American Nuclear Society
University of New Mexico

University of New Mexico

American Nuclear Society

Student Section 2017-2018

Submitted on May 2nd, 2018

Samuel J. Glasstone Report 2017-2018

Tel: 505.277.5431

Email: unmans@unm.edu

Website: http://student.ans.org/nm/

Farris Engineering Center 1200

1 University of New Mexico

Albuquerque, NM 87131-0001

TABLE OF CONTENTS

INTRODUCTION

The American Nuclear Society Student Section of The University of New Mexico, (ANS UNM) embarked itself in a profound change on the summer of 2017. Melissa Moreno and Gemma (Ira) Strong decided to become the chairs of the student section of the ANS UNM. The initial goal was to be able to apply to the Samuel Glasstone Award, we decided to create a plan to comply with the (7) areas services. These areas are: Public Information, Community/Public Service, University Service, Professional Development, ANS/Nuclear Industry Support, Social Events and Section Management.

Therefore, we create an executive committee that was going to be able to comprise all the activities describe in the Glasstone Award criteria. These are the positions: President, Vice-President, Treasurer, Internal Communications Officer, External Communications Officer, Professional Development Officer, Outreach Officer,

In previous years the ANS UNM Student Section wasn't being as active as know but we believe that by implementing procedures and passing on clear information about the section management to the next executive committee will make the difference to continue the work that we been doing this year at ANS UNM.

Looking Ahead

To be able to continue the efforts of the ANS UNM student section, we have created handbooks for each specific position. These handbooks have the specific guidelines, tips and suggestions to continue the line of success of the previous executive committee. Besides that, we have created a SharePoint where we added files for online team collaborations and content management. We uploaded all our files there and everybody from the ANS UINM Executive Committee can access those files. All this information will serve as an aid to follow the best practices for the student section management.

SECTION MANAGEMENT

The American Nuclear Society Student Section of The University of New Mexico, (ANS UNM) was specifically designed to meet with the Glasstone Award criteria, and to follow the purpose of ANS National which is "to promote the awareness and understanding with regard to the application of nuclear science and technology." To meet with the proposed guidelines, the ANS UNM Student Section uses two groups to run the organization: Executive Committee and Faculty Advisor. Students are elected from the section to serve on the executive committee on an annual basis; this is the primary body that runs the student section. Students from the section who are particularly interested in helping to make the section successful can volunteer to chair committees and coordinate events. The faculty advisor is a member of the UNM Faculty willing to provide senior counsel on decisions for the student section.

Executive Committee 2017-2018

In the summer of 2017, Melissa Moreno and Ira Strong, carefully drafted the bylaws to ensure that the executive committee serves its intended purpose and does not exceed its authority. The bylaws took into consideration ANS bylaws and ASUNM (Association of Students of the University of New Mexico) rules which often limit the decisions that can be delegated to committees. Requiring the executive committee to take minutes each board meeting following Robert's Rules of order for any action, so that they can be ratified by the full executive committee to ensure that no one exceeds its authority. Below we are listing the description of each position and their officers.

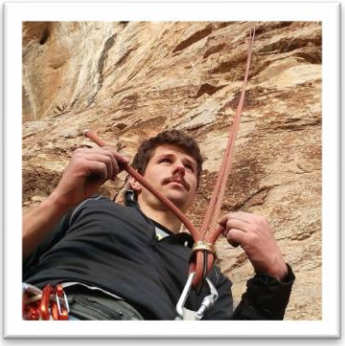
President, Gemma (Ira) Strong (Sophomore)

- External relations and fundraising
- Leads meetings
- Facilitates interactions with ESS, SOE, NE Dept. and ASUNM
- General planning and leadership of club
- Thank-you cards

Vice President, Melissa Moreno (Junior)

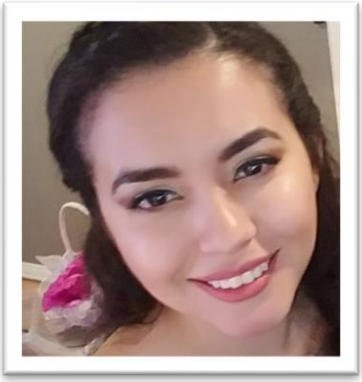
- γ Focused on internal affairs
- γ Leads meetings when president is unavailable
- γ Co-plans ANS Student Conference (Spring)
- γ Plan social events
- γ Fundraising from departments

Treasurer, Ben Holdridge (Sophomore)



- γ Responsible for budgeting
- γ Reimbursements and office hours
- γ Help with event budgets

Internal Communications, Ramda Galo (Junior)



- γ Meeting minutes and follow up emails
- γ Takes attendance
- γ Manages listserv
- γ Keeps track of Gamma points
- γ Forms and surveys
- γ Food for meetings

External Communications, Deep Patel (Junior)

- γ Manages website and calendar
- γ Conference planning for spring and fall
- γ Book flights and rooms
- γ Pre-conference meetings
- γ Run social media accounts
- γ T-shirts
- γ Conference photo

Outreach Manager, Phoenix Baldez (Graduate Student)

- Plan outreach events
- Work with clubs around campus
- Plan exciting and engaging activities to keep girls interested in STEM

Professional Development, Joseph King (Junior)

- Conference planning for spring and fall
- Book flights and rooms
- Help with pre-conference workshop
- Coordinate volunteers for events
- SOE networking events

Graduate Student Representative, Corey Skinner (Graduate Student)

- Appropriation for Graduate Students
- Serve as the link between undergraduate and graduate students

ANS Trinity Committee

The ANS UNM Student Section got very involved at the ANS Trinity Professional Section attending to all their Executive Committee meetings (4) per year, and because of this they created a Scholarship Committee to award $500 each to (2) UNM students that had a great participation and involvement at the ANS UNM Student Section. The ANS UNM Student Section President is part of the Executive Committee of the ANS Trinity Professional Chapter.

Faculty Advisor

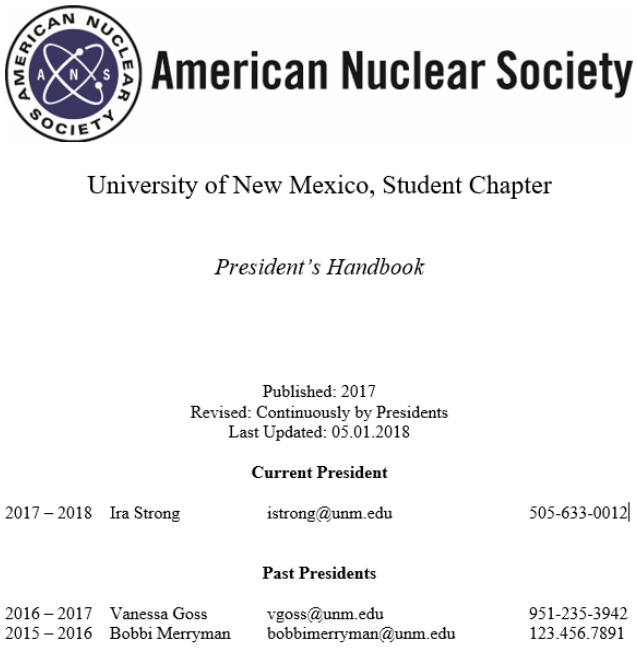
The Faculty Advisor for ANS UNM is there to provide the chapter with advice and act as a liaison between the organization and the department. Often, the Faculty advisor retains his position for many years, so they can provide valuable information to the organization, as the Executives and Chairs often are served by people new. This year, the Faculty Advisory was Dr. Osman Anderoglu, who is a new faculty at the UNM Nuclear Engineering department but has shown great interest in students and their academic success.

OPERATIONS

The ANS UNM Student section attribute its success to the implementation of administrative procedures which ensured and will ensure smooth operation of the section. These procedures made it possible for turnover between the previous executive board and this year's executive board to go smoothly. Because of documents, processes, and experience provided to the incoming executive board, future turnovers between executive board members are simplified.

Documentation of procedures for each specific Executive Committee Procedures are available as the Handbook's Officers. This is the first that that the student section has been able to keep relevant information that was gather during the semester to be able to provide a smooth transition to the next executive committee.

These manuals contain all relevant policy and procedure documentation. They detail what the manual must include, who is responsible for writing and updating the policies and procedures, and how the Executive Committee communicates internally and externally. One of the main responsibilities of this year's officers was the creation of these manual, and the idea is that they will be updated every year as information and technology changes.



American Nuclear Society

University of New Mexico, Student Chapter

President's Handbook

Published: 2017
Revised: Continuously by Presidents
Last Updated: 05.01.2018

Current President

2017 – 2018	Ira Strong	istrong@unm.edu	505-633-0012

Past Presidents

2016 – 2017	Vanessa Goss	vgoss@unm.edu	951-235-3942
2015 – 2016	Bobbi Merryman	bobbimerryman@unm.edu	123.456.7891

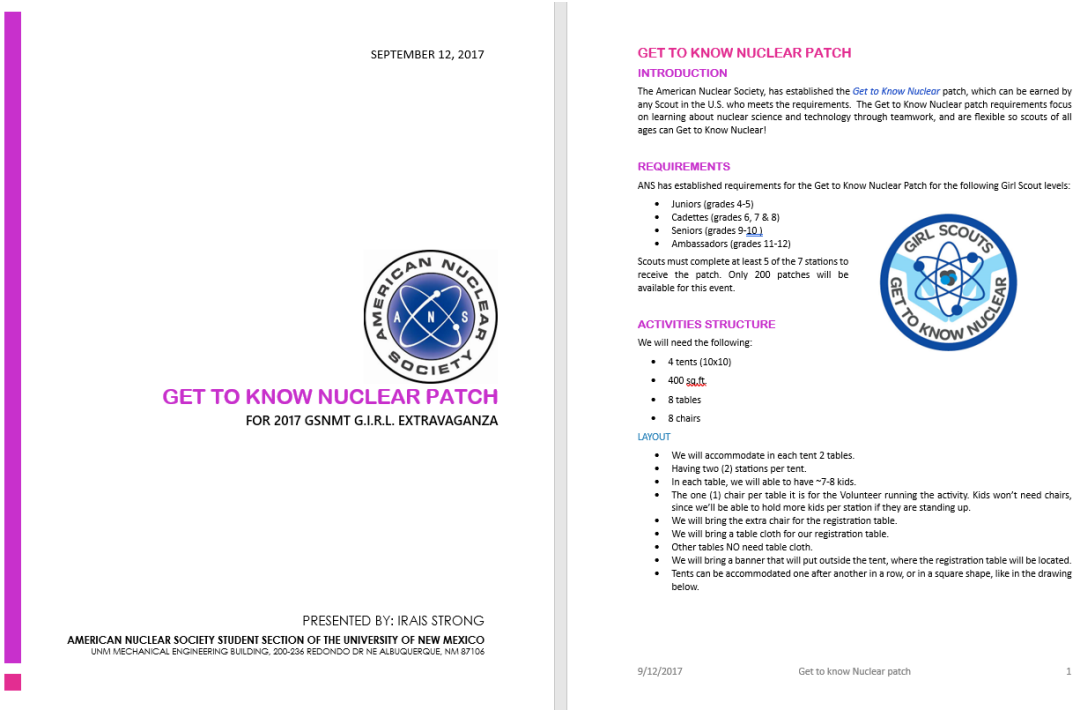
Figure 1 Example of President Handbook

Authorizations and Approvals

In our manuals we describe that to approve expenditures or taking any other decisions most of the officer's need to agree following Robert's Rules of Order. If the decision is a matter of expenditure even after the matter was accepted, at least (3) officers are required to signed Internal Requisitions.

Supporting Documentation

Strong internal control systems rely on supporting documentation to detail the basis for decisions. One example are the outreach events, since each outreach events may differ in the content we have to provide a different way to approach the activities and adjust for the type of event. That's why we have created Manuals for some outreach events that can be use for future events.



SEPTEMBER 12, 2017

GET TO KNOW NUCLEAR PATCH

FOR 2017 GSNMT G.I.R.L. EXTRAVAGANZA

PRESENTED BY: IRAIS STRONG

AMERICAN NUCLEAR SOCIETY STUDENT SECTION OF THE UNIVERSITY OF NEW MEXICO

UNM MECHANICAL ENGINEERING BUILDING, 200-236 REDONDO DR NE ALBUQUERQUE, NM 87106

GET TO KNOW NUCLEAR PATCH

INTRODUCTION

The American Nuclear Society, has established the *Get to Know Nuclear* patch, which can be earned by any Scout in the U.S. who meets the requirements. The Get to Know Nuclear patch requirements focus on learning about nuclear science and technology through teamwork, and are flexible so scouts of all ages can Get to Know Nuclear!

REQUIREMENTS

ANS has established requirements for the Get to Know Nuclear Patch for the following Girl Scout levels:

- Juniors (grades 4-5)
- Cadettes (grades 6, 7 & 8)
- Seniors (grades 9-10)
- Ambassadors (grades 11-12)

Scouts must complete at least 5 of the 7 stations to receive the patch. Only 200 patches will be available for this event.

ACTIVITIES STRUCTURE

We will need the following:

- 4 tents (10x10)
- 400 sq.ft.
- 8 tables
- 8 chairs

LAYOUT

- We will accommodate in each tent 2 tables.
- Having two (2) stations per tent.
- In each table, we will able to have ~7-8 kids.
- The one (1) chair per table it is for the Volunteer running the activity. Kids won't need chairs, since we'll be able to hold more kids per station if they are standing up.
- We will bring the extra chair for the registration table.
- We will bring a table cloth for our registration table.
- Other tables NO need table cloth.
- We will bring a banner that will put outside the tent, where the registration table will be located.
- Tents can be accommodated one after another in a row, or in a square shape, like in the drawing below.

9/12/2017 Get to know Nuclear patch 1

Figure 2 Example of Supporting Documentation, GIRL Extravaganza

Bi-weekly Executive Committee Meetings

Every two weeks the Executive Committee hold a meeting to talk about the planification of events, delegation of tasks, reminder of future events and preparation for future events and ideas. An agenda was made a day prior the meeting and posted in the SharePoint drive, for everybody to see and access and see what is planned to discuss during

the meeting. Another file that we use in this meeting were the minutes and they were a summary of procedures or happenings during the meeting, recorded in brief notes.

