Matthew Jasica who has also served as the Boy Scout Coordinator for the past two years. Next year the vice president will be Andrew Nigh who served as the Communications Officer for the fall semester.

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## TREASURER

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The Treasurer's responsibilities included drafting budgets for each semester and for the entire year, keeping track of all transactions completed by the organization, writing grant proposals, acting as liaison between UW-ANS and the UW-Madison Student Leadership Center (an organization that oversees the donated funds of College of Engineering student organizations), and advising the other executive officers on how best to spend the section's funds. The treasurer this year was Ian Jentz who has been reelected to serve as Treasurer again next year to help transition the new executive board members.

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## PUBLIC INFORMATION OFFICER

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The Public Information (PI) Officer's duties were to develop, organize, schedule, and execute the section's public outreach efforts as well as to appoint and oversee the work of Science Olympiad, and the Essay Contest. Included in this responsibility was proper inventorying public outreach supplies, writing and designing presentations to be used at public outreach events, coordinating with teachers and scout leaders to organize events such as Boy Scouts and the Essay Contest, and working earnestly throughout the summer to coordinate both Camp Badger (an engineering summer camp for middle school students) and Engineering Tomorrows Careers (a summer camp for female high school students interested in engineering). The PI for this year was Nathan Vogel. Next year will be Kelsey Amundson, who was a Governor during the fall semester and the Communications Officer for the spring semester.

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## COMMUNICATIONS OFFICER

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The Communications Officers duties are to take minutes at executive committee meetings, to send out weekly announcements, advertise for upcoming events (usually by flyers, by chalking information on sidewalks, or via email), and to maintain and update the UW-ANS announcement mailing list. The importance of this position is to ensure that the members, students, and community are properly informed about the events going on within UW-ANS. The Communications Officer for the fall semester was Andrew Nigh and the spring semester was Kelsey Amundson. The Communications Officer for next year will be Jennie Aylyng, a student who has become very highly involved in UW-ANS over the last few years.

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## GOVERNORS

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The main purpose of the Governor position is to get acquainted with the workings and dealings of the UW-ANS executive committee and to develop their leadership skills. Because of this, Governors are preferred to be underclassmen or those just starting to get involved. Some of their responsibilities are planning and facilitating special events throughout the semester, such as Adopt-A-Highway and E-Week. There are two Governor positions, and like the Communications Officer position, are only one semester terms. The Governors in the fall semester were John Daugherty and Kelsey Amundson, and in the spring term were AJ Gross and Kazi Ahmed. Next semester's Governors will be McKinleigh McCabe and Garrett Andrews.

## CHAIRS

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The chairs of the UW-Madison ANS section are appointed by members of the Executive committee, and therefore are non-elected positions. As such, chairs are not required to attend executive committee meetings and are more committed to a more focused set of responsibilities. Some chairs are consistent, year-long events, while some appear on an as-needed basis. As it happened this year, most of the necessary chairs were elected members of the Executive committee.

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### BOY SCOUTS CHAIR

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The Boy Scouts Chair main responsibility is facilitating and organizing UW-ANS's Boy Scouts Merit Badger Workshops, which helps ease the burden of placing too many duties on the Public Information officer. The Boy Scouts Chair should understand the basic operations behind Boy Scouts, the nuclear science merit badge, and the outreach and communication required in order to organize this event. The Scouts Chair this year was Matthew Jasica. Next year, the position will be shared between two people. Matthew Jasica will continue as a co-chair with Kelsey Amundson who was elected for Public Information Officer next year.

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### EXPO CHAIR

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Engineering Expo is a College of Engineering event occurring every other year that draws thousands of people from all walks of life and knowledge levels. Student organizations and other engineering groups are encouraged to set up fun and educational activities at their booth for all age levels. The main responsibilities are to oversee the successful execution of the UW-ANS booth at Engineering Expo. This year Engineering Expo did not occur so it was not necessary to appoint this position.

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### SCIENCE OLYMPIAD CHAIR

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The Science Olympiad Chair is appointed by the Public Information officer, and is charged with coordinating UW-ANS members to coach students at Sennett Middle School as they construct projects and study for the Science Olympiad competition in the spring. This year, Nathan Vogel took responsibility of Science Olympiad, on top of his current position as Public Information.

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### SCHOLARSHIP CHAIR

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The scholarship chair is responsible to organizing and managing the Essay Contest. The Essay Contest is an opportunity for high school students to write an essay on a pre-chosen nuclear engineering topic and submit it for a scholarship to UW-ANS. This scholarship was started up again by Nathan Vogel, also the Public Information Officer, after past years of minimal participation.

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### CONFERENCE BID CHAIRS

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Because of the decision this year to submit a proposal for the 2015 ANS Student Conference, two chairs were necessary to head the effort. Their duties included organizing a conference bid committee, coordinating with the College of Engineering, City of Madison, and ANS National, and

overseeing the creation of the proposal. This year Kalin Kiesling, the President, and Matthew Jasica, the Vice-President, were co-chairs for this committee.

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## OTHER POSITIONS

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In addition to our executive and chair positions, there were several other UW-ANS members that provided support to the UW-Madison chapter in one way or another. Like the Chairs, some of these positions are appointed, and others come based on the need at the time.

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### WEBMASTER

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The two main responsibilities of the Webmaster are to maintain the UW-ANS website and to provide support for the use of Google. Tasks included in maintaining the website are syncing the website's forms with Google Docs, updating pictures and presentations, and ensuring that the website continues to function as intended. To aid the executives in using Google (email, calendar, and docs), the Webmaster organizes information, aids in turnover between administrations, and teaches current users the capabilities of using Google. And the end of this year, the Webmaster began the process of transitioning the entire UW-ANS mailing list, originally within the College of Engineering, to a Google based mailing list. This process is expected to continue into the summer and fall semesters. Often times, this position is shared by the executive officers. This year the main webmasters were the two Communication Officers, Andrew Nigh and Kelsey Amundson, as well as the President, Kalin Kiesling.

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### DESIGN CHAIR

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This is a new position that was established at the beginning of the year per request of a member of UW-ANS. Xavier Durawa was the student who came up with the idea to design and build a nuclear battery as a way to give students more hands-on nuclear engineering activities. The executive board extended his willingness to head this project to a more general position known as the Design Chair with intention that the project can change from year to year. Naturally, the design chair this year was Xavier Durawa.

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### FACULTY ADVISOR

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The Faculty Advisor for UW-ANS is there to provide the chapter with advice and act as a liaison between the organization and the department. Often, the Faculty advisor retains his position for many years, so they are able to provide valuable information to the organization, as the Executives and Chairs often are served by people new or just getting involved in UW-ANS. This year, the Faculty Advisory was Paul Wilson, who has served as the faculty advisor for many years and is highly involved with national ANS as well.

