ANS Conference

2015 National Student Conference

Powering Tomorrow Together

April 9-11, 2015
Texas A&M University
College Station, TX

ANS Conference
Student Conference 2015

Our most sincere thanks to the following contributors for their support of the 2015 Student Conference:

Global Sponsors

AMERICA'S NAVY

National Sponsors

Entergy
THE POWER OF PEOPLE®

ANS OPD

Los Alamos
NATIONAL LABORATORY
EST. 1943

AREVA CANBERRA

Regional Sponsors

ASME
SETTING THE STANDARD

BROOKHAVEN
NATIONAL LABORATORY

IAEA
International Atomic Energy Agency

Dominion®

KAPL
Knolls Atomic Power Laboratory

BECHTEL

BETTIS
LABORATORY

Sandia National Laboratories

INL Idaho National Laboratory

Argonne
NATIONAL LABORATORY

OAK RIDGE
National Laboratory

Westinghouse

SOUTHERN COMPANY

Local Sponsors

ANS Human Factiors, Instrumentation & Controls Division
ANS Reactor Physics Division
ANS Nuclear Installation Safety Division
ANS Materials Science & Technology Division
ANS Education, Training & Workforce Development Division
ANS Fuel Cycle & Waste Management Division
INL Advanced Test Reactor NSUF
ANS Mathematics & Computation Division

Co-Chair:
Sarah Camba
Texas A&M University

Co-Chair:
Timothy Crook
Texas A&M University

Technical Director:
Lane Carasik
Texas A&M University

Finance Director:
William Gordon
Texas A&M University

Logistics Director:
Matt Fitzmaurice
Texas A&M University

Marketing Director:
Natalie Galegar
Texas A&M University

Conference Coordinators

Finance Team:

Julien Clayton - Finance Liaison

Technical Team:

Laura Sudderth - Workshop Coordinator
Philip Jones - Sessions Coordinator

Marketing Team:

Jean Armand Lin - Mobile App Coordinator
Elizabeth Tindle - Student/University Coordinator
Shane Seabolt - Career Fair Coordinator
Logan Harbour - Website Coordinator

Logistics Team:

Marina Pulley - Activities Coordinator
Kevin Miller - Transportation Coordinator
Tommy Ondara - Hospitality Coordinator

Table of Contents

Sponsors	2
Meet our Team	3
Table of Contents	4
Welcome Letter	5
Conference Itinerary/Information	6-7
Conference App/Social Media	8
Tours	9-12
Workshops	13-15
Panels	16-19
Lunch-and-Learns	20-21
Dinners and Socials	22-24
Thank You	25
Career Fair	26-27
Poster Session	28-29
Technical Sessions	30-43
Transportation	44
Maps	45-49

On behalf of the Texas A&M University American Nuclear Society Student Chapter and our Conference Planning Committee, we would like to welcome you to College Station, Texas and the 2015 American Nuclear Society Student Conference! This weekend will be full of events that will highlight the conference theme, Powering Tomorrow Together. At this conference, you will have the opportunity to learn about the growing globalization of the nuclear and health physics industries, while becoming familiar with the international nuclear community through internationally recognized keynote speakers, workshops, technical sessions, special paper tracks, and interaction with international students. We hope that you gain inspiration in the nuclear sciences and develop a passion for your chosen field by interacting with both domestic and international students by sharing experiences, exchanging ideas, and discussing global research.

Our vision for the conference is that students in attendance would be inspired to pursue international opportunities throughout their careers and become global leaders in nuclear industries. With nuclear projects increasingly seeing international collaborations it is important to learn from the experience of professionals, acknowledge the unique challenges of multinational projects, and explore benefits to being a part of the global community.

We hope that you take advantage of all the conference events this weekend and everything our town and university have to offer. In order to help you fully experience the conference as planned, there is a conference app for both Android and iOS platforms. The app contains useful information including bus schedules, conference venue maps, and push notifications for any changes in the schedule.

In your free time, we encourage you to explore our campus, say Howdy to anyone you meet, and enjoy the Northgate district. College Station, commonly referred to as Aggieland, is a welcoming community that is always thrilled to have visitors. Texas A&M is eager to be hosting the ANS Student Conference. If you have any questions throughout the conference please contact conference headquarters at (979) 847-5818.