American Nuclear Society

University of New Mexico | Student Section

Agenda

Meeting Date: Friday February 2nd, 2018 Start time: 12:30 PM End time: 2:00 PM
Location: Farris Building
Purpose: Discuss pending business

Attendance
Facilitator: Ira Strong, President
Accepted: Melissa Moreno (VP), Ramda Galo (ICO), and Corey Skinner (GSO), Deep Patel (ECO), Phoenix Baldez (OO)

Regrets: Joseph King (PDO)

Guests:

Pre-Meeting
Advertising Timing/ Strategy
Raytheon Outreach Event Highlights

Meeting Document
- *ANS Calendar of Events*
  - *October 25th INL Webinar*
- *Officer absences*
  - *October 22th -24th Ira will be absent*
  - *October 28th – November 2nd Ira and Melissa with gone. Ramda will be in charge.*
  - *November 3rd Ira will be out of town, so Melissa will run the officer's meeting.*
- *Overview of next year's calendar.*

I. **Call to order**

Time:

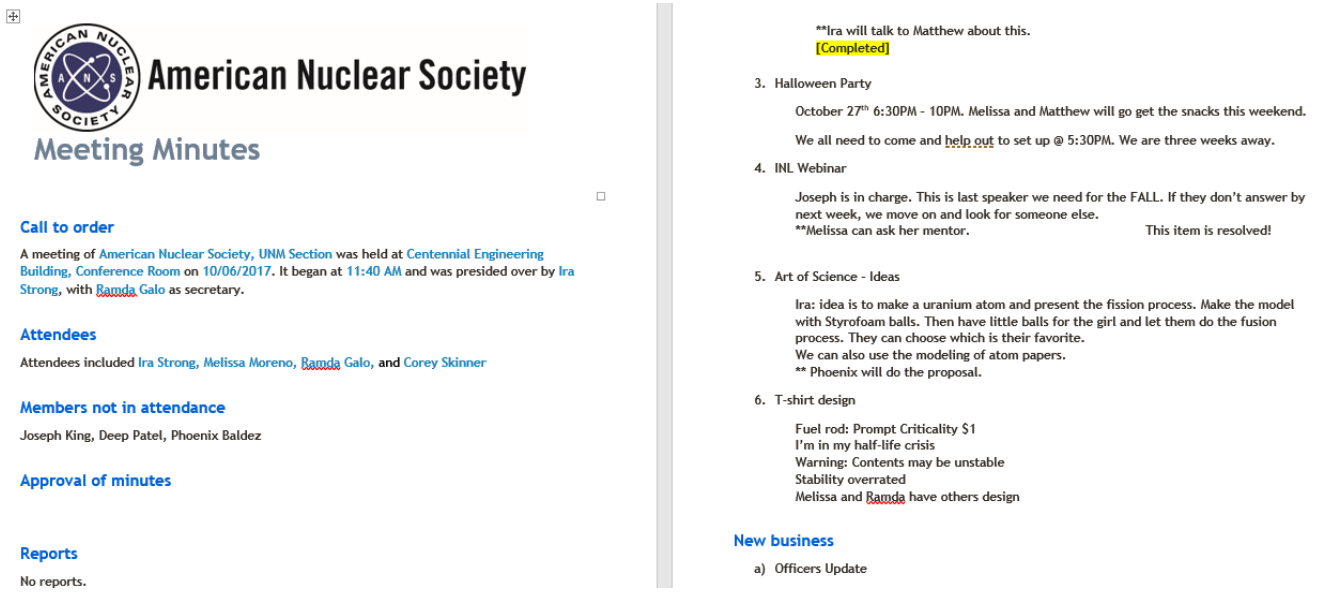
Rap the gavel twice. *The meeting will come to order*

II. **Roll call**

Internal Communications Officer

III. **Approval of minutes from last meeting**

Figure 3 Example of Agenda



American Nuclear Society

Meeting Minutes

Call to order

A meeting of American Nuclear Society, UNM Section was held at Centennial Engineering Building, Conference Room on 10/06/2017. It began at 11:40 AM and was presided over by Ira Strong, with Ramda Galo as secretary.

Attendees

Attendees included Ira Strong, Melissa Moreno, Ramda Galo, and Corey Skinner

Members not in attendance

Joseph King, Deep Patel, Phoenix Baldez

Approval of minutes

Reports

No reports.

**Ira will talk to Matthew about this.
[Completed]

3. Halloween Party

October 27th 6:30PM - 10PM. Melissa and Matthew will go get the snacks this weekend.

We all need to come and help out to set up @ 5:30PM. We are three weeks away.

4. INL Webinar

Joseph is in charge. This is last speaker we need for the FALL. If they don't answer by next week, we move on and look for someone else.
**Melissa can ask her mentor. This item is resolved!

5. Art of Science - Ideas

Ira: idea is to make a uranium atom and present the fission process. Make the model with Styrofoam balls. Then have little balls for the girl and let them do the fusion process. They can choose which is their favorite.
We can also use the modeling of atom papers.
** Phoenix will do the proposal.

6. T-shirt design

Fuel rod: Prompt Criticality $1
I'm in my half-life crisis
Warning: Contents may be unstable
Stability overrated
Melissa and Ramda have others design

New business

a) Officers Update

Figure 4 Example of Meeting Minutes

SharePoint Drive

This is a web-based, collaborative platform that we use it to communicate important information, add files, change minutes, update agenda and keep track of all the amazing projects that ANS student chapter is working during the academic year.

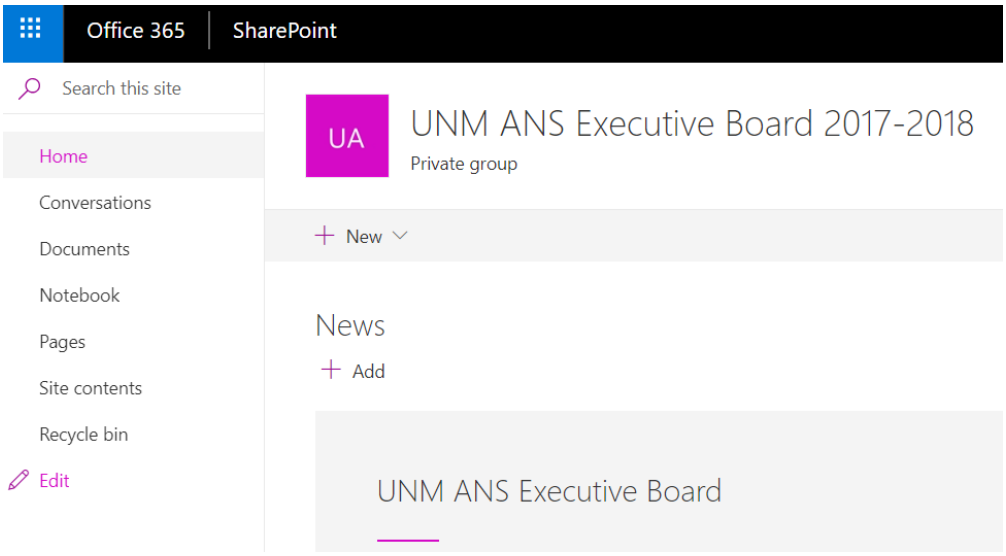


Figure 5 UNM ANS SharePoint

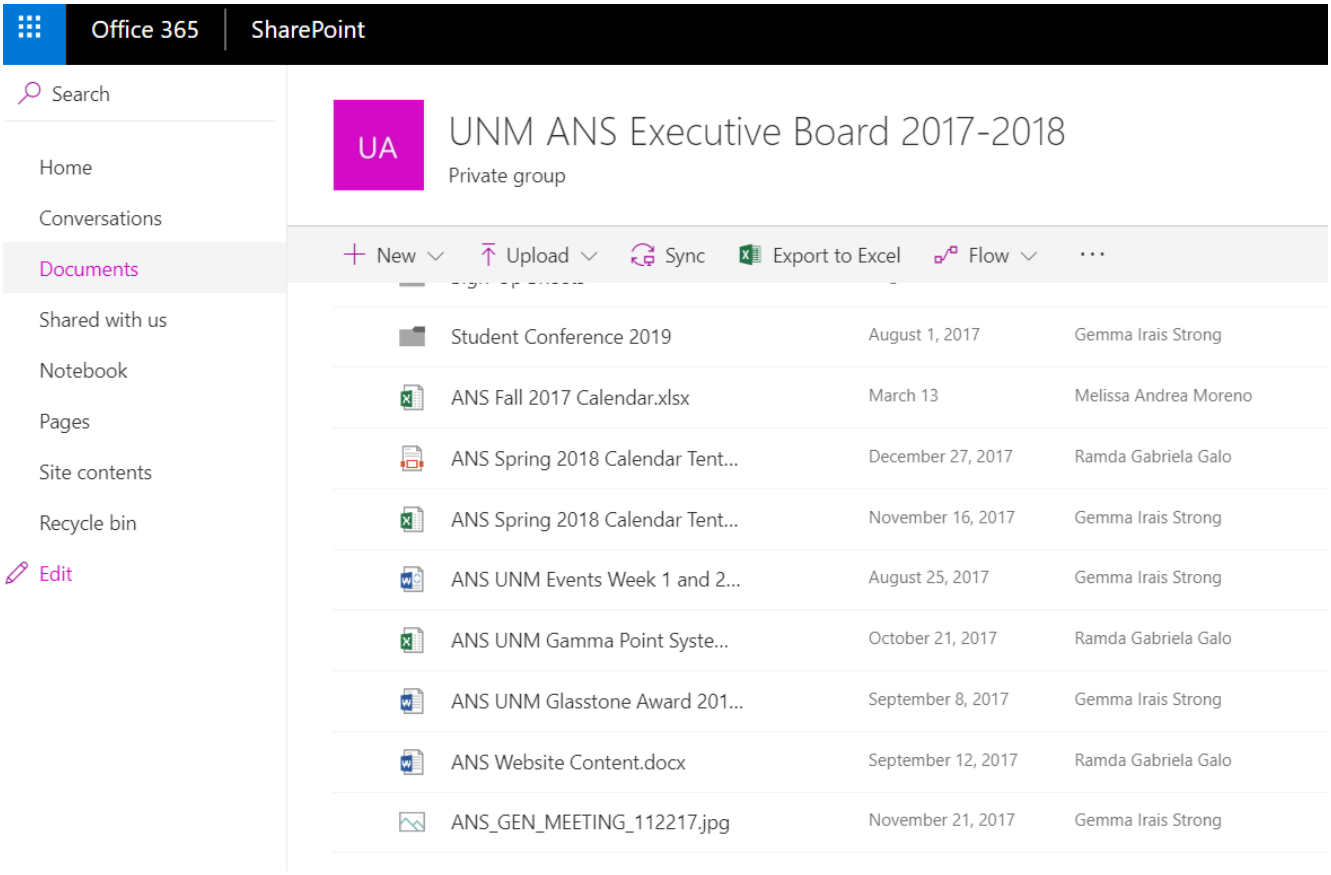


Figure 6 Example SharePoint Documents

Planning

All events were planned, for instance events for the Fall 2017 were planned during the Summer of 2017, and Spring 2018 events, were planed during the Fall 2017 and winter break. The reasons why we did this was to secure conference rooms in advance, and to secure speaker's attendance, calculate expenses and being able to promote the event in advance. We used spreadsheets to layout the event dates. We had a calendar for the fall 2017 and spring 2018.

Calendar ANS Fall 2017

Type of Meeting/Event	Date	Day	Guest Speaker	Company
Officer Meeting	25-Aug-17	Friday @ 11:00 am	Trainning for ANS Officers	
Sunday Study Session	27-Aug-17	Sunday		
General Meeting	30-Aug-17	Wednesday @ 11:00 am	Prof. Anderoglu	UNM
Sunday Study Session	10-Sep-17	Sunday		
General Meeting	12-Sep-17	Tuesday @ 5:30 pm	Palo Verde	APS
Fall BBQ	15-Sep-17	Friday @ 1:30 PM		
Sunday Study Session	17-Sep-17	Sunday @ 11:00 am	Centennial Engineering Center	
Fundraiser	22-Sep-17	Friday @ 3:00 p.m.	**Ajiaco Colombian Bistro** Rides will leave at 2:40 pm outside Centennial Building	https://www.groupraise.com/events/35590-american-nuclear-society-at-ajiaco-colombian-bistro
Officer Meeting	22-Sep-17	Friday @ 1:00 PM	ESS Room 2080	
Sunday Study Session	24-Sep-17	Sunday @ 11:00 am	Centennial Engineering Center	
General Meeting + Birthday	27-Sep-17	Wednesday @ 11:00 am	Suzanne Dennis	Suzanne Dennis U.S. Nuclear Regulatory Commission /LANL

Figure 7 Example of calendar planning

UNM ANS Membership

Active members are UNM students that have paid dues to the section and attend at least one event per semester. Dues are $15 per semester for ANS National Members or $20 for non-ANS national member, this is for the entire academic year. All member received a tote bag, a cup, a lanyard and a t-shirt.

Beyond paying dues, active members are expected to participate in varying activities held by ANS UNM. Active members are rewarded for participating at section events and helping with section business. Points can be earned by attending meetings, outreach events, conferences, etc. that ANS UNM hosted or encouraged.

Active membership points come with benefits, and this is to be eligible to get (2) of the ANS Trinity Scholarships with a value of $500 USD. Only the two active members with the most amount of points are awarded with this scholarship.