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### EXPO PLANNING COMMITTEE

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With the scale of the Engineering Expo, UW-ANS also usually appoints a handful of volunteers with the Expo Chair, to help plan and execute the Engineering Expo. Due to this event not occurring this year, the appointment of the Expo Planning Committee was not necessary.



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## CONFERENCE BID COMMITTEE

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Due to the decision to submit a proposal to host the 2015 Student Conference, it was necessary to organize a committee to share the responsibilities of writing the proposal. This committee met every week either as subcommittees or the full bid committee to organize their sections of the proposed conference. As well, many students were responsible to doing site visits of potential conference venues and coordinating with City of Madison. The majority of the committee was students that expected to be around in 2016 as well as a few graduating students that offered their help. This year the committee was Kalin Kiesling, Matthew Jasica, Grant Zastrow, Xavier Durawa, Ryan Cook, Ian Cook, Richard Rolland III, Ian Jentz, Andrew Maile, Kelsey Amundson, AJ Gross, Virginia Haupt, Kazi Ahmed, Andrew Nigh, Tony Silvidi, Brett DuCharme, and Jon King. Many of these members will continue on the committee next year as well as new members.

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## OPERATIONS

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In addition to the contributions of the executive committee and its general members, UW-ANS attributes its success to the administrative procedures and processes ensure everything runs smoothly. Furthermore, these processes made it possible for turnover between the previous executive board and this year's executive board to have very few issues. Because of these documents processes and experience of the incoming executive board, it is very likely that the turnover between executive board members will be a smooth transition as well.

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## OFFICE HOURS

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This year, UW-ANS hosted office hours in which members of the executive board were available at the UW-ANS office located in the Engineering Centers Building on UW-Madison campus. For ten hours every week, UW-ANS executive officers were available for questions, t-shirt sales, and informal meetings. One hour each week of these office hours included the weekly executive meetings in which the executive board discussed current issues, upcoming events and their logistics, and other items of interest regarding the section. Every executive board meeting is an open meeting and students are welcome to attend to raise issues or new ideas. This year, the meetings were frequently attended by the design chair Xavier Durawa as he started the new nuclear battery project.

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## ACTIVE MEMBERSHIP

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Active membership is the official title given to any student who meets the criteria of being a member of ANS. Active membership is determined by paying membership dues each semester. The dues are \$10 per semester or \$15 per year.

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## ACTIVE MEMBERSHIP POINTS

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In addition to just paying dues, there are different levels of active membership within UW-ANS that have different benefits. To attain higher active membership status, members were required to acquire a certain number of active membership points in order to achieve this status.

These points are earned by attending meetings, workshops, outreach events, tours, etc. that UW-ANS hosted or encouraged. The intent of the Active Membership points were to encourage people to help out with UW-ANS and the community, while also helping themselves develop professionally. Throughout both fall and spring semesters, benefits were realized for active members. In the fall, a laser tag social had a highly discounted price. In the spring, both a paintballing social and stipends for the ANS Student Conference were rewarded. For those members receiving the title of active membership, along with the current and appointed executive board, a catered banquet will be held during the last week of the semester.

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## ACTIVE MEMBERSHIP RECOGNITION

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### CAPTAIN NEUTRON

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During every general section meeting, UW-ANS likes to recognize one student member who has been particularly active over the last month or however long it has been since the last meeting. This is done by being named "Captain Neutron." Students who receive this award have their picture, often times a silly picture, posted on the bulletin board outside the departmental office for everyone in the department to see them and know that they have been very active. As well, the student also receives a free "I <3 Nuclear" t-shirt. This year, there were four named Captain Neutrons.

### END-O'-SEMESTER BANQUETS

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At the end of each semester before finals start, UW-ANS likes to reward their members that have been particular active during the semester. This is done by holding a banquet and awards ceremony. Members who have earned at least four active member points during the semester are invited to attend a home-cooked dinner prepared by the executive board. During the dinner, awards are given to students who have been particularly active and shown a lot of initiative in the semester. A few such awards include "Most (Radio)-Active" and "Most Improved Student."

## FINANCIAL PLANNING

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UW-ANS has continued with past principals in our efforts in obtaining funding and managing spending. As in the past, the task of ensuring income and sponsorship match balanced spending, across all activities of ANS, falls to the treasurer. UW-ANS has continued digital transaction logging via Google Docs, started by last year's treasurer Darius Lisowski. Transactions are logged across both of the UW-ANS accounts, and are viewable to all executive officers. Last year's revisions in reimbursement and spending tracking have also been incorporated that require forms containing detailed descriptions, receipts, check numbers, and signatures of two executive officers to presented before transactions can be made. These systems aid in transparency and accountability in spending.

Logistically, UW-ANS has two spending accounts: a checking account with Associated Bank-Corp. and an account through the Student Leadership Center (SLC) in the College of Engineering. The SLC requires the maintaining of an account with them in order to apply for certain grants. The use of the SLC account is limited to certain approved activities, such as providing travel and lodging at conferences, but cannot be used for some of our activities, such as socials or individual reimbursements. Where the SLC account can't be used, the more flexible personal banking account at Associated Bank is used. The Associated account is also favored since UW-ANS have

administrative control over the Associated account but not over the SLC account. Purchases can be made via check or with a debit card. All checks written must be signed by two members of authorized signers which include: the President, Vice-President, Treasurer and Faculty Advisor. Use of the debit card must be approved at a weekly executive meeting. This method ensures more responsibility when spending and has worked well.

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## BUDGET

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Budgets are compiled by the treasurer at the beginning of each semester and presented at an executive board meeting where they are ratified. A ratification meeting serves as a means to discuss how money can be best allocated and ensure a fair distribution of funds across all function of our section. The budgets encompass all aspects of UW-ANS's spending and earning over the two accounts. As a student organization, UW-ANS also submits these budgets to the SLC. Anticipated expenses are detailed as greatly as possible so that accurate fundraising and income goals can be made for each semester.

As started in the previous year all budgets are available in Google Docs format managed by UW-ANS. This makes them available to any executive board member, current or in the future. Thus members of the executive board can reference ratified budgets when planning their agreed-upon events and make appeals if necessary.

The budgets were exceeded this year with spending of \$19,285.62 exceeding the income of \$15,791.04 as of 3/26/2014. This was due entirely to travel complications that arose during our trip to the 2014 Student Conference at Penn State. The complications and added expense were the fault of the University of Wisconsin's Fleet Vehicle System and restitution with them is in progress. Otherwise all budgeted expenses were matched well with grants from the SLC and industry sponsorship.

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## FUNDING

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Income comes from three distinct sources: SLC grants, fundraising and cash income. The treasurer is responsible for handling all these incomes.