Thank you for joining us this weekend and welcome to Aggieland!

The 2015 ANS Student Conference Planning Committee

Thursday

7:00a-4:30p	Off-Campus Tours *(pick up from hotels)*
7:30-8:30a	Breakfast *(served at all hotels)*
8:00a-5:00p	Campus Non-Technical Tours *(see Campus Tours page)*
9:00a-10:00a	Nuclear Science Center Tour and TRIGA Reactor Pulse I *(from MSC bus stop)*
9:00-10:30a	TEEX Disaster City - Radiological Disaster and Response Workshop I *(from MSC bus stop)*
10:00a-2:00p	**Los Alamos National Laboratory** Nuclear Security Initiative Workshop *(MSC 2406)*
10:00a-2:00p	Technical Presentation Practice *(MSC 2500)*
10:30a-11:30a	Nuclear Science Center Tour and TRIGA Reactor Pulse II *(from MSC bus stop)*
11:00a-12:30p	TEEX Disaster City - Radiological Disaster and Response Workshop II *(from MSC bus stop)*
11:00a-1:00p	Lunch *(boxed lunches served outside MSC Bethancourt Ballroom, general seating available in 2300C)*
11:00a-1:30p	Computational Fluid Dynamics Workshop *(MSC 2405)*
11:00a-2:00p	**AREVA/CANBERRA** Global Fuel Cycle Workshop *(MSC Gates Ballroom)*
12:00-1:00p	Nuclear Science Center Tour and TRIGA Reactor Pulse III *(from MSC bus stop)*
12:00-5:00p	Campus Laboratory Tours *(see Laboratory Tours page)*
1:00-2:30p	TEEX Disaster City - Radiological Disaster and Response Workshop III *(from MSC bus stop)*
1:30-2:30p	Nuclear Science Center Tour and TRIGA Reactor Pulse IV *(from MSC bus stop)*
2:00-4:00p	K-12/Scout Merit Badge Workshop *(MSC 2405)*
2:00-5:00p	RELAP5 Workshop *(MSC 2500)*
3:00-4:00p	Nuclear Science Center Tour and TRIGA Reactor Pulse V *(from MSC bus stop)*
3:00-4:30p	TEEX Disaster City - Radiological Disaster and Response Workshop IV *(from MSC bus stop)*
6:00-8:30p	Opening Reception and BBQ Dinner *(MSC Bethancourt Ballroom)*
9:30-11:00p	Northgate Social *(Rebel Draft House Northgate)*

Friday

7:30-8:30a	Breakfast *(served at all hotels)*
9:00-10:30a	**Navy Recruiting Command** Diversity in Nuclear Engineering Panel *(MSC 2401)*
9:00a-11:00p	Technical Sessions I *(MSC 2500-2504)*
11:00a-1:00p	Lunch *(boxed lunches served outside MSC Bethancourt Ballroom, general seating available in 2300C)*
11:00a-1:00p	Lunch-and-Learns **American Society of Mechanical Engineers Nuclear Engineering Division** *(MSC Bethancourt Ballroom 2300D)* **Entergy** *(MSC 1402)* **ANS PEEC Professional Engineering Exam and Licensure Information** *(MSC 1401)*
12:00-5:00p	Career Fair and Interviews *(MSC 2406)*
1:00-2:30p	International Business Experiences Panel *(MSC 2401)*
1:00-3:00p	Technical Sessions II *(MSC 2501-2504)*
1:00-3:00p	Young Member Group's Involvement in ANS National & Writing a Winning Student Conference Proposal Panel *(MSC 2500)*
3:20-5:00p	Technical Sessions III *(MSC 2500-2504)*
6:00-8:00p	Tex-Mex Dinner *(MSC Bethancourt Ballroom)*
9:00-10:30p	**Oak Ridge National Laboratory** Social *(Upstairs at The Backyard Northgate)*