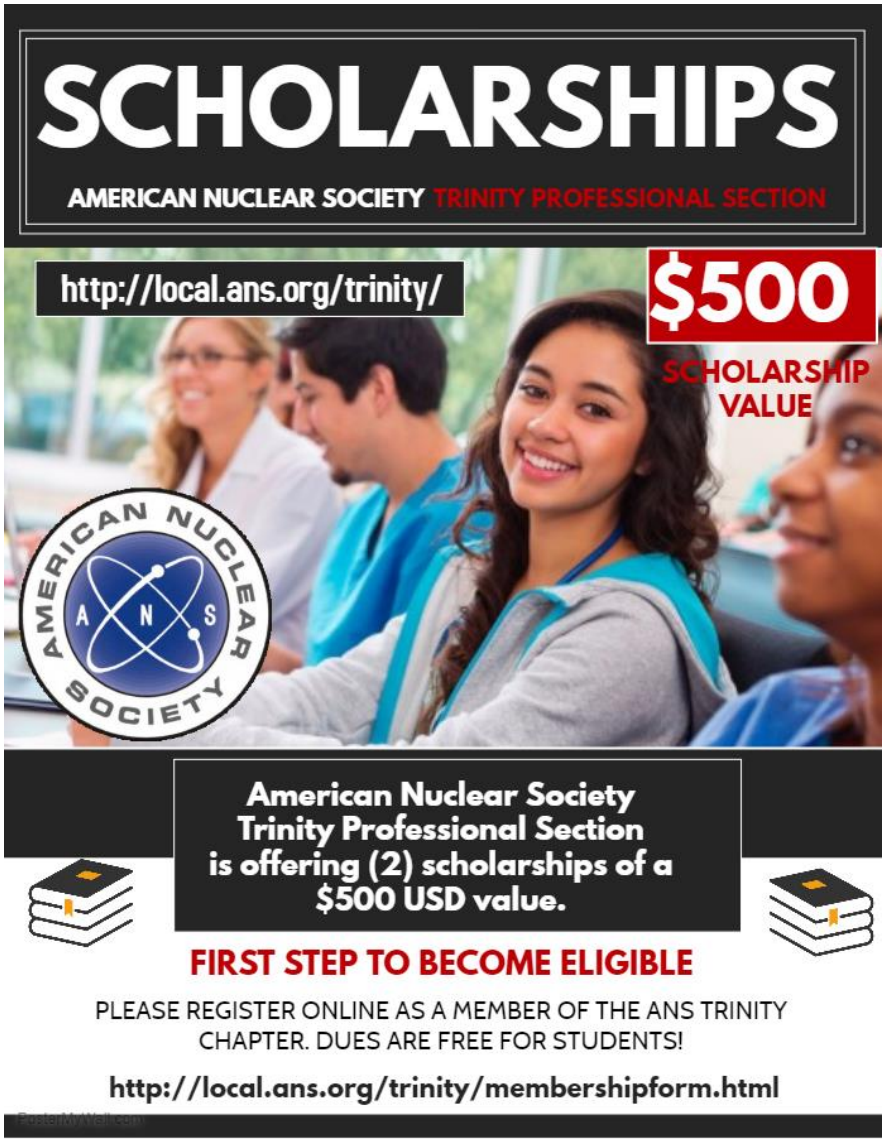
ANS Gamma Point System

University of New Mexico — Nuclear Engineering — Fall 2017 - Spring 2018

Name	Type	Outlook	Dept.	Year	Total Points	Outreach Event	Outreach Event5	Outreach Event6	Outreach Event4	Officer Meeting	Sunday Study Session	General Meeting	UNM Counselor Day
					Fall	20-Aug	22-Aug	23-Aug	24-Aug	8/25/2017	8/27/2017	8/30/2017	9/1/2017
Name	Position	Y / N			2017	2 points	2 points	2 points	2 points	1/2 Point	1/2 Point	1 point	2
Ira Strong	Officer	Y	NE	Junior	20.5	2	2	2	2	0.5	0.5	1	
Melissa Moreno	Officer		NE	Junior	18		2		2	0.5	0.5	1	2
Benjamin Houldridge	Pending		NE	Sophomore	5								
Matthew Gervasi	Non-Member		NE	Sophomore	3				2				
Ramda Galo	Officer		NE	Junior	13.5				2	0.5	0.5	1	2
Joseph King	Officer		NE	Junior	9				2	0.5		1	
Corey Skinner	Officer		NE	Grad	14		2		2	0.5		1	
Phoenix Baldez	Officer		NE	Grad	7					0.5		1	

Gamma Points System

Figure 8 Example of the ANS UNM Gamma Point System



Public Information

The ANS UNM has different ways of promoting its events, one if through flyers around campus, Facebook, displaying events at the Student Union Building monitors, by email and website. http://student.ans.org/nm/

UNIVERSITY SERVICE

College of Engineering

The ANS UNM is part of The School of Engineering council, which helps to keep SOE student organizations informed of events and to get opinions on how UNM campus can improve. In this meeting all the presidents from the student's organizations are encouraging to attend and the Dean of the SOE is the organizer of this meeting.

ASUNM

ASUNM is more than a Student Government. They strive to enhance and enrich the UNM experience by serving the undergraduate population in both representation and by providing a multitude of opportunities for student engagement. Their aim to protect the autonomy of the student body while also uniting everyone in a community that is both welcoming and safe. Each student organization has a representative in the ASUNM Senate. This years ANS UNM Senator assigned was Madeline Kee.

Student Government Accounting Office

The Student Government Accounting Office (SGAO) is a service department of the University of New Mexico that processes all funds allocated by ASUNM & GPSA, the undergraduate and graduate student governments. ANS UNM is one of the 350 clubs and organizations funded through allocation of student fees. They are our intermediary between the University's accounting offices and the student organizations funded by ASUNM and GPSA.

During the Academic year the ANS UNM applied to an appropriation process which is and additional funding outside of the budget process that can be requested once per semester for travel, unforeseen expenses such as conferences or events, and for onetime capital outlays such as computers or large equipment. The process is to submit an appropriation to the Finance Committee, attend the Finance Committee meeting where they will look to our case and we'll answer some question and determine if they can fund all the items we are requesting for. Then we must attend a full senate meeting and go through the same process, after that we are granted or denied the funds. On Fall 2017 we awarded with an appropriation of $1,050 USD. And in Spring 2018, we were awarded with an appropriation of $1,355 USD.

FINANCIAL PLANNING

Budget

Our financial planning started by creating the number of events and the funds necessary to create each event, establishing a budget for food, and other items.

University of New Mexico | American Nuclear Society

Tentative Expenses

Date	Type	Description	Detailed Information	Users	Qty	Unit	Unit Price	Total Price	External Contribution	Amount Contributed
20-Aug-17	Administrative	Business Cards	For ANS UNM SC Ex. Comm.	Ex. Comm.	7	sets	$ 16.99	$ 118.93		
22-Apr-18	Conference	ANS PHYSOR Conference	Flights from ABQ-CANCUN	MM, IS	2	airfare	$ 492.00	$ 984.00	S-CAP	$ 600.00
22-Apr-18	Conference	ANS PHYSOR Conference	Hotel Marriot Casa Magna Hotel	MM, IS	4	nights	$ 249.00	$ 996.00	S-CAP	$ 600.00
year round	Catering	Ex.Comm. Meeting 2017-2018	Food for Exc. Com. Meetings	Ex. Comm.	14	days	$ 84.00	$ 1,176.00		
year round	Catering	General Meetings 2017-2018	Food for General Meetings	All	14	days	$ 84.00	$ 1,176.00		
year round	Catering	Sunday Study Sessions 2017-2018	Snacks for study sessions	All	25	days	$ 10.00	$ 250.00		
21-Aug-17	Contest	Daily Lobo Ad	ANS Shirt Contest design	All	1	ea	$ 100.00	$ 100.00		
6-Sep-17	Contest	Prize	ANS Shirt Contest design	All	1	ea	$ 100.00	$ 100.00		
14-Sep-17	Members	Shirts	For member sell then at $18 dlls	All	80	ea	$ 17.48	$ 1,398.40		
27-Oct-17	Event	Halloween Party	catering and decoration	All	1	ea	$ 300.00	$ 300.00		
2-Nov-17	Conference	ANS Winter Meeting	Flights from ABQ-WAS	MM, IS, ????	2	ea	$ 492.00	$ 492.00	STEP Program	$ 492.00
2-Nov-17	Conference	ANS Winter Meeting	Hotel	MM, IS, ????	3	nigths	$ 249.00	$ 249.00	STEP Program	$ 249.00
fall	Event	Fall BBQ	29 guests	All	1	ea	$ 256.92	$ 256.92		
spring	Event	Spring Banquet	50 guests	All	1	ea	$ 1,500.00	$ 1,500.00	joint event?	
	Promo	ANS STickers	200 stickers	All	1	pk	$ 110.00	$ 110.00	NE Dept	$ 110.00
	Promo	Pens	100 pens		1	pk	$ 85.00	$ 85.00	NE Dept	$ 85.00
	ID	ID Maker	id with name for members		1	pk	$ 110.00	$ 110.00		
14-Feb-18	Event	Valentine's	catering and decoration	All	1	pk	$ 300.00	$ 300.00		
7-Apr-18	Conference	ANS Student Conference 2017	Flights	All	5	pk	$ 350.00	$ 1,750.00		
7-Apr-18	Conference	ANS Student Conference 2017	Hotel	All	5	pk	$ 350.00	$ 1,750.00		
									ASUNM	$ 1,000.00
									GPSA	$ 1,000.00
									ESS	$ 500.00
									Advisor	$ 100.00
									Nuclear Dept	$ 2,000.00
									Membership Fees	$ 1,300.00
									Fundraising Goal	$ 1,000.00
							Outgoing	$ 13,202.25	Incoming	$ 9,036.00
									Balance	$ (4,166.25)

Different sources of funding were used during the academic year:

UNM SGAO Account: Initial $6,500, Balance $120 (including appropriations and PB funds)

STEP Project: $ 11,050 (all used towards the attendance of the ANS Student Conference)

UNM ANS Foundation Account: Balance $290

Nusenda Account: Initial and Balance $5,000 (emergency funds)

UNM NE Department: $2,000 (all used towards the attendance of the ANS Student Conference)

We would like to Thanks to the ANS Trinity Chapter for their generous donations throughout the academic year, including awarded scholarship: $6,500.

EVENTS

Officer Meetings

We held (6) officer's meeting during the Fall 2017, these meetings took place on Centennial Engineering Center Room 2080. During the Spring 2018, we held (3) officer's meeting on Farris Engineering Center room 2015.

Sunday Study Sessions

The ANS UNM held (12) Sunday Study Sessions every Sunday for the Fall of 2017 at the Centennial Engineering Center. We had sophomores, junior, seniors and graduate students tutoring at lower level Nuclear Engineering classes.

Figure 9 Students doing homework at Sunday Study Sessions

Nuclear Engineering Tutoring

Phoenix Baldez and the NE department at UNM organized tutoring session for undergrads. Phoenix Baldez took the initiative to talk to graduate students and come up with a schedule to help undergraduates with their nuclear engineering classes. (15 sessions during the spring 2018 semester)

Fundraisers

The ANS UNM held (2) Fundraiser: (1) in Ajiaco Colombian bistro and (1) at Chipotle.

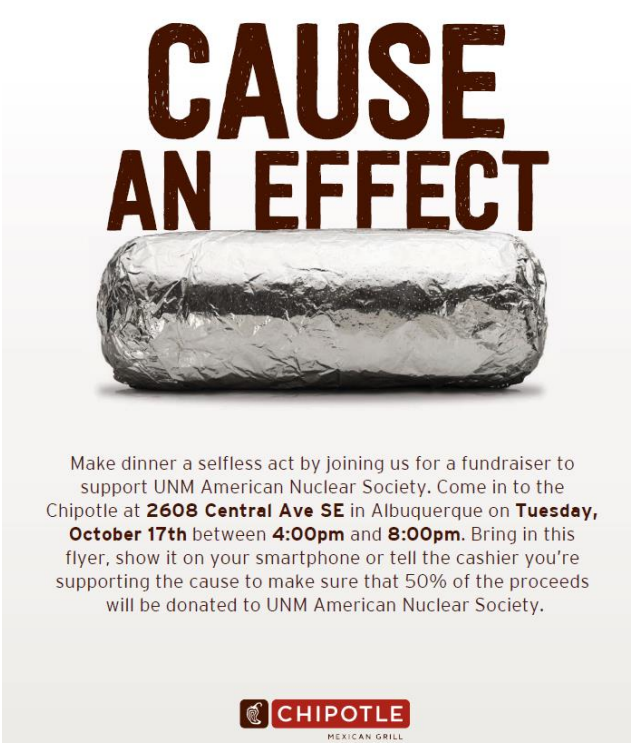


Figure 10 Students and Faculty attending the Ajiaco Fundraiser

Book Sales

To be able to continue gathering funds for General Meetings we started accepting book donations and then have book sales. We held the first book sale at the Fall BBQ 2017 and then we had books for sale at the Nuclear Engineering Reactor Lab where students can look at them and buy them. *Thanks to our donors: Dr. Forrest Brown, Professor Carl Willis and Brittaney Gagne* for making this possible.

Discover your Science

Location: UNM Centennial Engineering Building, STAMM Room

Date: Saturday 08/19/2017

Time: 8:00 am -12:00 pm

Type: (Organized/Participation/Joint Event) ANS Participation

Event Size: ~100 people (Parents & Students)

Volunteers: Ira Strong, Jose Olvera and Jesus Valencia.

Activities: Supporting volunteer staff by setting up the event, coordinating parking area, redirecting people to the event place, and helping classrooms. We presented ANS SS to incoming students from the Engineering department.

Photos:

Jose Olvera, volunteering for ANS @ DYS
Coordinating students in the classrooms

Ira Strong, volunteering for ANS @ DYS
Coordinating parking lot and entrance for guests.

ANS Solar Eclipse Observation

Location: UNM Mechanical Engineering Building, Patio

Date: Monday 08/21/2017

Time: 11:00 am -12:00 pm

Type: (Organized/Participation/Joint Event) ANS Organized

Event Size: ~50 people (Students & Staff)

Volunteers: Ira Strong, Melissa Moreno, Jose Olvera and Juan Dominguez.

Activities: On August 21, a solar eclipse will be cutting through the United States. For most of the country, including New Mexico, the eclipse will be partial. This means only part of the sun's surface will be blocked by the moon and there will be no point during which it will be safe to look at the sun without proper eye protection. The only place where it will be safe to view the sun directly will be a relatively narrow path from Oregon to South Carolina, and then only for a little over two minutes while the sun is totally eclipsed. Come to ME Building Patio for a safe look at the partial eclipse through Safe Solar Glasses, weather permitting. About 73% of the sun will hidden by the moon as seen from Albuquerque during the eclipse's midpoint at 11:45 a.m. MDT

UNM Organization Day

Location: UNM Duck Pond

Date: Thursday 08/24/2017

Time: 6:00 am - 3:00 pm

Type: (Organized/Participation/Joint Event) ANS Participated

Event Size: ~1000 people (Students)

Volunteers: Ira Strong, Melissa Moreno, Ramda Galo, Matthew Gervasi, Joseph King and Corey Skinner.

Activities: Meet student leaders from around campus and learn how to get involved with the over 450 student organizations on campus. Listen to great live music at the Duck Pond from 12 - 1 p.m. while ASUNM student government leaders serve free pizza and Pepsi. FREE MOVIE - CAPTAIN AMERICA: CIVIL WAR - SUB Theater at 3:30 pm.

UNM Counselor Day

Location: Student Union Building

Date: Friday 09/01/2017

Time: 12:00 pm - 2:00 pm

Type: (Organized/Participation/Joint Event) ANS Participated

Event Size: ~100 people (Students)

Volunteers: Melissa Moreno and Ramda Galo

Activities: Table in and give information to +200 Counselors about the UNM Engineering Programs, for high school counselors across the state.