SLC grants are given out six times a year and are applied for by the treasurer. These grants are provided by the university and are approved by the SLC. The grants are highly limited in their use and amount. Much effort has to be made to express the strong business purpose, vision, and connection to the university when attempting to receive an SLC grant. These grants are used primarily to obtain funding for conference lodging, as such purposes are generally approved.

Fundraising comes from industry sponsorship. The desired amount of funding was determined from semester budgets and was used to provide distinct sponsorship opportunities. Industry partners were given the option to sponsor specific activities that were budgeted. For instance, sponsorship of student attendance at the 2013 ANS Winter Meeting was an offered opportunity in the fall sponsorship letter. This sponsorship opportunity, in particular, was taken up by Excel Services. This year's industry sponsors helped out with conference lodging, travel, and the essay contest. Sponsors this year were included Excel Services, Dominion, and the Engineering Physics Department at University of Wisconsin-Madison.

Cash income comes from membership dues, Boy-Scout Workshop registration fees, and t-shirt sales. Unlike grants or sponsorship, cash income is discretionary, giving flexibility in spending. Sixty-eight active members paid a total of \$910 in dues this past year while scout registration fees and t-shirt sales at the Boy Scout Merit Badge Workshops netted \$3580 as of 3/26/2014.

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## SPENDING

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All spending is estimated and approved as part of the semester budgets. Transactions are monitored and approved by the treasurer and are agreed upon at executive meetings.

In addition to our established system for writing checks, UW-ANS is now operating a debit card. The decision to obtain a debit card was made due to the fact that many transactions, for example hotel reservations or online purchases, require a card. In the past, card requiring transactions were performed on executive members' personal credit cards and were later reimbursed via check. Not only did this place burden on personal credit cards, it created accounting clutter and prevented the use of our tax exempt status on many purchases. The use of the debit card must be approved at a weekly executive meeting and can only be signed for by the President, Vice-President, or Treasurer. With a debit card spending consolidated to the accounts, reimbursement transactions have been reduced, and tax exemption is able to be received on card-only purchases, where previously it was not possible.

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## T-SHIRTS

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T-shirts designed and sold by UW-ANS serve as a means to raise money and advertise the student section. These t-shirts are sold for \$10 to active members and \$15 to everyone else. The "I ♥ Nuclear" design continues to be popular among the UW-Madison student section. These t-shirts also sell well at the Boy Scout Merit Badge workshops. A complimentary t-shirt is also given away as part of the monthly "Captain Neutron" award. This year Vice-President Matthew Jasica ordered 55 t-shirts in varying sizes.

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## PENS

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Another popular promotional item designed by our section is the UW-ANS pen. This pen features our section name alongside the "atomic badger" logo. These pens are given away at outreach events, particularly at the Boy Scout workshops. Vice-President Matthew Jasica ordered 1200 pens, which are estimated to be enough for over 5 years.

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## UW-ANS WEBSITE & GOOGLE DOCS

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UW-ANS uses the atomicbadger.org domain and Google Apps to send information to the member list and to keep the organization organized. The Google word processor, spreadsheet, and presentation software are all used to assemble, coordinate, and disseminate organizational activities and proceedings. A non-exhaustive list of these uses follows:

- Executive committee meeting agendas and minutes
- Budgetary planning
- Membership rosters

- Active Membership Point Submission
- Conference tour and sign-ups
- General meeting introductions / presentation
- Guest speaker presentations
- Descriptive source inventory
- Chapter logo storage
- Collaborative editing / sharing

In addition to these "standard" document abilities, Google Docs also offers Forms. Forms is a simple tool that allows the quick creation of surveys or applications that can be embedded in a website. When filled out and submitted, the Form sends the information to a spreadsheet and creates summary statistics for all of the submissions. This service from Docs is an important part of the current website. Two of the main uses for the Forms option include Active Member point submissions and event sign-ups.

Two features of Google Docs are extremely useful in the day-to-day operations of UW-ANS. The first is the use of Shared Folders. All of the aforementioned Google Docs content is not only shared with all of the executive committee but also placed into a folder structure that clearly labels the document's purpose. Secondly, on the technical side, Google Docs now offers Google Apps Script as a means to read, process, and write data between all the services of Google Apps (Sites, Calendar, Docs, etc.). For example, our past Webmaster wrote a program to automatically determine active from non-active members on our roster using this tool.

The most recent use of Google Apps is the use of Google Groups. While still being implemented currently, UW-ANS will move its entire mailing list to Google Groups. The current implementation is the used of the College of Engineering's Computer Aided Engineering (CAE) mailing list. One reason for this conversion is that students are not able to easily subscribe or unsubscribe to the CAE mailing list whereas Google Groups offers this. Given that the rest of the online and computer applications for UW-ANS are Google based, it only made sense that the mailing list be transitioned as well.

This year UW-ANS continued to fully utilize the Google Apps suite of services. Building upon the previous years' success in using Google Apps, Google Apps is now considered as a natural and effective means for collaboration amongst current UW-ANS officers and members while providing a steady and promises base for the future. A screen shot of UW-ANS section's website is given below in Figure 1. On the homepage of the website there are instructions on how to become an active member and a calendar of ANS office hours, held by members of the executive board, each of which is a new addition to the website.



FIGURE 1 - SCREENSHOT OF THE UW-ANS WEBSITE, ATOMICBADGER.ORG

## SOCIAL MEDIA

The utilization of Social Networking sites has been taking off these last few years, and ANS has utilized this opportunity to keep in touch with the community. With students checking their Facebook more often than their email, it is becoming the best way to quickly and readily relay information to a particular group, and can even be utilized to advertise to the general public for the proper times. UW-ANS continues to use the Department of Engineering Physics' Facebook page, Figure 2, for posting about events. Several UW-ANS executive members were given permission to edit the web page, which has proven to be a useful tool in helping advertise events, meetings, and keeping others informed about the current events going on in UW-ANS.



FIGURE 2 - THE DEPARTMENT OF ENGINEERING'S FACEBOOK PAGE WHICH IS ALSO USED BY UW-ANS

Also continuing to be used this year is the UW-ANS Twitter account (UW\_ANS). The same basic announcements for meetings and events that get posted to the Facebook page also get posted to Twitter. There are many followers of the Twitter account and it has been proven to be useful this year.



## GENERAL MEETINGS AND EVENTS

UW-ANS strives to supply professional development options to its members. The chapter continued to provide a wide variety of speakers, opportunities to attend conferences, tours of industry facilities, and seminars as it has in past years.