Saturday

7:30-8:30a	Breakfast *(served at all hotels)*
9:00a-11:00a	Technical Sessions IV *(MSC 2500-2504)*
9:00a-11:00a	**Idaho National Laboratory** Current Topics in Space Nuclear Research Panel *(MSC 2400)*
9:00a-11:00a	Graduate School Informational Panel *(MSC 2401)*
9:00-4:00p	Career Fair and Interviews *(MSC 2406)*
11:00a-1:00p	Lunch *(boxed lunches served outside MSC Gates Ballroom, general seating available in 2300C)*
11:00a-1:00p	Lunch-and-Learns **Bechtel Marine Propulsion Corporation (Bettis and KAPL Labs)** *(MSC Bethancourt Ballroom 2300D)* **Advanced Test Reactor National Scientific User Facility** *(MSC 1402)* **Sandia National Laboratory** *(MSC 1401)*
11:00a-1:00p	Student Sections Committee Meeting *(MSC 2401)*
1:00-3:00p	Technical Sessions V *(MSC 2500-2504)*
1:00-3:00p	**Navy Recruiting Command** Regulatory Affairs Panel *(MSC 2400)*
1:00-4:00p	**Dominion** Poster Session *(outside MSC Bethancourt Ballroom)*
3:20-5:00p	Technical Sessions VI *(MSC 2500-2504)*
6:00-9:30p	Awards Ceremony and International Banquet *(MSC Bethancourt Ballroom)*
10:30p-12:00a	**INMM/WiN/HPS** Social *(2nd Floor at The Corner Bar Northgate)*

Additional Information

Registration Desk Location:

Wednesday	7:00-9:00p	Hilton College Station
Thursday	8:00a-5:00p	Lounge Outside Gates Ballroom (outside MSC 2400)
Friday	8:00a-5:00p	Command Center (MSC 2402)
Saturday	8:00a-5:00p	Command Center (MSC 2402)

Command Center:
The Command Center is Room 2402 in the MSC. Come by with any questions! A volunteer will always be available to help!

Help Line:
Call (979) 847-5818 with any questions, we're available 24/7.

Wi-Fi:
Wireless internet access is available through eduroam for participating university students and faculty. Please visit the Command Center or ask the registration clerk if you do not have access to the eduroam service.

Download the OFFICIAL 2015 Conference App

Search: ANSStudent

Scan to download!

Follow us on Social Media

facebook.com/ANSStudentConference2015

@ANSStuCon #PTT2015

South Texas Project Nuclear Power Plant

The South Texas Project (STP) Electric Generating Station, located in Bay City, Houston, is one of the largest nuclear power facilities in the nation. STP consists of two operational reactors, Westinghouse 4-loop, which was opened in 1976. The station occupies a 12,200-acre site on the Colorado River about 90 miles southwest of Houston. STP is unique in its design of the safety systems for the reactors. Each unit has three, rather than the customary two, fully independent emergency core-cooling systems (ECCS) and associated support systems. The STP reactors are operated by the STP Nuclear Operating Company (STPNOC). Ownership is divided among NRG Energy at 44 percent, San Antonio municipal utility CPS Energy at 40 percent and Austin Energy at 16 percent.

Comanche Peak Nuclear Power Plant

Comanche Peak Nuclear Power Plant is located in Somervell County, Texas. This nuclear generation stations consists of two operational reactors of a Westinghouse 4-loop design, which began operation in 1990 and 1993. The nuclear power plant is located 40 miles southwest of Ft. Worth and about 60 miles southwest of Dallas. It relies on nearby Squaw Creek Reservoir for cooling water. The plant has about 1,300 employees and is operated by Luminant Generation. In June 2008, the U.S. Nuclear Regulatory Commission (NRC) approved a request to increase the generating capacity of Units 1 and 2 by approximately 4.5% each.

Nuclear Science Center

Currently celebrating its 56th anniversary, this facility has a one-megawatt TRIGA swimming pool reactor that can be pulsed and a variety of other features including experimental laboratories, a large irradiation cell, beam ports, a thermal column and a pneumatic "rabbit" system. One of the best-equipped facilities of its type in the country, the facility is used in our laboratory courses as well as our research program.