Fall BBQ

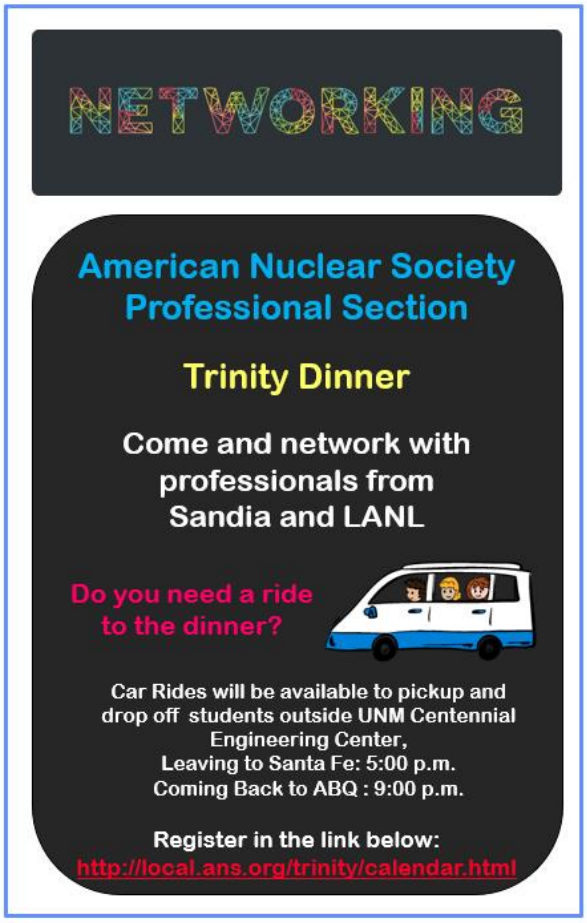
Every year the ANS UNM Student Section gets $250 from the ANS Trinity Professional Chapter to hold a Fall BBQ and promote nuclear science and technology on campus.

Figure 11 Students and Faculty at Fall BBQ 2017

ANS Trinity Dinners

Dinner meeting, 29 Sep 17

Speaker: Bruce Carlsten, PhD, Laboratory Fellow, Engineering Sciences Directorate, Los Alamos National Laboratory, (Topic: Radiation Belt Remediation)



P. O. Box 5367
Albuquerque, NM 87185-5367
http://local.ans.org/trinity/
ans.trinity@yahoo.com

American Nuclear Society
Trinity Section

DINNER MEETING ANNOUNCEMENT

"Radiation Belt Remediation"

Speaker: **Bruce Carlsten, PhD**, Laboratory Fellow, Engineering Sciences Directorate, Los Alamos National Laboratory

Abstract: please see next page.

Biography: please see next page.

Place: **Courtyard by Marriott, Santa Fe**
3347 Cerrillos Road, Santa Fe, NM (505-473-2800)

Directions: From Albuquerque, take I-25 North approximately 55 miles to Exit 278 (Cerrillos Road). Hotel is 3 miles from the exit on the left-hand side of Cerrillos Road at Richards Avenue.

Date: **September 29, 2017**

Time: **6:00** Social Hour with Cash Bar

7:00 Buffet Dinner (Chimichurri flank steak and grilled chicken Marsala)

7:45 Speaker

Cost: *$35 per person (pre-paid by web sign-up in advance);*
$40 per person (not pre-paid, at the door);
$15 for students and children

We strongly encourage you to sign up and pay for this event by 25 Sep using the ANS Trinity PayPal payment account. Visit the "Calendar" page of our web site (http://local.ans.org/trinity/calendar.html) and select the appropriate payment button. You may use any credit card and do NOT need to have your own PayPal account to make the payment.

RSVP: If you do not use on-line payment, please RSVP no later than 25 Sep to:
Markku Koskelo: mkoskelo@aquilagroup.com (505-338-8083) or
Kimberly Klain: kclark@lanl.gov (505-665-1349)

RSVP must be received by 25 Sep in order to give final numbers to the caterers. While we strongly encourage everyone to use on-line payment to sign up and prepay, an RSVP is a commitment to attend/pay at the door. We cannot afford "no shows" after the final count is given to the caterers, as the Section is partially subsidizing the cost of this event. If you cancel after 25 Sep, you will still be responsible for paying.

UNM

Figure 12 NJ, Bruce and Ira

Figure 13 UNM students and faculty at ANS Trinity Dinner

Dinner meeting, 1 Dec 17

Speaker: Stephen M. Younger, PhD, Laboratories Director, Sandia National Laboratories, (Topic: *A Century of Arms Control: Lessons and Opportunities for the Future*)

UNM attendees: Ira Strong, Mel Strong, Melissa Moreno, Corey Skinner, Ramda Galo, Quinton Walton and Benjamin Holdridge.

Trinity Section
American Nuclear Society
P. O. Box 5367, Albuquerque, NM 87185
http://local.ans.org/trinity/

Southwest Professional Chapter
Institute of Nuclear Materials Management
Albuquerque, NM 87111
https://www.inmm.org/About/Chapters/Southwest-Chapter

JOINT DINNER MEETING ANNOUNCEMENT

"A Century of Arms Control: Lessons and Opportunities for the Future"

Speaker: **Stephen M. Younger, PhD**, Laboratories Director, Sandia National Laboratories

Abstract: Nuclear arms control initiatives rest on a century of experience, starting with sincere but ill-fated efforts at arms control that followed the First World War. What can we learn from the past, and how do the national security environments of former times relate to the challenges that we have today? My discussion will focus on nuclear proliferation, new technologies, the spread of science and technology, and more.

Biography: please see next page.

Place: **Albuquerque Marriott Pyramid North, Albuquerque**
5151 San Francisco Road NE, Albuquerque, NM (505-821-3333)

Directions: Just south of Paseo Del Norte Blvd NE and adjacent to I-25, between Jefferson St NE and southbound Pan American Fwy NE.

Date: **December 1, 2017**

Time: **6:00** Social Hour with Cash Bar

7:00 Buffet Dinner (baked salmon and roasted pork loin)

7:45 Speaker

Cost: *$35 per person (pre-paid by web sign-up in advance);*
$40 per person (not pre-paid, at the door);
$15 for students and children

We strongly encourage you to sign up and pay for this event by 29 Nov using the ANS Trinity PayPal payment account. Visit the "Calendar" page of our web site (http://local.ans.org/trinity/calendar.html) and select the appropriate payment button. You may use any credit card and do NOT need to have your own PayPal account to make the payment.

RSVP: If you do not use on-line payment, please RSVP no later than 29 Nov to:
Markku Koskelo: mkoskelo@aquilagroup.com (505-338-8083) or
Kimberly Klain: kclark@lanl.gov (505-665-1349)

RSVP must be received by 29 Nov in order to give final numbers to the caterers. While we strongly encourage everyone to use on-line payment to sign up and prepay, an RSVP is a commitment to attend/pay at the door. We cannot afford "no shows" after the final count is given to the caterers, as the Section is partially subsidizing the cost of this event. If you cancel after 29 Nov, you will still be responsible for paying.

GENERAL MEETINGS

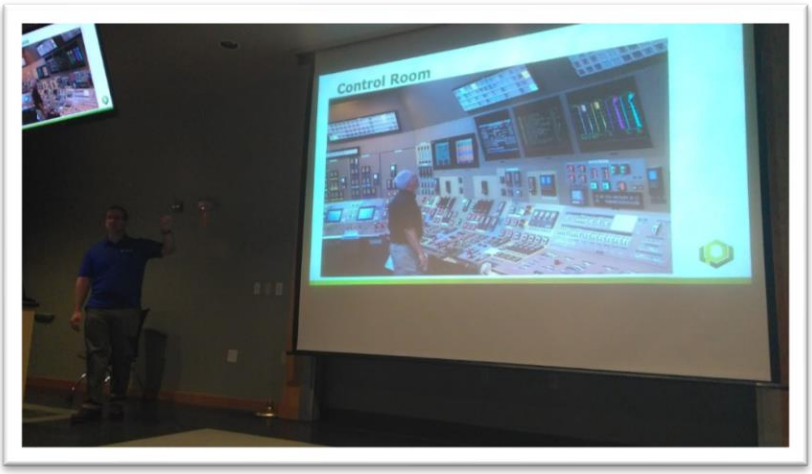
General Meeting, August 30th, 2017

Guest Speaker: Dr. Osman Angeroglu, UNM ANS Advisor. He talked about the XMAT: Extreme Materials Group. Next generation of nuclear reactors offer more economic, safer and proliferation resistant designs compared to current operating reactors. However, in most cases structural materials are the limiting factor. Our research interests center on advanced alloy development for nuclear applications, advanced manufacturing techniques, radiation damage in materials and structure- property relations. We have been working on the development and qualification of advanced ferritic FeCrAl alloys for accident tolerant fuel systems and Ni based alloys for advanced reactor applications. In addition, we have been investigating both fundamental aspects such as phase stability and structure of the metal-oxide interface and engineering problems such as thin walled tube forming using advanced manufacturing techniques such as electrically assisted forming.

Palo Verde, September 12th, 2017

Representatives of the Palo Verde Nuclear Power Station attended the career fair, and in the afternoon, they gave a talk to NE students. They held interviews and the two students selected from UNM to become interns in the summer of 2018 were, Gemma (Ira) Strong and Melissa Moreno. The target audience at the talk were mainly nuclear engineering students, but the invitation was open to all majors.

The presentation covered general information about Palo Verde Nuclear Generating Station, followed by more specifics on the engineering hiring and training process for PVNGS. The training program (Legacy Engineering Program) at PVNGS is unique in the industry. The program is about 18 months and includes rotations through each engineering department and operations and classroom training on various technically topics regarding plant systems.



Industry Networking Social, September 12th, 2017

Time: 6:00-8:00 pm

Place: School of Engineering / CEC, Stamm Room

(Recommended Attire: Business Casual)

Hors D'Oeuvres provided

General Meeting, September 13th, 2017

Speaker: Thomas Steel, Idaho National Labs, Intern Specialist/University Recruiting SME

He gave us information about internship at INL and how to apply.

General Meeting, September 27th, 2017

Speaker: Suzanne Dennis, NRC

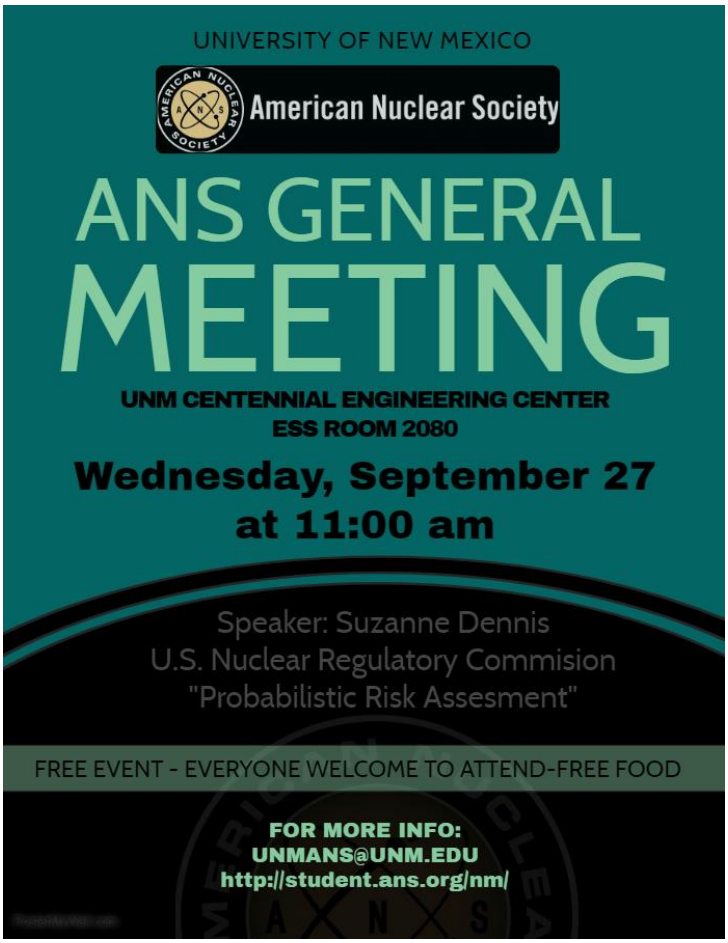


Figure 14 Suzanne Dennis, NRC

General Meeting, October 11th, 2017

Speaker: Dr. Forrest Brown, Senior Scientist, Program Chair at Los Alamos National Laboratory

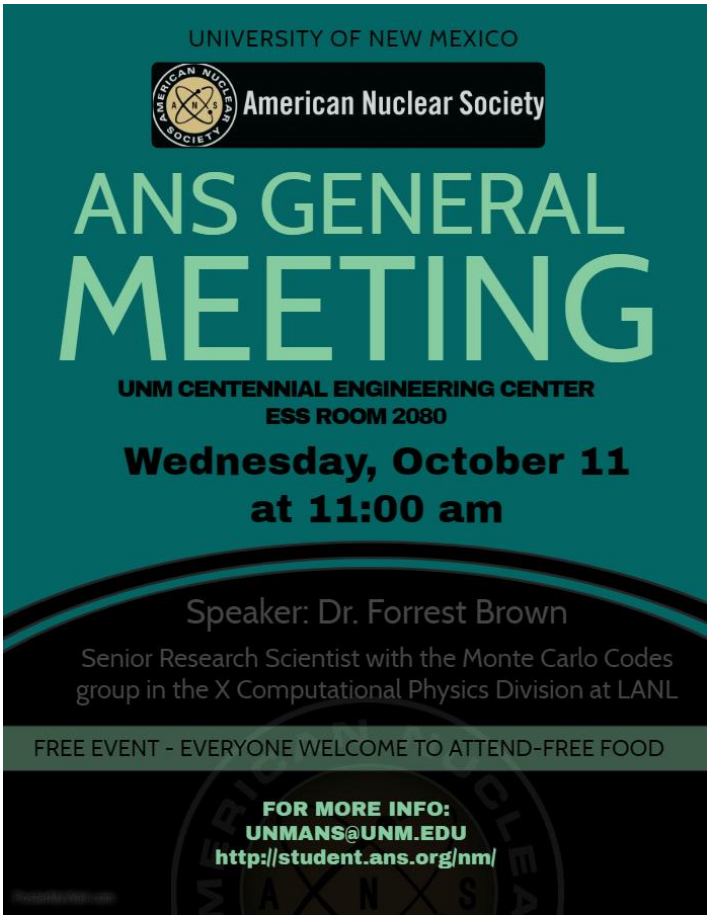
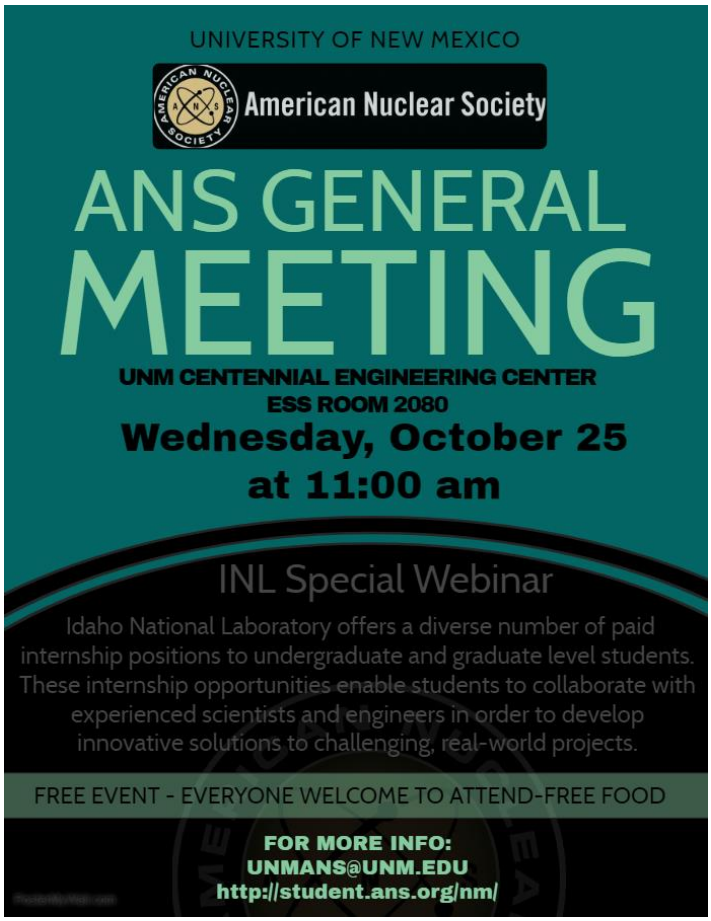