### GENERAL MEETINGS & SPEAKERS

Many of the professional development opportunities arise from hosting guest speakers. Often times, these guest speaker visits will double as a UW-ANS General Meeting. It has been found over several years that the best attendance for section meetings comes when other opportunities as well, like guest speakers. This year there was a strong drive to host guest speakers jointly with other student organizations in the College of Engineering. UW-ANS was successful in co-hosting guest speakers with Energy Hub (E-Hub), American Institute of Aeronautics and Astronautics (AIAA), Society of Women Engineers (SWE). In the past UW-ANS has also coordinated with Women in Nuclear (WIN), but due to inactivity this year, there were no joint events with this student organization. Below in Table 1 is a list of all guest speakers hosted this year and general section meetings.

TABLE 1 - LIST OF GUEST SPEAKERS AND MEETINGS

<i>Date</i>	<i>Speakers</i>	<i>Company/Event</i>
<b>September 5, 2013</b>	(none)	(Fall Kick-off Meeting and Social)
<b>September 12, 2013</b>	Commissioner William C. Ostendorff	NRC
<b>September 16, 2013</b>	Ryan Boscow	NNSA Graduate Fellowship
<b>September 19, 2013</b>	Brian Vitiello / Anthony Schoedel	Dominion / General Meeting
<b>September 24, 2013</b>	Benjamin Bing-Yeh Yang	Sandia National Lab
<b>October 4, 2013</b>	John Helfenberger, Jake Blanchard, Stacy Gillin, Harv Hanneman, Ross Radel	Kewaunee, Dept. of Engineering Physics, Shine, Phoenix Nuclear Labs / ANS WI Local Section Meeting
<b>October 16, 2013</b>	Timothy Donohue	Great Lakes Bioenergy Research Center (co-hosted with E-Hub) / General Meeting
<b>November 19, 2013</b>	Kerry Lee	NASA (joint with AIAA) / General Meeting
<b>December 4, 2013</b>	LT Sarah Mustin & LT Keven Haggerty	U.S. Navy (joint with SWE)
<b>December 10, 2013</b>	(none)	(Elections Meeting for Spring 2014)
<b>January 28, 2014</b>	(none)	(Spring Kick-off Meeting and Social)
<b>February 26, 2014</b>	Kenneth O'Brien	NRC, Region III / General Meeting
<b>March 6, 2014</b>	(none)	Department Feedback Session (ILC Committee)
<b>March 11, 2014</b>	Stacy Gillin	Shine Medical Technologies / General Meeting
<b>March 28, 2014</b>	Thomas Mackie	Morgridge Institute for Research / ANS WI Local Section Meeting
<b>April 30, 2014</b>	(none)	(Elections Meeting for 2014-2015)

## COORDINATION WITH OTHER STUDENT ORGANIZATIONS

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It is highly encouraged in the College of Engineering to coordinate with other student organizations on events. This year, UW-ANS showed a high increase in the number of hosted events with other student organizations as well as participation in other student organizations events. UW-ANS maintained in close contact this year with WIN, AIAA, and SWE. As well, a new relationship was formed with Polygon, the student council organization for the College of Engineering.

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### WOMEN IN NUCLEAR

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The university's section of Women in Nuclear is in the same department as UW-ANS, so naturally there is coordination between events with WIN. As WIN is a small organization, their members often attend the UW-ANS events. In the past, UW-ANS has helped out with their Girl Scout Workshops, which are nuclear outreach workshops similar to the Boy Scout Merit Badge Workshops. This help would have continued this year, but there were unfortunately no girl scouts to sign up for the event causing it to be canceled. The relationship between UW-ANS and WIN will, of course, continue in the future and be just as strong as it has been in the past.

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### AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

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The Engineering Mechanics/Engineering Mechanics and Astronautics (EM/EMA) program is within the same department (Engineering Physics) as the Nuclear Engineering program at UW-Madison. As such, the student organization associated with the EM/EMA degree, AIAA, and UW-ANS commonly coordinate events together, in a very similar manner as WIN.

This year, UW-ANS and AIAA coordinated on a number of events during the semester. UW-ANS invited guest speaker Kerry Lee of NASA to speak in the fall and was able to coordinate with AIAA to co-host the event and have their own students attend. In addition, UW-ANS and AIAA organized two discussion sessions (Industry Liaison Committee Meeting) for students to give feedback to the Department of Engineering Physics. And finally, UW-ANS and AIAA will continue the softball rivalry that started last year with the 2<sup>nd</sup> Annual ANS vs. AIAA Softball Game to be held on May 9<sup>th</sup>.

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### SOCIETY OF WOMEN ENGINEERS

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This year was the start of a positive relationship with the Society of Women Engineers (SWE) at UW-Madison. SWE hosted two U.S. Navy lieutenants in the fall in which ANS was invited to attend. As well, SWE organized a Student Org Trivia Night at a local restaurant to create some light-hearted friendly competition among College of Engineering student organizations. Lastly, though it was not successful, UW-ANS coordinated with both SWE and WIN to host a guest speaker and UW-Madison alum, Sarah Kovalski of Ameren Missouri. Due to scheduling conflict, this event was never realized though it is hoped to occur during the next school year.

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### ENERGY HUB

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Energy Hub, or E-Hub, is a student organization in the College of Engineering focused on discovering renewable energy resources and improving the quality of the environment through engineering. The president of E-Hub for the 2013-2014 academic year was another nuclear



engineering student and member of UW-ANS so it was easy to contact this student organization about activities. Both UW-ANS and E-Hub successfully co-hosted guest speaker Timothy Donohue of the Great Lakes Bioenergy Research Center. His talk was centered alternative energy, specifically biofuels, a topic that is often of interest to nuclear engineering students but not necessarily taught in classes.

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## POLYGON STUDENT COUNCIL

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Polygon Student Council is the overall governing student body for the College of Engineering. In the past, they have been primarily recognized as a source of funding for other student organizations in the College. However, this year they have requested more involvement from student organizations and their leaders to help improve the College of Engineering. This year, the President Kalin Kiesling and Vice-President Matthew Jasica, attend regular meetings to help give feedback to the College. As well, the Dean Robertson, Dean Cramer, and Polygon all recognized the usefulness of the Industry Liaison Meeting (a discussion session ran by ANS and AIAA for students to give feedback to the department) and decided to implement similar meetings modeled by the ILC Meeting in all the departments within the College of Engineering. In addition, Polygon tries to promote leadership growth in students throughout the College. This year, Polygon, with the Student Leadership Center, hosted a one-day leadership workshop called CATALYST. This is a smaller condensed version of the workshop ran by LeaderShape, a world-renowned leadership workshop. UW-ANS sent three young student members, Virginia Haupt, Xavier Durawa, and Garrett Andrews, to this workshop to help them strengthen their leadership skills.