Fuel Cycle and Materials Laboratory

The Fuel Cycle and Materials Laboratory (FCML) was established to study current issues in the nuclear fuel cycle, including materials and chemical processing, advanced fuels and materials, and waste immobilization. Equipment in FCML includes high temperature furnaces, two inert atmosphere gloved boxes, and a 90-ton hydraulic press. These may be configured for casting, instrumented sintering, cold or hot pressing, and hot extrusion. Further, the laboratory is equipped and has been approved for the handling, testing and characterization of radioactive materials. Currently funded projects from the US Department of Energy include materials processing activities to develop advanced nuclear fuels for burning transuranic radionuclides and radioactive waste forms for isolating fission products.

Thermal Hydraulics Research Laboratory

The Thermal-Hydraulic Research Laboratory at Texas A&M University is currently conducting pure and applied research to support the nuclear energy industry. We also conduct extensive research on non-nuclear applications. The laboratory is conducting a series of experimental and computational activities using the state-of-the-art advanced techniques in different engineering areas. This laboratory includes the former facilities of the Laser Diagnostics Multiphase Flow Laboratory. This laboratory primary focus was to investigate the complex, multiphase flow of multiscale, multi-physics flow phenomena using non-intrusive global field measurement techniques. The laboratory provides the ability to use state-of-the art particle image velocimetry techniques to study these flows. The laboratory is equipped with fast-pulsed, high-energy lasers and fast high-resolution cameras. Data are analyzed using in-house developed tracking, imaging and pattern recognition routines. The combination of instantaneous measurements of full-fields of velocity and laser-induced temperature measurements enables a multitude of interesting studies of single and multiphase flows.

Accelerator Laboratories

The Accelerator Laboratory is one of the largest university ion irradiation facilities in the U.S. A total of five accelerators are able to deliver virtually all ions in the periodic table with ion energy from a few hundred eV to a few MeVs. The lab provides unique capabilities to perform accelerator based irradiation studies on various nuclear materials. The Accelerator Laboratory is also very active in multidisciplinary research, including fundamental ion solid interactions, accelerator based ion beam mixing, ion beam assisted film deposition, ion doping, Rutherford backscattering spectrometry, elastic recoil detection analysis, nuclear reaction analysis, and particle induced X-ray emission analysis.

George Bush Presidential Library and Museum

Through artifacts, film, photographs, documents, music, sound effects and interactive videos, this special museum experience encompasses much of U.S. history. The museum's exhibits reveal the unique influences and challenges that shaped George Bush's life and presidency. **Take TAMU Bus Route 05 outside the MSC.**

Campus Walking Tour And Memorial Student Center

On Aggie Muster Day, 1951 the Memorial Student Center was officially dedicated to all Aggies who died in World Wars I and II. A memorial plaque calling out the names of all those to whom the building was initially dedicated hangs just inside the northern entrance. In 1976, shortly after the end of U.S. involvement in the Vietnam war, the building was rededicated to all Aggies who have died in all wars past, present, and future. **Guided tours are available during the day from the first floor of Rudder Tower (adjacent to the MSC)**

Bonfire Memorial

The Bonfire Memorial embodies many layers of meaning; a deep sense of belonging, a strong spirit of teamwork, leadership, and an enduring sense of tradition. The Bonfire Memorial celebrates the tradition, history and spirit of Texas A&M, and the dedication of those involved in the tragic collapse of the 1999 Bonfire.

Los Alamos National Laboratory Nuclear Security Initiative

Thursday April 9th, 10:00a - 2:00p

MSC 2406

Facilitated by: Dr. William Charlton, Director, Nuclear Security Science and Policy Institute (NSSPI), Texas A&M University and Dr. Sunil Chirayath, Asscociate Director, NSSPI, Texas A&M University

The Nuclear Security Initiative (NSI) is an exercise designed by the faculty at the Nuclear Security Science & Policy Institute (NSSPI). The NSI is a table-top exercise that aims to teach students practical applications of nuclear security at facilities. Technical and public policy officials use very similar exercises to simulate security and protection systems of nuclear facilities around the world.

The exercise, moderated by an esteemed NSSPI faculty member, familiarizes students with basic concepts governing physical protection systems. Students will aim to bolster the various systems implemented in a nuclear facility by recognizing vulnerabilities of the current system. Teams of participants will be confronted with a nuclear security risk and tasked with developing various pathways for an adversary to reach the vital nuclear materials. Each pathway incorporates different delay times and probability of interception from the facility's security team.