Figure 15 Dr. Brown talking to students

General Meeting, October 25th, 2017

Idaho National Laboratory, Internship Opportunities Webinar

As a Department of Energy facility, INL offers a diverse number of paid internship positions to high school, undergraduate and graduate level students. These internship opportunities enable students to collaborate with experienced scientists and engineers to develop innovative solutions to challenging, real-world projects.



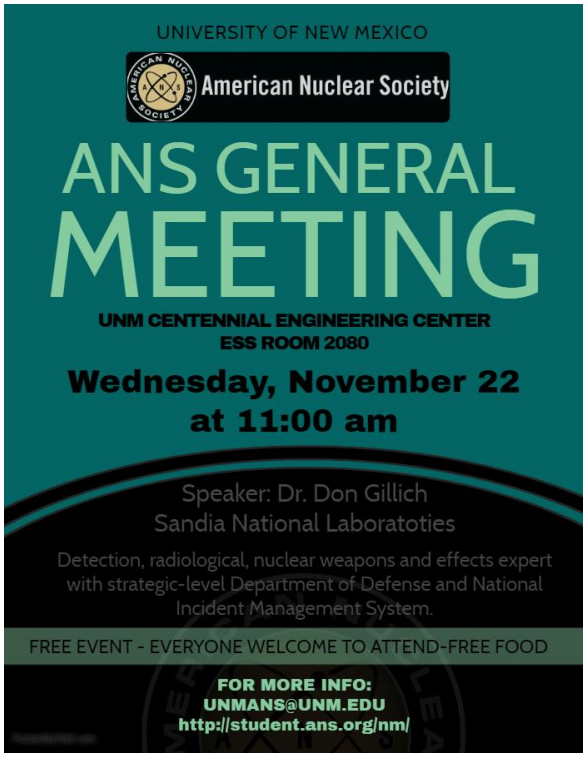
General Meeting, November 8th, 2017

Speaker: Danielle Redhouse, R&D S&E Nuclear Engineer at Sandia National Laboratories

General Meeting, November 22nd, 2017

Speaker: Dr. Don Gillich, Nuclear Forensics Manager at Sandia National Laboratories

He talked about Sandia projects and his experience in the Army, and his transition into a National Lab.



President's Day, February 19th, 2018

Bob Coward ANS President visited the University of New Mexico, where he had a tour of the facilities, talked to students and faculty. He gave a talked that is was very inspirational about the future of the Nuclear Industry.

Bob Coward is Principal Officer of MPR Associates, a world leading Specialty Engineering and Technical Services Company, a position he was promoted to in January 2009. In this overall MPR Leadership role, Bob is responsible for all aspects of MPR performance in all engineering disciplines and all business sectors. Prior to becoming Principal Officer, Bob was responsible for leading all MPR's services to the nuclear power sector worldwide. He graduated with honors from Duke University in 1983 with a degree in Mechanical Engineering, and his career has focused on the technical details of the design and evaluation of nuclear power plants, maintaining this focus as he transitioned to company leadership.

During his career at MPR, he has worked on over 100 electric generating plants worldwide, including 58 of the 65 US nuclear power plant sites. Through that work he has been on-site at 34 of the 65 US nuclear power plants. His specific expertise includes work in the areas of system performance, safety analysis, and project management, as well as the design and development of new nuclear power plants. Mr. Coward participates on the NEI Nuclear Strategic Issues Advisory Committee and Supplier Advisory Committee and is recognized as a key industry leader in the safe and reliable operation of the existing US nuclear power plants. He has also had important and influential industry roles in the design, licensing and development of new nuclear power plants, with leadership roles on the EPRI Advanced Light Water Reactor Program, the DOE NP2010 Program, as well as leading the STP 3&4 project to construct two ABWRs at the STP site in Texas. He also has important senior advisory roles in the projects to prepare the Design Certification submittal for the NuScale SMR design and the ABWR Design Certification renewal.

As Principal Officer of MPR, Mr. Coward regularly engages with nuclear industry executive leadership to be knowledgeable of industry needs and guide MPR to address those challenges and contribute to industry success. Mr. Coward regularly serves on "blue ribbon panels" in support of clients and industry groups addressing important design, regulatory, and operational challenges regarding advanced reactor systems, extended power uprates, safety system performance, significant event evaluations, and new plant projects. A special skill is leading multiorganization and multi-discipline teams to achieve their missions and deliver excellence, with a focus on collaboration and teamwork. Finally, a focus of Mr. Coward's efforts in his leadership role at MPR is the professional development of the MPR technical staff, including both technical expertise and leadership capabilities. Bob is a registered Professional Engineer and is President (2017/2018) of the American Nuclear Society. He lives in Alexandria, VA with his wife Kelley. Together they have five children. He enjoys time on the golf course, basketball court, and beach, as well as a tough technical challenge.

American Nuclear Society
University of New Mexico

http://students.ans.org/nm

CONFERENCE ANNOUNCEMENT

"Nuclear Power Looking Forward: The Opportunity and the Implications"

Speaker: Robert Coward, ANS President

Abstract: The energy markets are at a crossroads with significant disruption and serious questions regarding the direction forward. The role of nuclear power is a critical element of those decisions. This talk discusses the current situation, the opportunity in front of us, and the resulting implications as they relate to nuclear power in the US and worldwide.

Place: University of New Mexico, Centennial Engineering Center, Auditorium

Date: Monday February 19th, 2018

Time: 3:00 pm Conference, and 4:00 pm Social

Free Event, Free Food

We strongly encourage you to RSVP to this event, that will help us to have a head count for the food. https://form.jotform.com/80326226309149

General Meeting, March 23rd, 2018

At this meeting we set up some rule for attending the ANS Student Conference.

Rules for Financial Assistance to students attending ANS Student Conference

o It is mandatory for Senior's attending the ANS Student Conference, to apply for funding through S-CAP. Funding is limited to two students per conference. http://www.career.unm.edu/students--alumni/student-conference-award-program.html

o Students to be considered for financial aid must paid corresponding dues and adhere to the following rules:

Dues:

a) ANS National (~$30 USD year)

b) ANS Trinity Chapter (Free membership for students)

c) ANS UNM Student Section (~$20 USD year)

General Rules:

a) First come, first serve

b) Attending at a minimum of (1) ANS General Meeting during the academic year,

c) Participate in at least (1) ANS Outreach event during the academic year

Rules for Seniors:

d) To be considered for financial aid senior students need to apply for funding through S-CAP during the preceding Fall to the conference.

Rules for Non- US citizens:

e) Only (1) non-us citizen will be considered for funding

f) He/She needs to express his/her interest in attending the conference by the first 4-weeks of the Fall Semester, by sending an email to unmans@unm.edu

- Students adhering to these rules will have priority consideration for financial aid.
- Note: Please, plan-ahead of time if you are considering attending a conference. In the same way as when you plan to attend grad school.
- After being awarded some aid either from ANS or the NE department, students are committed to attend the ANS Trinity Spring Banquet. If the student presented research at the ANS Student Conference, she/he will be committed to present his/her research at the ANS Trinity Banquet.

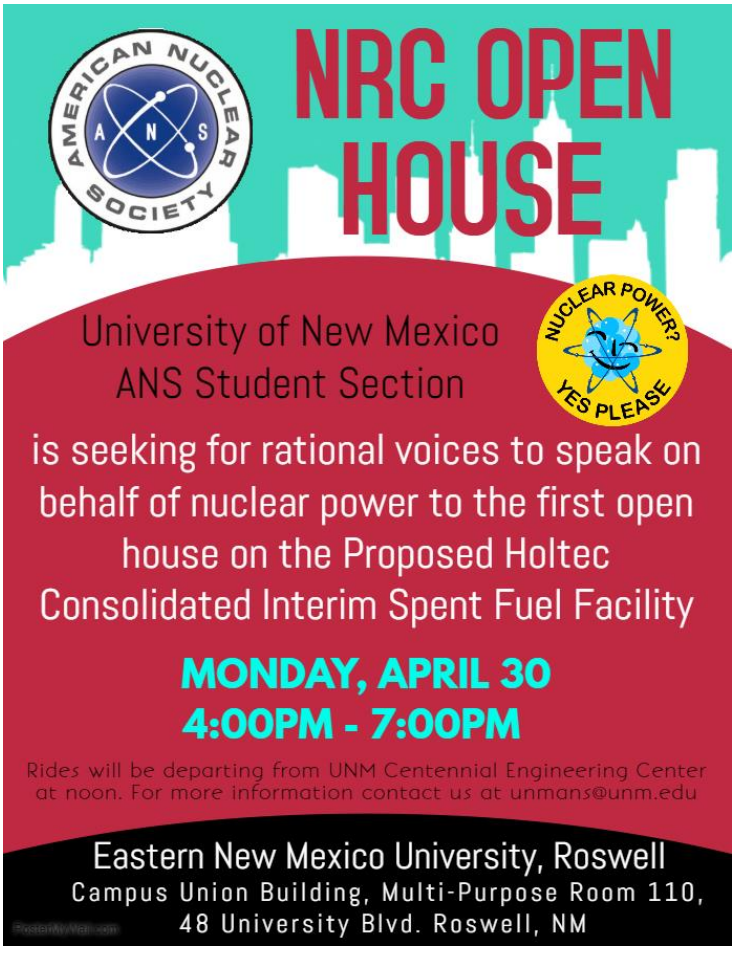
General Meeting, April 23rd, 2018

Dr. John E. Kelly is the Vice-President/President-Elect of the American Nuclear Society. Recently retired from the U.S. Department of Energy as the Chief Technology, he was responsible for establishing the strategic technical direction for the Office of Nuclear Energy's research, development, demonstration, and deployment portfolios. Prior to assuming the duties of Chief Technology Officer, he was the Deputy Assistant Secretary for Nuclear Reactor Technologies. His office was responsible for the civilian nuclear reactor research and development portfolio, which included programs on Small Modular Reactors, Light Water Reactors, and Generation IV reactors. Dr. Kelly also chaired the Generation IV International Forum and the International Atomic Energy Agency's Standing Advisory Group on Nuclear Energy. Prior to joining the DOE in 2010, Dr. Kelly spent 30 years at Sandia National Laboratories where he was engaged in a broad spectrum of research programs in nuclear reactor safety, advanced nuclear energy technology, and national security. Dr. Kelly received his B.S. degree in nuclear engineering from the University of Michigan in 1976 and his Ph.D. in nuclear engineering from the Massachusetts Institute of Technology in 1980.

You can find part of this conversation with Dr. Kelly here.

Figure 16 Dr. Kelly talking to students

NRC Open House, April 30th, 2018



ANS UNM is seeking to participate more in policy issues in the state of New Mexico. Having an NRC open house in Roswell, NM was the perfect opportunity.

Introduction
In Session 1
In Session 2

Ramda Galo said, Yesterday, we drove to Roswell, NM to speak in favor of the Holtec Consolidated Interim Storage Facility. In a room with more than 50 people, we (students from UNM) were the only ones speaking in favor. People had many misconceptions about things like spent fuel and radiation, but I believe that having a presence makes a difference. In the article from today it says, "Both sides of the issue were represented at the open house." Believe it or not, that's a BIG change because it is usually one-sided and only the anti-nuclear people show up.

Figure 17 James, Deiter, Ramda & Ira waiting their turn to speak

Figure 18 Ramda Galo speaking on favor of the HI-STORE

Meeting

Continued from Page A1

attending the University of New Mexico in Albuquerque, was there with five other UNM students to speak in favor of the proposed storage site.

"We've come down here from Albuquerque to inform people about nuclear safety," she said. "I think this is a perfectly safe project."

She said storing nuclear facility at the site would save taxpayers about $30 billion a year.

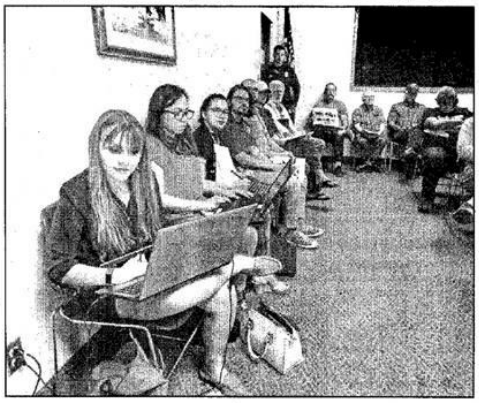
Wearing a blue T-shirt that said, "No Holtec International," Melanie Deason of Roswell said she is against the project.

"I can sum up Holtec in one word — 'genocide,'" she said.