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## COORDINATION WITH ANS LOCAL SECTIONS

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The state of Wisconsin has its own professional local section of ANS. This year, professional participation and involvement in the ANS Wisconsin Local Section grew significantly and as a result, there was increased involvement with UW-ANS. This year, the WI Local Section decided to host two general meetings on campus, one in the fall and one in the spring. They encouraged students to attend these meetings and there was in fact very high student turnout at each meeting. These two meetings allowed for students to network with several different professionals from around the state of Wisconsin and listen to several presentations on a wide variety of subject matter. Both meetings were huge successes and they will hopefully continue in the years to come.

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## ANS NATIONAL CONFERENCES

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UW-ANS has once again made a presence at the 2013 Annual Meeting, the 2013 Winter Meeting, and the 2014 Student Conference. These conferences provide excellent opportunities for students to present their research and projects to other professionals, network with other professionals and students, and talk with recruiters at the career fairs.

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## 2013 ANNUAL MEETING

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This year, UW-ANS funded one graduate student, Mahima Gupta, who has not been able to attend an ANS National Professional Conference in the past. UW-ANS hopes to be able to fund more students to attend the Annual Meeting in the future.

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## 2013 WINTER MEETING

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This year, UW-ANS was able to fund many students to attend this conference. Ian Jentz and Andrew Shepard both attended to give a podium presentation on their research. Jorge Narvaez presented a poster at the student poster session for his research. Kalin Kiesling, Matthew Jasica, and Gary Stange were all funded to network with professional members of ANS and ANS Divisions. Sponsorship for this was provided by the Department of Engineering Physics and Excel Services.

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## 2014 STUDENT CONFERENCE

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The 2014 Student Conference at Penn State was attended by one of the highest number of UW-ANS students. This year, the conference was attended by 24 students ranging from freshmen undergraduates to graduate students. Many of the students that attended were representing UW-ANS and to learn what is like to attend these conferences so that they might apply what they learn to hosting a future Student Conference if UW-Madison is chosen. As well, two students submitted for a podium presentation and poster session but neither were chosen. UW-ANS coordinated all logistics for travel and lodging for this conference as well as provided lodging funding to all members. Lodging funding, as well as a portion of transportation funding, came from grants by the Polygon Student Council and Dominion. To help save on travel costs, 23 of the 24 students traveled by means of four rental cars. This proved to be an interesting yet fun experience. Overall, the students found this conference engaging and fun and were able to meet many new students from other schools as well as professionals.



FIGURE 3 - THE GROUP OF STUDENTS AND THE UW-ANS FACULTY ADVISOR THAT ATTENDED THE STUDENT CONFERENCE AT PENN STATE AFTER THE NETWORKING DINNER

## PUBLIC INFORMATION AND OUTREACH EVENTS

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### BOY SCOUTS

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Some of the largest outreach efforts of the UW-ANS student section are the Nuclear Science Merit Badge Workshops. These workshops continue a tradition of excellence nearly a decade old, offering an environment for young scouts in the Boy Scouts of America (BSA) to earn their nuclear science merit badge. The workshops provide a junction of today's ANS members and tomorrow's scientists, engineers, and leaders

These workshops reach out not only to the Madison area but also draw participants from Illinois, Minnesota, and even Iowa! During the 2013-14 year the UW-ANS student section hosted a total of 351 scouts and 164 adults at three fall semester and three spring semester workshops. Advertising for these workshops is done through our website and through a network of BSA troops and councils grown from year to year. All registration and record keeping is done electronically, with records of each workshop and semester saved for posterity. Each workshop hosts up to 70 scouts and 30 adults at a maximum, and most of these workshops are filled up weeks in advance. The workshops are aimed primarily at scouts in 7<sup>th</sup> through 12<sup>th</sup> grade, but these workshops have seen many younger motivated scouts be very successful as well. The only prerequisite for this workshop is a homework assignment, also completed and submitted electronically, that goes over basic nuclear science and terminology. This assignment ensures that scouts are familiar with concepts such as the building blocks of matter and radiation before the workshop so that the workshop itself may focus on more engaging activities.

Each workshop goes from 10 AM to 4 PM, and includes a one-hour lunch break during the middle of the day. All scouts and adults begin the workshop together with a brief review of the homework, introduction to nuclear reactions including fission and fusion, and a discussion of radiation safety. During this time scouts also build models of atoms using pipe cleaners and small pom poms, draw examples of nuclear reactions, and draw the radiation hazard symbol. After this the scouts split into up to 5 groups and rotate through various stations. Two of these stations are tours that reinforce the earlier discussion of fission and fusion by touring the University of Wisconsin Nuclear Reactor and the Inertial Electrostatic Confinement Fusion laboratory. Each tour is led by students currently working in the respective lab.



FIGURE 4 - A BOY SCOUT OBSERVES ALPHA PARTICLE TRACKS IN A CLOUD CHAMBER

The other three stations consist of a hands-on radiation counting station, a cloud-chamber station featuring homemade chambers and a simulation of half-life with “radioactive skittles”, and finally a presentation on careers and applications in nuclear engineering. A lunch break is held halfway through the day and oftentimes this will feature a guest presentation from the Wonders of Physics, which features many exciting demonstrations and encourages scouts to learn how the world around them works. At the end of the day, scouts who have successfully completed the workshop walk away with a signed blue card, signifying that they have earned their nuclear science merit badge. Those who struggled with the initial homework assignment are encouraged to use their experience from the day to resubmit their homework for a passing grade. UW-ANS recognizes that some of this material can be difficult for Scouts to learn, especially for those who are learning about it for the first time.

Of course, none of these workshops would be possible without the volunteering efforts of the UW-ANS members. Each workshop will have a staff size of anywhere from 10 to 20 volunteers who assist for either half-day or all-day shifts. These volunteers work at the detectors, cloud chambers, and careers stations (with 2-4 volunteers per station) and also help out with set-up, registration, and cleaning up. Volunteering for these workshops is a way for many younger members of ANS to get involved and with the organization. It also is a great way for students to practice discussing what they have learned in school to a non-technical audience. Besides sharing their knowledge with the Scouts, many volunteers will also discuss nuclear energy and related topics with the adult attendees, showing that there is something new for everyone to learn at these workshops.

Boy Scout Coordinator Matthew Jasica used his previous year’s experience as Coordinator to continue the success of these workshops. Special care was taken to introduce as many new volunteers as possible to this program in order to increase the pool of members familiar with each station. The workshop’s presentations and worksheets continue to evolve in order to enhance the

scouts' learning and to present the most up-to-date, accurate information on current issues including Fukushima and spent fuel that are of interest to the audience. One of Matt's goals for the next round of workshops is to build a brand-new set of homemade cloud chambers using a more robust design that should allow for increased visibility of alpha particle tracks and better survive the wear and tear suffered by a chamber during a typical workshop. UW-ANS is very proud of its Nuclear Science Merit Badge Workshops and anticipate their continued growth and success.