Each team will present its most vulnerable pathway and determine the effectiveness of the current system at preventing adversarial consequences. The group leaders and moderator will discuss ways and methods to improve the physical protection systems. Concluding the exercise, the moderator will provide the general solution and methods to apply this exercise in a realistic situation.

AREVA/CANBERRA Global Fuel Cycle

Thursday, April 9th, 11:00a - 2:00p

MSC Gates Ballroom (MSC 2400)

Facilitated by: Lane Carasik, NEUP Fellow, PhD Candidate, Texas A&M University

The Global Fuel Cycle Workshop is a dynamic learning activity developed by the NA-YGN DC chapter to help participants better understand the fuel cycle and potential proliferation concerns from a global perspective. In this interactive workshop, teams representing various countries shall develop solutions for addressing the fuel cycle needs of the country they represent, as well as those from other developing countries.

Participants will be introduced to fuel cycle and proliferation concepts. Through the activity, students will understand the conditions of international safeguards and the benefits of supporting international safeguards agreements. Participants will also learn why developing countries want nuclear power and enrichment and the challenges facing them.

Computational Fluid Dynamics

Thursday April 9th, 11:00a - 1:30p

MSC 2405

Facilitated by: Dr. William Pointer, Computational Fluid Dynamics Engineer and Technical Lead, NEAMS Reactor Product Line, Oak Ridge National Laboratory

Computational Fluid Dynamics (CFD) is a type of numerical fluid dynamics analysis used to predict gas and liquid flow in high detail. CFD experts will present the basic theory, analysis process, codes, and applications in nuclear engineering. The attendees will learn tips, tricks, and best practices for using CFD codes.

K-12 Initiative And Scouts Merit Badge

Thursday, April 9th, 2:00p - 4:00p

MSC 2405

Facilitated by: Jay Haines, Recruiting Manager, Nuclear Power Institute, Texas A&M University

The Nuclear Power Institute (NPI) and the Texas A&M Student Sections of the American Nuclear Society, Health Physics Society, and Women in Nuclear will conduct a workshop to help student sections develop and improve their K-12 outreach. NPI will present programs that provide the tools, academic support and mentoring for high school and middle school students to encourage interest STEM fields. The Student Sections will share their experience with a variety of outreach programs. ANS will present approaches on how to conduct Nuclear Science Merit Badge programs for Boy and Girl Scouts, HPS will show off a new hands -on demonstration for engaging students , and WIN will share their experience with National Nuclear Science Events.

RELAP5

Thursday, April 9th, 2:00p - 4:30p

MSC 2500

Facilitated by: Dr. Rodolfo Vaghetto, TEES Assistant Research Engineer, Texas A&M University

RELAP5 is a systems code developed at Idaho National Laboratory to analyze the behavior of the core and reactor coolant system for various transients and accidents. RELAP5 experts will present an overview of the code, examples of specific simulations, and basic instruction on how to utilize the code. Attendees will have a chance to learn tips, tricks, and best practices for using RELAP5.

Disaster City - Radiological Disaster and Response

Thursday, April 9th, 2:00p - 4:30p (4 Sessions)

Facilitated by: Dr. Craig Marianno, Visiting Assistant Professor and Research Engineer, Nuclear Science Security and Policy Institute (NSSPI), Texas A&M University

Disaster City is a regional urban search and rescue training ground, located in College Station, TX. The entire facility is composed of structural disaster scenarios such as train wrecks, earthquakes ridden structures, and rubble. It is commonly used to train first responders, search and rescue dogs, and firefighters. In this workshop, teams of students will respond to a nuclear disaster in the Disaster City.

During the emergency response training, sealed sources will be hidden in wreckage that imitate residential and industrial settings. Students will be instructed on field measurements of contamination levels and identify the sources that are detected. After the training is completed, the students will compete to find, identify and quantify a hidden source.