Deason said that among her concerns were transportation, geology, water issues and the Rio Grande Compact, an interstate compact to equitably portion the waters of the Rio Grande Basin between New Mexico, Colorado and Texas.

"I don't think Texas wants radioactivity in their food chain," she said.

Deason also was on the list of speakers.



Timothy P. Howsare Photo

Bobbi Riedel, left, a doctoral student in nuclear physics attending the UNM in Albuquerque, traveled to Roswell with several other UNM students to speak in favor of Holtec's proposal.

ty because all across the country nuclear-generating stations are storing nuclear waste on site, which pose risks to the public.

"Nuclear waste is being stored near rivers, lakes, oceans and seismic areas (places prone to earthquakes)," he said. "About one-third of the U.S. pop-

on a cross-country trip.

"It makes sense to do it today," said Heaton, who lives in Carlsbad.

He said the facility would be 30 feet underground and have three feet of concrete underneath the storage vessels and three feet of concrete above them, making them impervious to any kind

New Mexico who said he was attending as a private citizen, had a much different opinion on the self-ventilating cooling system.

He said the temperature of the fuel rods stored at the site would be between 200 to 700 degrees.

"What happens if it

have agriculture and gas and oil, which are the stalwarts of the economy in southeast New Mexico.

She said while the Holtec facility would only provide 55 permanent jobs in New Mexico, ranching, farming, gas and oil combined provide 23,000.

If an accident occurred, Henderson said, "It would destroy New Mexico."

Staff from the NRC spoke first at the public meeting, outlining the timetable and requirements of the application process.

Cinthya Roman of the NRC gave an introduction first in Spanish then in English.

The forum was called a "scoping meeting," in which the NRC records and evaluates comments from the public.

In consideration to those who traveled from out of town to the Roswell meeting, the NRC allowed speakers from Albuquerque, El Paso and Las Cruces to talk first.

The first speaker was Sister Joan Brown, a Franciscan nun from Albuquerque.

She said in the Christian tradition the desert is a place where people find God and not a waste-

ers," who say that they, along with their preceding generations, have been contaminated by the radioactive fallout from the 1945 test explosion at the Trinity Site near Alamogordo. She added that uranium workers in New Mexico also have been harmed by radiation and that Holtec's proposed facility is located in an area with predominantly low incomes and a majority Hispanic population.

Founded in 1986, Holtec provides solutions for managing the backend of the nuclear power cycle for commercial nuclear power plants.

The company is headquartered in New Jersey and has locations throughout the world, including Pennsylvania and Florida.

Another public meeting will be held today in Hobbs tonight and third meeting will be held Thursday in Carlsbad.

The public also can mail comments to the NRC at One White Flint North Building, 11555 Rockville Pike, Rockville, Maryland 20852-2738, or post comments online at regulations.gov. The deadline for public com-

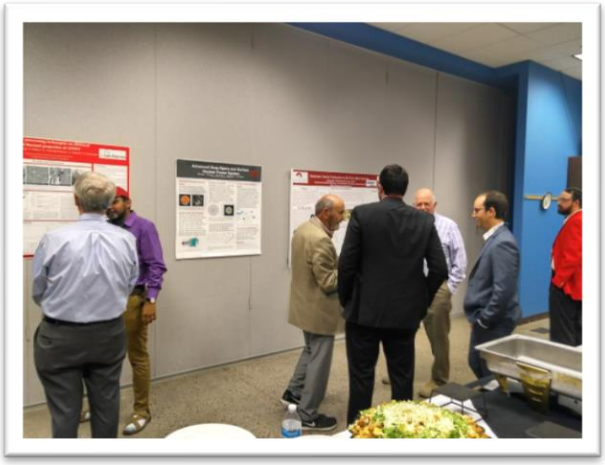
Figure 19 Newspaper article

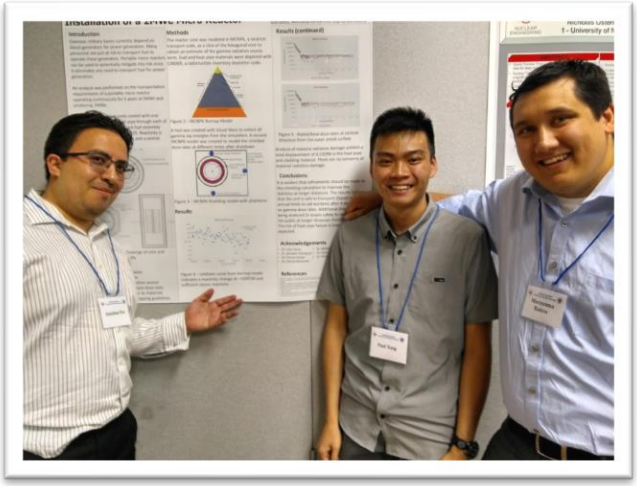
ANS Trinity Banquet

Trinity Section dinner meeting with speaker. Speaker: John E. Kelly, PhD, ANS Vice President / President-Elect. (Topic: Perspectives on the Future of Nuclear Power in the United States). Location: National Museum of Nuclear Science & History, Albuquerque, NM.

Currently there are dozens of Light Water Reactors (LWRs) under construction around the world. Most experts expect LWR technology to be the primary source of nuclear power well into the latter half of this century. At the same time there continues to be strong interest in moving to more advanced LWR technology (such as Small Modular Reactors) and Generation IV systems. The presentation will provide perspectives on the future of nuclear power in the United States and how the integration of LWR technology and Gen IV technology can lead to sustainable nuclear power.

Students that presented research at the ANS Student Conference, also presented research at this meeting. The ANS UNM took care of the cost of the dinner for the students only. This time we tripled the attendance of UNM students at this dinner, usually around 5 students from UNM attend this dinner. We also had UNM faculty attending this dinner.





SOCIALS

Halloween Party

The ANS UNM organized for the first time a Halloween party where we gave three lobo cars with a value of $20 USD to the best (3) costumes.

Daytona Beach

After the ANS Student Conference 2018 in Gainesville, FL, (17) students had a social at Joe's Crab in Daytona Beach on April 8th, 2018.

Figure 20 Ira and Laureen

Figure 21 Sophomore group

Figure 22 Senior group

CONFERENCES

ANS Winter Meeting and Expo 2017

Location: Marriot Wandmark Park, Washington, D.C.

Dates: October 29-November 2, 2017

Melissa Moreno and Gemma (Ira) Strong attended the meeting and presented research at Student Poster presentation. Besides attending the Student Section Committee meeting and participating at the Student Program.

- Scaled Experiment Investigating Sonomechanically Enhanced Inert Gas Sparging Mass Transfer, Gemma Irais Strong (University of New Mexico), Floren Rubio, Edward Blandford
- Uncertainty Budgets Associated with Calibration, Melissa Moreno (University of New Mexico)

ANS Student Conference 2018

Every year the UNM Student Section try to send students to attend the conference and present their senior design projects at the ANS Student Conference. This year we had a total of 22 UNM students attending the conference and a total of 12 presentations. We also brought home 5 award including top paper, best paper and commendation of leadership and service. This is record of attendance, of presentations and awards.

We also had the participation of the ANS UNM Executive Committee at the Student Section Committee meeting, and Deep Patel volunteer for the Appropriations Committee, and Ira Strong for the Student Section Committee, for ANS national, because we think that it is important to have presence not only at the local student section level but at the national level as well.

- Effect of processing techniques on electrical and thermal properties of 14YWT
  Deep R. Patel, Osman Anderoglu (Univ of New Mexico), U. Carvajal-Nunez, A. Nelson, S. A. Maloy (LANL)
- Investigation of Irradiation Resistance of Haynes 230 for Advanced Nuclear Reactors

Carly J. Romnes, James Pike (Univ of New Mexico), S. A. Maloy, E. Aydogan, D. V. Rao (LANL), Osman Anderoglu (Univ of New Mexico)

- Considerations of Stochastic Neutron Populations in Multiplying Media Patrick F. O'Rourke, Anil K. Prinja (Univ of New Mexico)

- Development of Direct Pinhole Imaging System for Low-Energy Radiation Sources Phoenix Baldez, Nathan James Gale (Univ of New Mexico), Paul DeRego (Kansas City Plant), Adam Hecht (Univ of New Mexico)
- Heat Transfer Performance between Plain- and Twisted-Tube Single-Wall Heat Exchangers in Fluoride Salt Cooled High Temperature Reactors (FHRs) Denise Chavez (Univ of New Mexico), Bryan Wallace (UNM), Joel Hughes (Kairos Power), Amir Ali (UNM), Edward Blandford (Kairos Power)
- Development of a Low Enriched Uranium Nuclear Thermal Rocket Inspired by the Space Nuclear Thermal Propulsion Project Carly J. Romnes, Denise E. Chavez, Brandon J. Martinez, Nicholas M. Osterhaus, William R. Ford (Univ of New Mexico), Roger X. Lenard (Little Prairie Services)
- Surface and In-Space TRIGA Reactor Power Production System Alan S. Evans, Kyle S. Beling, James Jackson, Thomas Perea, Gary Whitlow (Univ of New Mexico)
- Design of a Portable, Scalable SMR Transport System Jonathan Paz, Moctezuma Ramos, Paul Chu-En Yang, Alvaro Gonzales, Sophia Borowsky, Nathan James Gale (Univ of New Mexico)
- Radiolytic Ozone Production in Air from Alpha Particles, Ramda G. Galo Mairena (Univ of New Mexico), Prakash Koonath (Tanner Research, Inc.), Adam Hecht (Univ of New Mexico)
- Time Dependent Neutron Density Simulation of the UNM AGN-201M Reactor, Melissa Andrea Moreno, Anil Prinja, Robert Busch (Univ of New Mexico)
- Scaled Experiment Investigating Sonomechanically Enhanced Inert Gas Sparging Mass Transfer, Gemma Irais Strong, Floren V. Rubio, Edward D. Blandford (Univ of New Mexico)
- Benefits of Using Monte Carlo N-Particle Code to Perform Static Criticality Calculations in Spent Fuel Assemblies, Joseph King (Univ of New Mexico)

Awards:


Certificate of Award

Presented To

Carly J. Romnes

for best paper submission in

Aerospace Nuclear Science & Technology

Awarded at 2018 ANS Student Conference, Gainesville FL

This 7th Day of April Year 2018

Signed

Patrick Moo — General Co-Chair

Rae Bruenderman — Logistics Co-Chair

Zander Mausolff — Technical Program Co-Chair


Certificate of Award

Presented To

Carly J. Romnes

for best paper submission in

Materials Science and Technology

Awarded at 2018 ANS Student Conference, Gainesville FL

This 7th Day of April Year 2018

Signed

Patrick Moo — General Co-Chair

Rae Bruenderman — Logistics Co-Chair

Zander Mausolff — Technical Program Co-Chair


Certificate of Award

Presented To

Deep R. Patel

for top paper submission

Awarded at 2018 ANS Student Conference, Gainesville FL

This 7th Day of April Year 2018

Signed

Patrick Moo — General Co-Chair

Rae Bruenderman — Logistics Co-Chair

Zander Mausolff — Technical Program Co-Chair


Certificate of Award

Presented To

Alan S. Evans

for best paper submission in

Aerospace Nuclear Science & Technology

Awarded at 2018 ANS Student Conference, Gainesville FL

This 7th Day of April Year 2018

Signed

Patrick Moo — General Co-Chair

Rae Bruenderman — Logistics Co-Chair

Zander Mausolff — Technical Program Co-Chair


American Nuclear Society
Student Sections Committee

Commendation for Service and Leadership

2017 - 2018

Gemma Irais Strong

whose demonstrated leadership and commitment to service and outreach has resulted significant achievements and advancement of the nuclear community