TABLE 2 - ESTIMATED ATTENDENCE AT BOY SCOUT MERIT BADGE WORKSHOPS

<b>Academic Year</b>	<b>Workshops</b>	<b>Attendee Estimates</b>
<b>'06-'07</b>	5	240 Scouts, 120 adults
<b>'07-'08</b>	5	250 Scouts, 120 adults
<b>'08-'09</b>	6	300 Scouts, 150 adults
<b>'09-'10</b>	5	229 Scouts, 119 adults
<b>'10-'11</b>	6	360 Scouts, 150 adults
<b>'11-'12</b>	5	250 Scouts, 115 adults
<b>'12-'13</b>	6	350 Scouts, 150 adults
<b>'13-'14</b>	6	350 Scouts, 160 adults

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## ESSAY CONTEST

Most every year, UW-ANS hosts an Essay Contest for high school seniors. The award for winning the Essay Contest is a \$500 scholarship useable at any university or college. The funding for this scholarship was provided this year by a generous donation by the Department of Engineering Physics, to which UW-ANS is very grateful. The essay prompt is always provided ahead of time by the executive board. This was the essay prompt for this year:

"Right now there is talk of building Small and Medium-sized Reactors (SMRs) for electricity production. An SMR is defined by the IAEA as a nuclear reactor that has less than a 700 MW (electric) output. For what reasons, if any, do you think the power industry around the world should move toward the use of SMRs? Support your opinion with facts."

Initially when the prompt is released, students will visit their past high schools and other area schools to give a short outreach presentation on nuclear science and engineering as well as announce the scholarship opportunity. This year there was unfortunately only one student who was able to visit their past high school to give the presentation and announce the scholarship. There were two total submissions this year which is actually an increase from previous years in which there were only one or zero entries.

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## SCIENCE OLYMPIAD

For the past eleven years, UW-ANS has been willfully working with the Wisconsin Young Scientists of America (YSA) Science Olympiad (SO) program. This year there were three main pillars of this relationship. The UW-ANS mentorship at a local Middle School, assisting at the Regional Competition, and holding a booth at the national SO conference held in Madison.

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## MENTORING

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This year, UW-ANS members served as mentors at Sennett Middle School. They helped with Boomilevers, Rotors, Simple Machines, and numerous other events.

Most of these are the construction events or topics that the coaches weren't as knowledgeable in. These required a lot of time to actually build and construct the various projects. The students at the middle school were able to bounce ideas off of the UW-ANS students and UW-ANS was able to provide guidance in the assembly and building process.

The mentorship took place from late October to April. Every week, two to three students departed UW-Madison and headed to Sennett Middle School for two hours of design and construction. At the end of the semester, a transition was made to new volunteers due to class conflicts. In addition, the day was changed from Wednesdays to Tuesdays.

During the regional tournament in March, the Sennett team was allowed to test their progress. They literally found the weak spots in their construction and they and the UW students went back to the drawing board with a renewed vigor. Redesigning, reconstructing, and recalibrating for the next few weeks, the team made another strong push to compete at the state competition. All in all, it was a relatively successful year, but there were no amazing victories by the Sennett team.

In addition to providing volunteer and outreach opportunities, Science Olympiad does also provide a lot of the funding ANS receives. The College of Engineering pays ANS per hour of work as well as pays for the transportation vehicles.

## ENGINEERING TOMORROW'S CAREERS

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This past summer, UW-ANS was asked to participate in a summer camp called Engineering Tomorrow's Careers (ETC) hosted by the Society of Women Engineers (SWE). ETC is a camp for high school junior and senior females interested in studying engineering in college. A group of UW-ANS students put together a presentation to teach the group about what it is like to be a nuclear engineering student at UW-Madison and some career opportunities after graduation. This was success last summer and UW-ANS was just invited back to participate again this coming summer.

## CAMP BADGER

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Camp Badger is a program that allows talented Wisconsin middle school students to visit UW-Madison for a week to learn about science and technology over the summer. A donor provided a sizable grant to Camp Badger so that it could incorporate a module on nuclear science to attending students. Thus, UW-ANS was asked by John Murphy of the Nuclear Engineering Department to provide a series of modules to teach the students about nuclear science after he gave them an overview presentation. UW-ANS agreed to host three hands-on modules for all five Camp Badger sessions.

## CAPITAL SCIENCE AND ENGINEERING FAIR

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UW-ANS jointly provided the student volunteers needed to run the Capital Science and Engineering Fair (CSEF) with the Society of Women Engineers (SWE) and the American Society of Materials (ASM). The job of the student volunteers was to support the judges and volunteers as needed. This



included printing and organizing the brochures, serving as chaperones during the campus research lab tours, and arranging the display areas to suit CSEF needs. Since the CSEF is part of the Wisconsin State Science Fair, it was a perfect opportunity for UW-ANS members to encourage and support local high school students in math and science. The UW-ANS volunteers who helped with this event were Jon King, Kalin Kiesling, and Jennie Aylyng.

## BADGER STATE SCIENCE AND ENGINEERING FAIR

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The Badger State Science and Engineering Fair (BSSEF) is a state-wide high school science fair hosted at University of Wisconsin-Milwaukee in March. In the past, UW-ANS has provided an award for “Best use of Nuclear or Radiation Sciences” at the fair. This year, though, UW-ANS was actually able to send two students, Kalin Kiesling and Eliza Mitchell, to this event as judges, something that has not necessarily been done in the past. There they awarded the one student with a \$100 prize for have the best project demonstrating nuclear or radiation sciences.

## “PANDORA’S PROMISE”

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Last year, producer and University of Wisconsin alum, Robert Stone released a movie called *Pandora’s Promise*. This movie is documentary about the nuclear power debate currently faced in the United States. UW-ANS worked alongside the Tales from Planet Earth Film Festival held in November to bring this film to the University of Wisconsin. UW-ANS was able to help organize a panel for a Q&A session after the film moderated by the UW-ANS Faculty Advisor Paul Wilson. The panel consisted of both students and professionals from both sides of the debate. The public attendance at the screening of the film was tremendous with a completely filled theatre.

## COMMUNITY SERVICE

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### ADOPT-A-HIGHWAY

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UW-ANS participated in Adopt-A-Highway for the tenth consecutive year. Members cleaned a two mile stretch of University Avenue between county highway Q and Old Middleton Road. Per the requirements of the program, participants are required to clean the highway a minimum of three times between April 1st and November 1st of every year. Following cleanup, participants are typically rewarded with food. During the academic year, a group of students went out to clean the UW-ANS stretch of highway twice.