Navy Recruiting Command Diversity in Nuclear Engineering

Friday, April 10th, 9:00a - 10:30a

MSC 2401

Moderator:

Sam Brinton, Clean Energy Fellow, Third Way

Panelists:

Rita Panel, Graduate Research Assistant, University of Pittsburgh

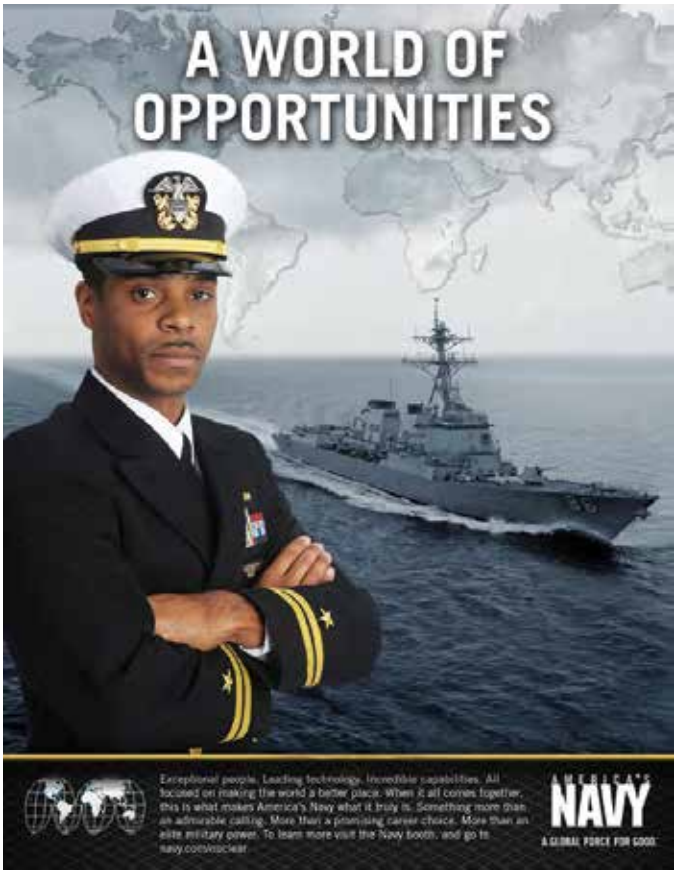
Lisa Marshall, Director of Outreach, Retention & Engagement, Instructor and Adviser, North Carolina State University

Dr. Janelle Wharry, Assistant Professor, Boise State University

Erin Wehlage, Senior Nuclear Engineer, Studsvik

Monika Goodrich, Director of Outreach, Interviews & Training, Naval Reactors

With the increasing globalization and growth of the nuclear science and engineering arena, the field is becoming progressively diverse in its membership. These new, diverse members have had a range of experiences during their careers and as students, and they continue to encounter issues that we would like to discuss head on, in an open setting. The panel will include members of the nuclear community from different racial and gender backgrounds and some that identify as LGBT. During this panel, we will begin a discussion in an effort to ensure that the nuclear community is a welcoming place for everyone—and we hope that those who attend and participate will continue that conversation with their peers and colleagues.



International Business Experiences

Friday, April 10th, 1:00p - 2:30p

MSC 2401

Moderator:

Robert Berry, President & Trustee, Roy G. Post Foundation and Health Physicist, Foxfire Scientific Inc.

Panelists:

Erin Wehlage, Senior Nuclear Engineer, Studsvik

William Lyon P.E., Senior Consultant, Anatech

Marc-Gerard Albert, Director for International Affairs, Institute for Radiation Protection and Nuclear Safety

Clayton Smith P.E. PMP, Technical Services Director and Fluor Fellow, Fluor Enterprises, Inc.

Fast growing energy markets in developing countries and collaboration between nuclear technology leader nations are driving the future of the nuclear industries. Now, more than ever, engineers encounter international opportunities over the course of their careers. To provide perspectives on how business is done differently in a global setting, panelists will share personal stories or anecdotes from their careers revolving around their experiences in the nuclear industry. Attendees will have a chance to interact with the panelists though a question and answer session following the presentations.