American Nuclear Society

Student Sections Committee Chair

4/7/2018

Date

Figure 23 Senior Design team receiving award

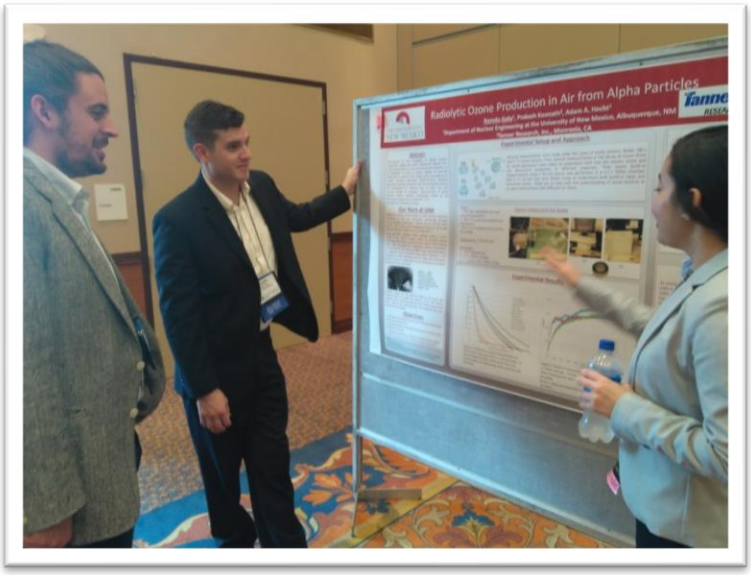


Figure 24 Ramda Galo, Poster Session

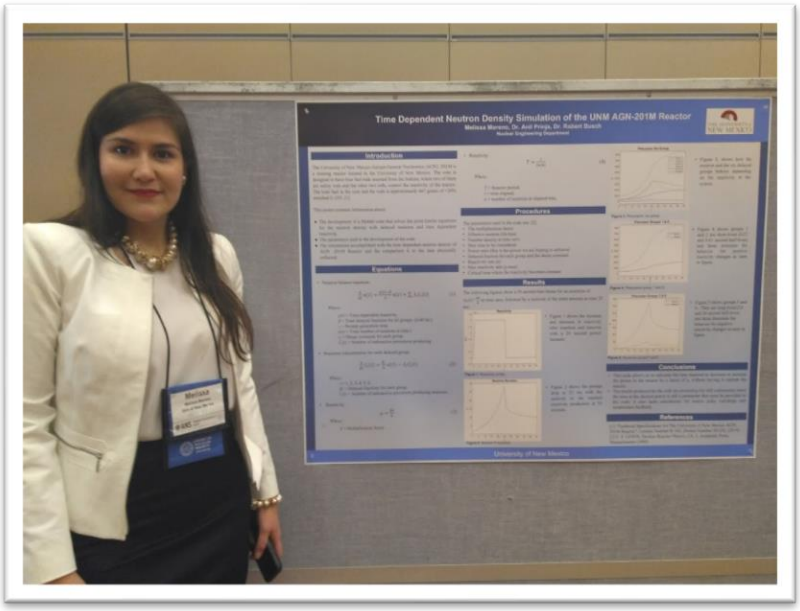


Figure 25 Melissa Moreno, Poster Session

Figure 26 UNM students group picture

Figure 27 Phoenix Baldez Presentation

OUTREACH EVENTS

GIRL Extravaganza

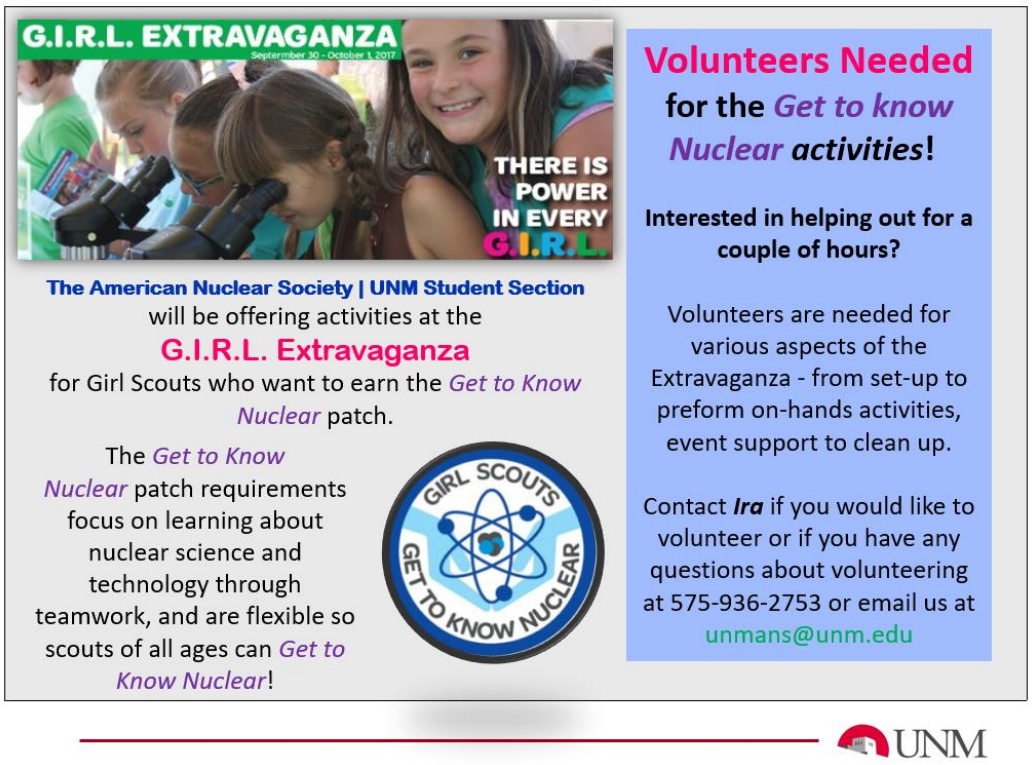
Location: Rotary Park, Bernalillo

Date: Saturday, 09/30/2017

Time: 9:00am – 5:00pm

Type: Joint

Event Size: ~200 students and parents



Volunteers: Phoenix Baldez, Ira Strong, Mel Strong, Ramda Galo, Melissa Moreno, Floren Rubio, Carl Willis, Denise Chavez, Corey Skinner

Activities: The GIRL Extravaganza was done in conjunction with the UNM Society of Women Engineers (SWE) and the local Girl Scouts troops. It was the first event at which the UNM ANS Section offered the chance for Girl Scouts to earn their Get to Know Nuclear patch and over 100 patches were given out! Seven stations were setup and after the Girl Scout obtained stamps from six of the seven stations they could then claim their patch. The first station dealt with half-lives and how, over time, the amount of radioactive material decreases by half. This was done by giving each Girl Scout a licorice rope and they would

cut it in half then mark the height on some graph paper then, sometime later cut it in half again and mark the height. After this was done about 5-6 times the Scouts connected their points to see how half-life leaves an exponentially decreasing amount of material. Next Fusion and Fission were explained. Fusion was explained using balls while fission was explained by toppling dominoes. The third station looked at the history of women in nuclear science and their impact on the world including Marie Curie, Shirley Ann Jackson, Allison Macfarlane, Kristine Svinicki and J'Tia Hart. The next two stations looked at radioactive material and some radiation detectors. Multiple radiation detectors were brought out and the Scouts got a brief introduction to how they detect radiation and what each detector is used for. Then they were able to grab their own detector and look at a variety of radioactive materials such as a piece of the Chicago Pile fuel, natural rocks rich in various radioactive isotopes, smoke detectors, fiestaware, some samples from Marie Curie's lab and some pieces of refined uranium. The station after those two conjoined stations was modeling the atom. Heavy stock paper and scissors were provided, and the paper had cut outs with electron orbits, protons and neutrons with instructions on how to create a model of an atom. The final station was the nuclear technology station where nuclear power generation was explained as well as the nuclear fuel cycle. As said before, over 100 Girl Scouts were able to receive their Get to Know Nuclear patches and fun was had by everyone involved!

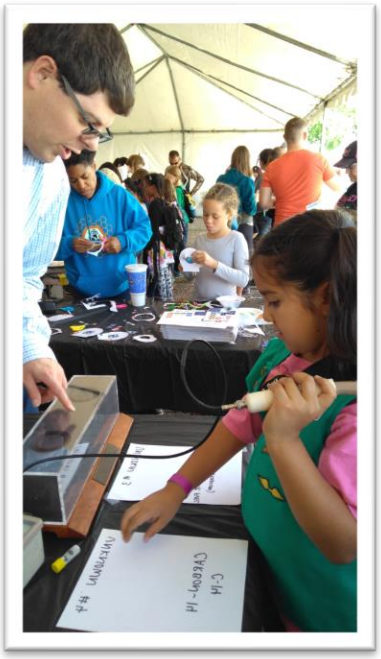


Figure 28 Information Table

Figure 29 The super team that made this possible

Figure 30 Phoenix Baldez

Figure 31 Melissa Moreno

Engineering Open House

Location: Centennial Engineering Center, UNM

Date: Saturday, 10/07/2017

Time: 10:30am - 2:00pm

Type: Participation

Event Size: ~300 students and parents (High schoolers from around Albuquerque)

Volunteers: Phoenix Baldez, Melissa Moreno, Carl Willis.

Activities: Every year the UNM School of Engineering holds an open house that is focused on recruiting high school seniors to attend college at UNM and specifically interest them in engineering. Every department has a booth to hand out information packages about their degree program. The UNM ANS Chapter volunteered to have a booth in conjunction with the Nuclear Engineering Department's booth so that ANS could show off some hands-on activities. These activities included the detection of some low level radioactive material through Geiger Counters, a demonstration of various gamma ray energies using a Sodium Iodide detection system and some historical artifacts from nuclear history. There were also samples from Marie Curie's lab (which were still radioactive), a piece of Chicago Pile, with fuel included as well of some devices with radium paint and natural radioactive rocks. Approximately thirty high schoolers signed their name to show interest in not only nuclear engineering but specifically joining ANS once they attended UNM. It was also an excellent educational experience to be able to teach kids, as well as their parents, about radioactivity at the same time. It is safe to say that this was most of the parent's first exposure to any sort of nuclear science and with their kids showing interest in what was said, they learned a lot along the way!

Figure 32 Phoenix Baldez

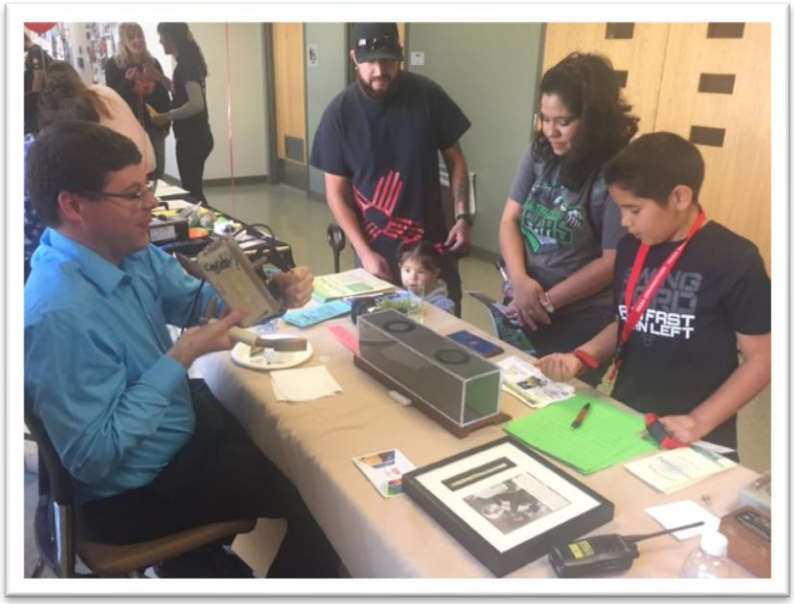


Figure 33 Professor Carl Willis

Jefferson Middle School 8th Grade Science Class Teaching

Location: Jefferson Middle School

Date: Thursday, 11/02/2018

Time: 9:00am – 4:00pm

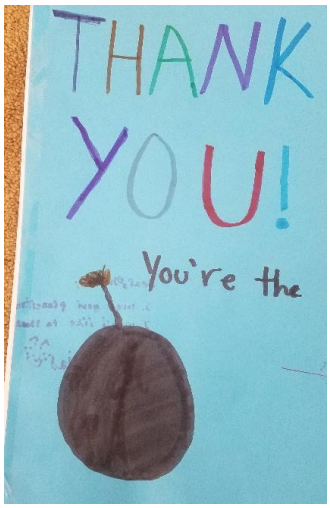
Type: Organized

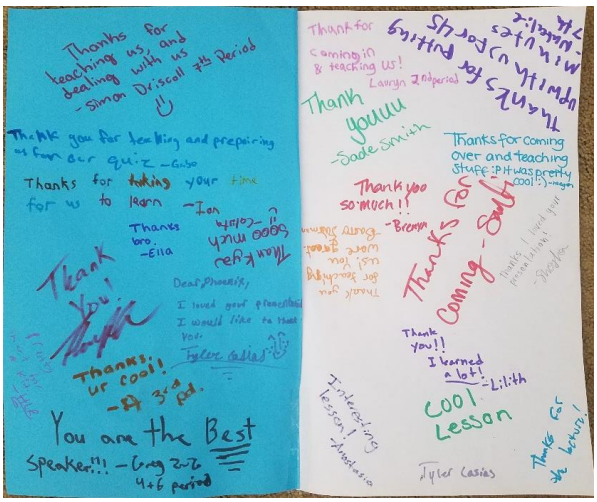
Event Size: ~100 students

Volunteers: Phoenix Baldez

Activities: Phoenix Baldez was invited to teach classes at a local middle school on November 2rd. Jefferson Middle School (JMS) is near UNM and it is hoped that many JMS students will consider UNM for college. 8th grade students from Sherie Pennebaker's physical sciences classes, five in total, had a test on the nuclear science the following day. Phoenix gave a guest lecture which covered all the fundamentals of nuclear science and answered any questions the students had in general and with concepts which they were not understanding for their test. After the class felt secure in their knowledge for the test, Phoenix polled the class on what they wanted to learn about and choose the three most popular topics out of: radiation detection, fission reactors, fusion reactors, nuclear weapons, nuclear medicine, high energy physics and nuclear safeguards. After the three optional topics were covered Phoenix brought out six Geiger Counters and three radioactive sources and three shielding materials. The three sources were Am-241 from a smoke alarm, a piece of fiestaware and a gas mantle doped with thorium while the shields were paper, aluminum and lead. All the proper precautions were taken with the

radioactive sources and the lead was completely isolated from the students. The students then enjoyed experimenting with the various radioactive sources and shielding materials as Phoenix explained the physical concepts being demonstrated. The photos show a thank you card signed by some of the students in Sherie's classes.





Math Moves U

Location: Mechanical Engineering Building, UNM

Date: Saturday, 11/11/2017

Time: 9:00am – 3:00pm

Type: Joint

Event Size: ~200 students

Volunteers: Phoenix Baldez, Joseph King, Ramda Galo, Melissa Moreno

Activities: Math Moves U was a Raytheon event to promote math and engineering disciplines. ANS put on a lecture to approximately 200 students over the course of a day about the basic math used in nuclear engineering. The most basic mathematical concept covered was the idea of exponential decay and gamma ray attenuation in materials. Multiple instances of these two phenomena were discussed and the math was analyzed at a very basic level. Then for an activity the students cut in half licorice rope around 5 or 6 times and plotted the results to see how radioactive decay followed an exponential trend. Then they used Geiger counters, some low level radioactive sources and shielding materials to explore attenuation. They saw the differences between the shielding provide by paper, aluminum and lead when exposed to alphas, betas and gammas. It was then explained how material thicknesses or material compositions could be calculated by using various radioactive sources and detectors.