### ENGINEER’S WEEK

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During E-Week (February 16th through 22nd), members of the student organizations of the College of Engineering compete against one another in a series of events hosted by participating student organizations. UW-ANS fought its way to third place in the competition by participating in events such as E-Weekopoly, Chubby Bunny, Mario Kart racing, Duct Tape Your Friend to a Wall, and more, as well as a Mr. and Mrs. Engineer Contest.

In addition to participating in events, UW-ANS also hosted three events: the Mickies Scrambler Eating Contest, the Energy Game, and the Tug-of-War Tournament.

The Mickies Scrambler Eating Contest is an event in which participants eat as many scramblers from Mickies Dairy Bar as they can throughout the entire week. This event is also an excellent community service activity, as both Mickies and UW-ANS donate \$1 for every scrambler eaten to a foundation or charity of the winning team's choice. This was the eighth year that UW-ANS has hosted and won this event during E-Week. A total of \$265 was raised and donated to the American Heart Association.

The Energy Game was another event that UW-ANS hosted, and it was an excellent public outreach opportunity as well. The game consists of having student organization teams answer engineering and energy related questions; upon answering these questions correctly, that team can then buy power plants (whether nuclear, solar, wind, coal, etc.) to generate electricity. As UW-ANS makes up all the questions, the organization was not allowed to compete in the game itself; however, hosting the event still helped UW-ANS's standing in E-Week and gave UW-ANS the opportunity to teach other student organizations about electricity generation and review some engineering trivia.

The final event that UW-ANS hosted during E-Week was the Tug-Of-War Tournament. This was UW-ANS's second year hosting this event, and it went decently well. Numerous teams turned up. Due to the size of the rope, teams were limited to three participants, but this just allowed more teams to vie for the top position in the competition.

## INDUSTRY LIAISON COMMITTEE MEETING

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The Engineering Physics Department hosts a group of high ranking alumni from across the nuclear and aeronautics career fields every year. These alumni form the Industrial Liaison Committee (ILC), and the purpose for their visit is to provide the department with advice on how to improve. Part of the time spent at the department is with the students, where the students are given the opportunity to anonymously voice concerns and suggestions to the committee. Prior to the ILC's visit, UW-ANS, AIAA, and a representative from the Engineering Physics program organize a meeting with their members to brainstorm comments, and the Presidents of the two organizations write up a report detailing those comments to present at a later date to the ILC.

This year, the ILC visited the department on the evening of April 24th, and met with undergraduate and graduate students of the Engineering Physics Department over dinner. UW-ANS President Kalin Kiesling, AIAA President Andrew Udelhoven, and EP Program Representative Blair Seidlitz presented their report of the students concerns to the ILC. Other students present at the meeting added their input as well and brought up other concerns and improvements.

## PROFESSIONAL DEVELOPMENT

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### ANS STUDENT CONFERENCE PROPOSAL

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One of the primary goals of UW-ANS for this year was to complete a bid for the 2015 American Nuclear Society Student Conference. Bid Chairs Kalin Kiesling and Matthew Jasica led a committee of 15 other members in pursuit of this objective. The remainder of the committee was split into five



subcommittees: Technical, Finance, Hospitality, Activities, and Publicity. Support was received from the faculty advisor, Engineering Physics Department Chair Jake Blanchard, and Dean of the College of Engineering Ian Robertson. The committee also interacted with representatives of the Madison tourism industry, most notably Manager Michael Ferguson of the Madison Concourse Hotel, the site of the proposed conference, and Ann Shea, Senior Convention Sales Manager for the Greater Madison Conventions and Visitors Bureau.

This momentous effort was started as early as June 2013 and finished in the final weeks of February 2014. During the fall semester general meetings were held every other week to cover general information and advise the Committee on upcoming goals and objectives. During off-weeks the individual subcommittees met to discuss and accomplish their respective tasks. By the end of the fall semester the significant planning milestones had been completed.

The goal of the spring semester was to compile the final bid document for submission. Over the Winter Break Committee members drafted their respective portions of the document. Once the semester started meetings were held weekly in order to direct the Committee on what components needed to be revised and to review the current progress. On March 1<sup>st</sup>, after weeks of painstakingly editing and reviewing the document, the bid was submitted to the Student Sections Committee of ANS National.

Although UW-Madison was not selected to host the 2015 Student Conference this effort was a valuable experience for those who participated. The bid committee included many students new to UW Madison and UW-ANS members who had not been previously involved in the section. It also provided the Committee members a unique insight into the planning of an event of this magnitude. Based on the feedback received from the SSC, UW-ANS plans to update and resubmit another bid for the 2016 Student Conference.

## NUCLEAR BATTERY PROJECT

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In fall of 2013, a small group of UW-Madison students in UW-ANS started an independently funded project to research nuclear batteries. Betavoltaic nuclear batteries, which utilize beta-emitting radioisotopes as their source of power, have recently sparked interest due to advancements in micro- and nano-electronics. These devices open a window for betavoltaics; in ultra-low power applications, betavoltaics vastly outperform chemical batteries in longevity and energy density. With the help and advisement of Department Chair James Blanchard, who has extensive research experience with betavoltaic microbatteries, and other faculty, the team hopes to build a functional nuclear battery. They are considering cutting edge technology such as diamond semiconductors for their design, and investigating local companies that can help make this kind of product. The project has created a nuclear battery concept called RaPID (Radioisotope Powered Isolated Device), which has won \$800 in contests such as the Energy and Sustainability Challenge so far. The UW-ANS Nuclear Battery team will continue to enter competitions like this in order to obtain the funding required to build the first RaPID concept demonstration. The project this year was lead by Design Chair Xavier Durawa and will continue into future semesters with hopes that this can be the start for more hands on projects of the like.

## POINT BEACH NUCLEAR POWER PLANT TOUR

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This spring, UW-ANS was able to organize a nuclear power plant tour which was very popular among students, as they always have been in the past. This time, a group of 15 students was invited by Richard Woods, a nuclear engineer at Point Beach Nuclear Power Plant in Two Rivers, WI, to visit the plant and receive a personal tour at the end of April. Students received highly educational tour about the plant and were able to challenge the engineers present with their technical questions. Point Beach has a very nice public visitor center with an interactive museum with made for a well rounded and easy going day.



FIGURE 5 - THE GROUP OF UW-ANS STUDENTS AND RICHARD WOODS ALL GEARED UP AT THE POINT BEACH VISITOR CENTER PRIOR TO ENTERING THE PLANT

## SOCIALS

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In addition to the professional development opportunities provided, UW-ANS hosts many socials for its members throughout the year. These events give students the ability to relax in a social setting and network. These events help build camaraderie between all of UW-ANS, including students, faculty, alumni and friends.