Young Member Group's Involvement in ANS National & Writing a Winning Student Conference Proposal

Friday, April 10th, 1:00p - 3:00p

MSC 2500

Moderator:

Catherine Perego, AP1000 Plant Integration Engineer, Westinghouse Electric Company

Panelists:

Paula Cappelletti, Director of Meetings & Exhibits, American Nuclear Society

Alexis Kaplan, Graduate Research Assistant, University of Michigan

Dr. Rachel Slaybaugh, Assistant Professor, University of California, Berkeley

Dr. Travis Trahan, Research and Development Scientist, Los Alamos National Laboratory

Brett Rampal, Nuclear Engineer, Nuscale Power, LLC

New student members of the society might find getting involved with ANS National a daunting task when faced with unfamiliar faces and the plethora of divisions and technical groups. To provide a platform for interested students, this panel will have current and past student members discuss their experiences and suggestions on how to get involved with the society. Afterwards, the panelists will share their experiences, expertise, and lessons learned for submitting an ANS National Student Conference proposal. This is meant for student sections who are interested but daunted by or unfamiliar with the bid process. This part of the panel consists of a short overview of the proposal writing process, lessons learned from previous organizers, and important aspects that winning proposals have in common. A question and answer session will follow allowing the audience to ask questions specific to their section, city, venue, etc. The overarching goal of the panel is to encourage more student sections to submit bids and to show that all sections, big and small, can host a successful and engaging student conference.

Idaho National Laboratory Current Topics in Space Nuclear Research

Saturday, April 10th, 9:00a - 11:00a

MSC Gates Ballroom (MSC 2400)

Moderator:

Wesley Deason, Research Scientist, Center for Space Nuclear Research

Panelists:

Vishal Patel, Graduate Research Assistant, Texas A&M University

Chris Morrison, Graduate Research Assistant, Rensselaer Polytechnic Institute

William Lyon P.E., Senior Consultant, Anatech

Kelsa Benensky, Graduate Research Assistant, University of Tennessee, Knoxville

Dr. Jeffery King, Associate Professor, Colorado School of Mines

The content of the panel will revolve around the experience of the current prime actors in the space nuclear research field. Specifically the discussion will focus on space reactor and radioisotope power generator design, fuel production, and applications. Additionally, dialogue of advanced topics and applications will be encouraged from the student audience. The panel will also presenting information pertaining to student involvement opportunities in the space nuclear community. Idaho National Laboratory and Center for Space Nuclear Research have many opportunities available for students to get involved and desire to share these with all in attendance.

Nuclear Engineering Graduate Schools Informational

Saturday, April 10th, 9:00a - 11:00a

MSC 2401

Moderator:

Robb Jenson, Graduate Program Coordinator, Texas A&M University

Panelists:

Lisa Marshall, Director of Outreach, Retention & Engagement, Instructor and Adviser, North Carolina State University

Dr. Janelle Wharry, Assistant Professor, Boise State University

Robert Berry, President & Trustee, Roy G. Post Foundation and Health Physicist, Foxfire Scientific Inc.

For many students in nuclear engineering, graduate school is a stepping stone in the path to their lifelong career in one of the nuclear industries. To ensure potential students have the relevant information needed and their questions answered, this informational has been developed to present both broad and specific information on a range graduate schools. Some panelists will provide information about the application process specific to nuclear engineering and different paths to finding funding for graduate degrees in engineering. Others will discuss how the transition from undergraduate to graduate school may occur and the expectations of graduate students as both students and researchers.

Navy Recruiting Command Regulatory Affairs

Saturday, April 10th, 1:00p - 3:00p

MSC Gates Ballroom (MSC 2400)

Moderator:

Clayton Smith PE PMP, Technical Services Director and Fluor Fellow, Fluor Enterprises, Inc.

Panelists:

Ryan Lantz, Deputy Director, Division of Reactor Projects, US NRC Region IV

Thomas Weishar, Director of Environmental Safety and Health, Naval Reactor

Dr. John Kelly, Deputy Assistant Secretary for Nuclear Reactor Technologies, U.S. Department of Energy

Marc-Gerard Albert, Director for International Affairs, Institute for Radiation Protection and Nuclear Safety

Steve Ward, Senior Licensing Engineer, Fermi 2 NPP, DTE Energy

The purpose of the regulatory affairs panel is to expose students to the role of regulation in the nuclear industry. Regulation of the nuclear industry is a subject they typically have little or no exposure to in their undergraduate career, but one that plays a role of vital importance in determining the construction, safety, and continued existence of nuclear utilities domestically and abroad. The goal of this panel is to bring together a diverse group in order to see regulation from multiple perspectives, the utility, the government, the regulator, and others.