Figure 34 Phoenix Baldez and Ramda Galo

Figure 35 Presentation

The Art of Science

Location: Centennial Engineering Center, UNM

Date: Saturday, 12/02/2017

Time: 9:00am – 5:00pm

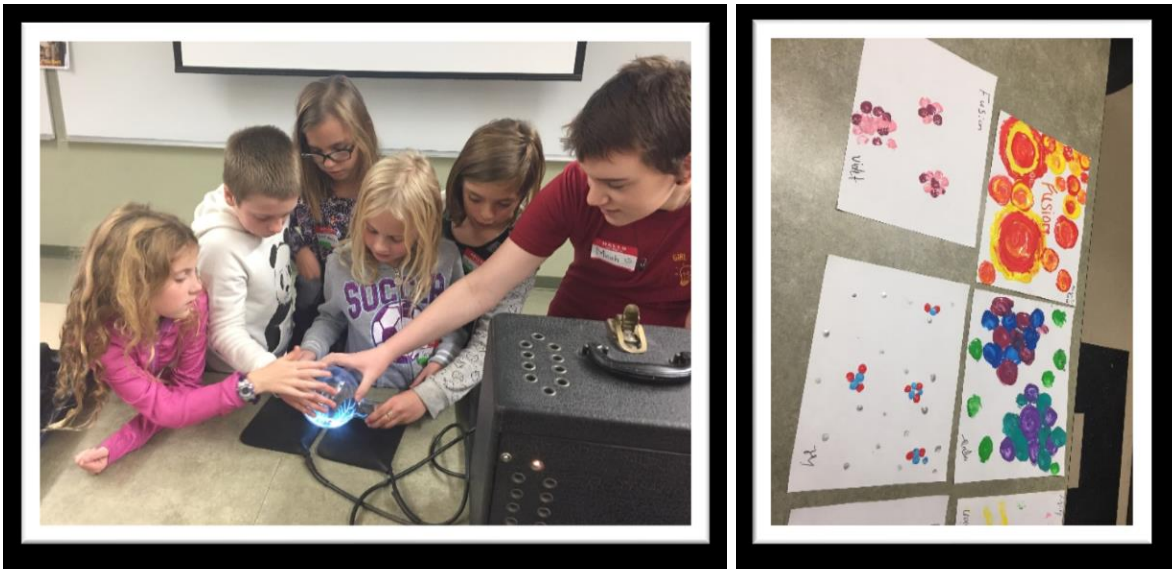
Type: Joint

Event Size: ~100 students

Volunteers: Phoenix Baldez, Ira Strong, Ramda Galo, Melissa Moreno, Carl Willis, Corey Skinner, Micah Glidewell

Activities: The Art of Science event was the second joint event done with the UNM SWE chapter and local Girl Scout troops. This event focused on the artistic side of science and how there are many visual effects of radiation and artistic takes on nuclear science. For this event there were five stations and the scouts must go to each station to receive their Get to Know Nuclear patch. First a short lecture was given about the importance of nuclear energy both technically and culturally throughout the world and the positive and negative effects it has had through its relatively short history. Then, while the scouts completed the activities at each station a slide show of nuclear art was shown, this highlighted notable artists and archivists such as Patrick Nagatani, Jessie Boylan and Igor Kostin. The first station that the scout visited was a microwave generator which was used to excite various gasses. Depending on the composition of the gases the excitation produced varying colors and, in some cases, lightning like effects like what is seen in a plasma globe. Next was a station that had, what we called a lightning detector. Very high voltage was placed across an electrode and when exposed to alpha particles the air would breakdown and create a miniature lightning storm. Also, at this table was a sample of plastic that was placed in an electron accelerator and when exposed to light the damage from the electrons was clearly visible in a branching pattern. The next station was where the scouts were able to show case their own artistic abilities, both fission and fusion were described and demonstrated to them and then they were given a set of water colors and paper and ask for their own artistic interpretation of the two events. This activity had some amazing results that were truly creative! Finally, a cloud chamber was set up and the scouts were able to watch as a piece of rock which naturally contained high levels of radon, emitted alpha particles. The tracks from these alpha particles (and even occasionally a cosmic ray!) were clearly visible. Over all about 100 badges were given out at this event and not only did the girl scouts enjoy our activities but many colleges who were putting on other events said that didn't know all the cool things we got to do as nuclear engineers!

Figure 36 Ira Strong, Rada Galo and Phoenix Baldez



Jefferson Middle School Science Fair Judging

Location: Jefferson Middle School

Date: Friday, 01/26/2018

Time: 9:00am - 12:00pm

Type: Participation

Event Size: ~100 Students

Volunteers: Phoenix Baldez, Ramda Galo, Melissa Moreno, Joseph King

Activities: Jefferson Middle School has a large science fair every January and is always in need of additional judges for the student's poster boards. A few ANS volunteers donated their time to judge approximately five students each. The students were with their projects and they were then interviewed on their project and after a grading sheet was filled out. This is always a rewarding experience to see the next generation scientists and they ideas that they have. There were unfortunately no projects that dealt with radioactivity but the students, when they asked, were always excited to hear that they were being interviewed by nuclear engineers!

Jefferson Middle School Science Extravaganza

Location: Jefferson Middle School

Date: Monday, 01/29/2018

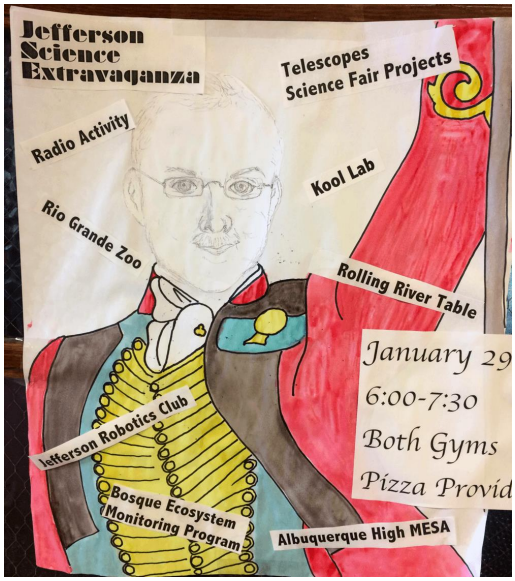
Time: 6:00pm - 8:00pm

Type: Participation

Event Size: ~50 students and parents

Volunteers: Phoenix Baldez, Melissa Moreno, Juan Dominguez

Activities: After the Jefferson Middle School has their science fair they hold a science extravaganza in which the winners of their science fair are announced and they invite science organizations from around the city to hold and outreach event. At this event ANS members were able to interact one on one with kids and parents who were interested in nuclear science. ANS promotional material was distributed to the parents as well as material for the UNM Nuclear Engineering department. There were also basic demos involving some radioactive sources, shields, Geiger counters, maps of the world's nuclear reactors and models of atoms used to demonstrate fusion and fission. We also were able to help correct "Radio Activity" (see photo below) and explain that while radio waves are a part of the electromagnetic spectrum they are not considered radioactivity such as gamma rays.



Hi Phoenix,

Thank you so much for participating in last night's Science Extravaganza. You and your friends are receiving rave reviews and, even better, I have a student who announced that he now wants to enter the field of nuclear engineering. Very cool!

Take care,
Suzy

Figure 37 Screenshot of email from JMS teacher Suzy Dunnum

Energy Day

Location: Centennial Engineering Center, UNM

Date: Saturday, 04/28/2018

Time: 9:00am – 5:00pm

Type: Participation

Event Size: ~200 students

Volunteers: Phoenix Baldez, Joseph King

Activities: At the UNM School of Engineering Energy Day ANS was able to set up a booth to help explain radioactivity to students as they toured through the many facilities UNM has to offer. They were able to experiment with Geiger counters, radioactive sources and shielding materials. They were then encouraged to ask questions about radiation and how nuclear science could be used to generate energy. Promotional material about the need of nuclear energy in a clean energy future were also given out and even some lively debates were had!

Figure 38 Joseph King

LETTERS OF SUPPORT

Department of Nuclear Engineering

April 29, 2018

Samuel Glasstone Awards Committee
American Nuclear Society
555 N. Kensington Avenue
La Grange Park, IL 60526-5535

Dear Awards Committee Members:

I am pleased to have this opportunity to lend my unconditional support to the nomination of the University of New Mexico (UNM) ANS Student Section for the Samuel Glasstone Award for the Best Student Section. The UNM Student Section, under the effective leadership of Section President Gemma Irais Strong, has been exceptionally active during the 2017-18 academic year, promoting and realizing student and community engagement through an unprecedented 57 events organized and successfully executed.

Adhering closely to an established governance structure, the Student Branch leadership has held regular meetings with full agenda and advance planning for all activities, consulted on a regular basis with the Faculty Adviser, and has brought several novel initiatives to me as the Department Chair. I do not recall witnessing such a deep level of engagement by the Section in previous years and it is a reflection of the current leadership's attitude and energy that the Student Section has generated so much excitement in the department, among students and faculty alike. Below I highlight some of the highly successful activities, which, I believe, justifies the Section receiving this prestigious honor.

From the beginning of the academic year, a major goal of the Student Section leadership was to ensure highly visible representation of the UNM NE department at the ANS Student Conference at the University of Florida in April 2019. Efforts encouraging students to attend and present papers at the conference were sustained throughout the year and fund raising goals to enable every interested NE student to attend were set and met. Through their tireless efforts, over twenty students were able to attend the conference, with the majority presenting papers on their undergraduate research and Capstone Design projects. Moreover, the UNM group received 4 best paper awards and a Commendation for Section President Ira Strong, representing a very laudable outcome for the students, Section and the Department.

The Section also had an exceptional year in their Outreach activities. Particularly noteworthy was an event where the Student Branch hosted 100 Girl Scouts with 7 different activity tables to earn the "Get to Know Nuclear Patch". This required considerable investment of personal time on the part of the leadership, recruiting volunteers, arranging transport to the location outside town, and setting up the activities. The successful event was prominently

featured on the School of Engineering and the University publicity websites. The Student Section also played an important role at the 2017 School of Engineering Open House in helping recruit high school students to the Department of Nuclear Engineering by setting up a booth with informational pamphlets and simple experiments to demonstrate radioactivity and detection. They also arranged multiple social events for students, including a Fall 2017 barbeque, which featured a book sale as a fund-raiser, and volunteering at the ANS Halloween party.

Recognizing a need to provide review and tutorial sessions on nuclear engineering course material, the Student Section leadership requested (and received) support from the Department Chair to establish a formal tutoring group comprised primarily of graduate students but also upper level undergraduates who wished to help. Judging from the participation at the weekly sessions, this novel, self-organized and largely volunteer activity has been a huge success and will be made a permanent feature by integrating it into the curriculum.

The Student Branch also hosted ANS President Bob Coward on his visit to the Department on February 19, 2018, arranging a day of activities that included a mini-conference and tours of the laboratories among other student-centric interactions. Similarly, they met with ANS Vice President/President Elect Dr. John Kelly over an informal lunch during his visit on April 23, 2018, and engaged him in an extended discussion on the future of nuclear power in the US. This visit was planned at the last minute but the Student Section were extremely professional and made timely arrangements to ensure a worthwhile interaction. They are very active in the local Trinity Section of the ANS, participating in the Executive Committee meetings and bringing formal funding requests for ANS conference travel. The Leadership also provided eligibility criteria for the creation of two $500 scholarships for UNM students to be awarded at the Trinity Spring Banquet.

These are just the highlights of an exceptionally productive year for the Student Section, which also included scheduling almost weekly speakers from the national labs and nuclear industry presenting on state-of-the-art technical topics as well as providing career advice. This year's Student Section Leadership has vastly surpassed previous years groups in the dedication, energy, and focus they have brought to the Section, and by voluntarily codifying their procedures and practices they will have a lasting impact. I recommend the UNM ANS Student Branch for the Glasstone Award, without any hesitation or reservation.

Please don't hesitate to contact me if you require additional information.

Sincerely,

Anil K. Prinja
Distinguished Professor and Department Chair

American Nuclear Society
Trinity Section

Nancy Jo Nicholas
Travis Trahan
Trinity Section, American Nuclear Society
P.O. Box 5367, Albuquerque, NM, 87185
May 1, 2018

Samuel Glasstone Awards Committee
American Nuclear Society
555 N. Kensington Avenue
La Grange Park, IL 60526-5535

Samuel Glasstone Awards Committee:

We are pleased and honored as Chair and Chair-Elect of the American Nuclear Society Trinity Section to give our Section's emphatic endorsement to the nomination of the **University of New Mexico ANS Student Section** for the **Samuel Glasstone Award**. We do so on the basis of having interacted directly with them over the past year and during that period, having had numerous opportunities to appreciate this student section's leadership team in action. This section also exemplifies the new breed of engineering researchers who work across traditional engineering disciplines to address a broad spectrum of nuclear challenges.

We (the Trinity Section) have historically had a difficult time engaging the faculty at UNM. As a result, the student sections at UNM have not always been strongly engaged with us. This year's Student Section has done a superb job of revitalizing their section to the strongest we have seen in recent memory. Their efforts have gone above and beyond what we would expect out of student sections at any university, especially when the relatively small size of the program at UNM is taken into account. This year, the UNM ANS Student Section has escalated their involvement at the university, local section, and national level.

At the local section level, they have sent at least one representative to all of our executive committee meetings, student attendance at our quarterly dinner meetings is up, and the student attendance at our annual meeting at the National Museum of Nuclear Science & History in Albuquerque tripled relative to the previous year. The UNM ANS Student Section also helped establish eligibility criteria for and select winners of two $500 scholarships from the Trinity Local Section to UNM students.

At the national level, the UNM ANS Student Section arranged and supported student attendance at the ANS Winter Meeting and 2018 ANS Student Conference. The UNM Student Section worked hard at fundraising and to ensure that all who wanted to attend were able to do so. Twenty-one students attended the Student Conference, where they gave 12 presentations and won 4 best paper awards.

The UNM ANS Student Section has also worked hard to benefit its members at the university as well as the people of the local community. They have hosted over 50 local events ranging from social to technical. These include arranging visits with ANS President Bob Coward and Vice President/President Elect John Kelly. They took the initiative to setup regular tutorial sessions in which junior students are mentored and tutored by graduate students and upper level undergraduates. The UNM ANS Student Section also participated in and organized several outreach events, including a major event to help 200 Girl Scouts earn their "Get to Know Nuclear" patches.

This student section is strong today because of the technical abilities, political savvy, and leadership skills of its leader, Gemma Irais (Ira) Strong. She is a truly devoted, hard-working supporter of the ANS. She has done an amazing job of inspiring her fellow students to both engage in ANS and be personal champions for all things nuclear. Her role in revitalizing the Student Section was doubtless a major contributing factor to her receiving the ANS Student Sections Committee Commendation for Service and Leadership. She and her fellow executive committee members have worked hard to document their work this year in a manual that will ensure that the good works done by the UNM Student Section do not end when the current leadership steps down. We have great confidence that this year's section has laid a strong foundation for continued and sustained excellence, and we look forward to seeing what this Student Section achieves in the coming years.

We wholeheartedly endorse this nomination for the 2018 Glasstone Award. We believe that the UNM ANS Student Section's reputation will be enhanced through this recognition in the increasingly important area of early-career public service – a vital part of the ANS's future.

Sincerely,

Nancy Jo Nicholas, ANS Trinity Section Chair

Travis Trahan, ANS Trinity Section Chair-Elect

CONCLUSION

The American Nuclear Society, University of New Mexico Student Section has been a member since 1967 and has provided to students with the opportunity to reach out to the public, volunteer in the community and increase professional interaction.

Now, more than ever the ANS UNM student section is committed to continue its work and reach out to more people. One of the next steps of our organization is being more involve in policy. We recently attending an NRC public meeting and we were mesmerized by the amount of misconceptions that are out there about the nuclear industry.

Luckily, we feel that the ANS UNM is changing the panorama at the university level and its creating a positive view about nuclear industry. The Student Section has received thanks and praise from members of the community as well as parents and students at events. All the officers of this student section have been doing an excellent job this year and have dedicated a large amount of their time to coordinate numerous events.

Thank You so much for your support!

Ira Strong

Ira Strong
ANS UNM Student Section
President 2017-2018