## DEVIL'S LAKE

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As is becoming tradition, this year's first social outing was a one-night camping trip at Devil's Lake State Park in Baraboo, WI. The trip occurred just before the start of the academic year and so it was attended by members from the previous year. This year's 14 participants indulged in the many activities that this park has to offer, including hiking the bluffs surrounding the lakes, fishing, swimming, and even running on some of the trails. Participants were fortunate this year to have immaculate weather for the entire trip. The night was concluded with a cookout of burgers and hot dogs and a freshly-baked peach cobbler while relaxing around the fire. This trip was a blast for all who attended and a great way to blow off some steam just before the start of the school.



FIGURE 6 - RELAXING AT THE PEAK OF A HIKE AT DEVIL'S LAKE

## PIC-NUKE

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Another tradition, Pic-Nuke is a cookout hosted by UW-ANS twice a year— a couple of weeks into the start of the fall semester and then before the last week of classes at the end of the spring semester. The event is just a few blocks away from campus at the Henry Vilas Park in Madison, WI. Everyone in the Engineering Physics Department including students, faculty, family, and friends are invited to attend, and it is a great way to introduce many new students to UW-ANS for the first time. Typically food is served for over 80 guests over the course of the night.



FIGURE 7 - ATTENDEES OF THE FALL 2013 PIC-NUKE

## GAMES NIGHTS

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Following the kick-off meetings each semester UW-ANS hosted a games' nights. A plethora of games were provided by members, including chess, Munchkin, and Super Smash Bros. on the ever so archaic GameCube. Ice cream and a variety of toppings were enjoyed by the 15-20 attendees.

## “CORN MAIZE” ADVENTURE

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As the weather gets chillier, the farm area around Madison becomes host to another beloved activity—the corn maze. This year 12 UW-ANS members journeyed to the Schuster’s Farm in Deerfield, WI to tackle their corn maze challenge. The maze did not disappoint! The UW-ANS group took nearly two hours to finish the enormous maze. Afterwards, the group recovered at the farm base by munching on donuts and sipping hot apple cider.

## CURLING

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Wisconsin is a center of many unique traditions and activities, including the sport of curling. Ten UW-ANS members visited the Madison Curling Club to learn and play this game for the first time. Fortunately, the UW-ANS members were quick learners. Everyone spent the last hour of the outing playing a competitive game that ended 3-2. Not bad, considering most students had just learned the game that day!



FIGURE 8 - MEMBERS LEARNING TO “THROW” AND “SWEEP” THE CURLING STONE

## ICE SKATING

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While this winter was one of the coldest and snowiest that Madison has seen recently, this was good news for winter sports enthusiasts! The UW-ANS group took to the nearby ponds at the Henry Vilas Park to enjoy an afternoon of outdoor ice skating and casual ice hockey. Again, participants graced by nice weather and were fortunate that this day was one of the warmer days of the winter, and ideal for skating.





FIGURE 9 - STUDENTS ENGAGE IN A FRIENDLY GAME OF ICE HOCKEY ON THE FROZEN LAGOON

## WISCONSIN BREWING COMPANY TOUR

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This year UW-ANS visited one of the latest additions to the Madison brewing scene, the Wisconsin Brewing Company. Being a young brewery the plant was smaller, but evidence was abounding of WBC's aggressive expansion plans. The staff was nonetheless excited about their beer and happy to show the students, especially the young group of engineers, how their beer is made and answer questions. Of course, no trip to a brewery would be complete without sampling their four different beers after the tour.

## PAINTBALL

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As a way to blow off steam before the last week of classes, the UW-ANS student section will have a paintball outing at Apocalypse Paintball outside of Madison early this May. Last year's outing was such a great success that the section demanded it return again this year. Bruises, welts, sweat, tears, and a good time are anticipated for all attending.

## ANS VS. AIAA SOFTBALL GAME

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As a tradition that started last year, at the end of every spring semester members of UW-ANS and AIAA, as well as members of the Department of Engineering Physics, meet up at Henry Vilas Park in Madison for a friendly softball competition. Sadly, UW-ANS lost last year's game so they are hoping to bring home a win this year on May 9<sup>th</sup>. It is rumored that this year there will be a trophy for the winning team to take home that can be passed between the two teams each year.

## BREAKFAST AT MICKIES DAIRY BAR

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In addition to the occasional social outings, UW-ANS also has a long-standing tradition nearly a decade old of weekly breakfasts at Mickies Dairy Bar. Students, faculty, and occasionally some ANS

guests or visiting alumni meet at 7 AM every Friday morning at this diner nearby campus to start off the final day of the week.

## COFFEE AND DONUTS

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Every Wednesday UW-ANS makes coffee and provides donuts from the local Greenbush Bakery on the second floor lobby of the Engineering Research Building, the home of the Engineering Physics department. This is another great UW-ANS tradition that has been around since 2005. Students and faculty often take a few minutes to network and chat between classes.

## THE FUTURE OF UW-ANS

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UW-ANS has been very lucky this year with the high level of involvement of the younger students. This is good because the younger students are taking on leadership roles early on so they have time to highly develop their leadership skills for later. The executive board next semester is in general a very young board so there will be a lot of opportunity for growth and development of the students. Having this young governing board will help with participation of incoming freshmen which is a student demographic that is often lacking in most student organizations.

It should also be noted that there are experienced members continuing on the executive board next year to aid in changeover to the young group. This year's Treasurer Ian Jentz was reelected for another year as treasurer on the executive board next year. His experience will help guide the new board next year. As well, the incoming President Kazi Ahmed, Vice-President Drew Nigh, and Public Information Kelsey Amundson all have previous executive board experience. In addition, everyone that was on the 2013-2014 executive board will still be in attendance at University of Wisconsin-Madison during the next year so they will be available to answer questions when necessary. As well, every officer during the 2013-2014 year has been charged with the task of developing a manual for their respective positions that can be updated as new things are learned each year.

Having a young incoming executive board is excellent for young student involvement but it will be a challenge next year to get more graduate students involved in UW-ANS. The graduate student portion of UW-ANS has been on a slow decline over the last few years and the executive board and other UW-ANS members will have to work extra hard to increase graduate student involvement.

## CONCLUSION

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The University of Wisconsin - American Nuclear Society has had over 50 years of experience providing members the opportunity to reach out to the general public, volunteer in the community, increase professional interaction, and even learn a little more about nuclear science themselves. The Student Section has consistently received thanks and praise from members of the community as well as parents and students at events. All of the members of the society have been nothing short of extraordinary this year. With the many new projects that have been started this year, the level of opportunity and involvement of students, especially young students, has risen tremendously. The University of Wisconsin-Madison Student Section is prepared for several more years of just as much, if not more, involvement.