Please use your time during lunch to visit with various companies and laboratories! Just grab a box lunch and take it to the room listed for each session. Lunch will take place from 11:00a - 1:00p each day and most companies will have a couple of sessions during lunch.

Featured Session

American Society of Mechanical Engineers Nuclear Engineering Division

MSC Bethancourt Ballroom 2300D

The ASME Nuclear Engineering Division (NED) focuses on the design, analysis, development, testing, operation and maintenance of reactor systems and components, nuclear fusion, heat transport, nuclear fuels technology and radioactive waste.

Dr. Yassin Hassan and Clayton Smith, PE PMP will present "ASME and Your Future in Engineering" where students will learn how ASME can enrich their professional career in nuclear engineering and beyond.

ASME NED is proud to sponsor the Friday Featured Lunch and Learn!

Come find out what ASME can do for your future!

ASME

SETTING THE STANDARD

Visit ASME NED online:
https://community.asme.org/nuclear_engineering_division/b/weblog/default.aspx

Additional Sessions

Entergy

MSC 1402

ANS PEEC Professional Engineering Exam and Licensure Information

MSC 1401

Featured Session

Bechtel Marine Propulsion Corporation (Bettis and KAPL Labs)

MSC Bethancourt Ballroom 2300D

Bechtel Marine Propulsion Corporation (BMPC) is responsible for developing advanced naval nuclear propulsion technology, providing technical support to ensure the safety and reliability of our nation's naval nuclear reactors and training the sailors who operate those reactors in the Navy's submarine and aircraft carrier fleets. BMPC includes both the Bettis and Knolls Atomic Power Laboratories. BMPC has 6200 employees at main locations that include Pittsburgh, Pennsylvania, Schenectady, New York, West Milton, New York, Charleston, South Carolina, Idaho Falls, Idaho and more and numerous shipyard and vendor sites around the globe. BMPC operates the Bettis and Knolls Atomic Power Laboratories for the Department of Energy. BMPC is dedicated solely to the support of the United States Naval Nuclear Propulsion Program.

BMPC is proud to sponsor the Saturday Featured Lunch and Learn!
Come find what opportunities await in nuclear propulsion!

KAPL Knolls Atomic Power Laboratory

BECHTEL

BETTIS LABORATORY

Find out about career opportunities at BMPC!
Visit:
https://bmpc.mua.hrdepartment.com/hr-department/ats/JobSearch/index

Additional Sessions

Advanced Test Reactor National Scientific User Facility at Idaho National Laboratory

MSC 1402

Sandia National Laboratory

MSC 1401

Opening Reception and BBQ Dinner

Thursday, April 9th, 6:00p - 8:30p
MSC Bethancourt Family Grand Ballroom (MSC 2300)

Speaker: Ambassador Zef Mazi

Ambassador Zef Mazi is a career diplomat and the currently the Special Assistant to the Director General for Strategy at the International Atomic Energy Agency (IAEA). Previous to this position, he served as the Ambassador of the Republic of Albania to the United Kingdom and the Republic of Ireland. Prior to being assigned to London in September 2007, he served as Ambassador, Permanent Representative of Albania to the OSCE, UN and other international organizations in Vienna. In 2004 he was nominated candidate for Secretary General of the The Organization for Security and Co-operation in Europe (OSCE). From 2000 to 2002, Mr. Mazi served in the Department of Technical Co-operation of the International Atomic Energy Agency (IAEA), and in June 2002, he was a Presidential candidate in Albania's Presidential elections. From 1998 to 2000, he served as Adviser in the Conflict Prevention Centre of the Department of Administration and Operations at the Secretariat of the Organization for Security and Co-operation in Europe (OSCE). In 1997 he was Director of the UN Department in his country's Ministry of Foreign Affairs. Mr. Mazi was Minister Counsellor/Chargé d'Affaires as well as Ambassador and Permanent Representative to the United Nations, the IAEA, the OSCE and other International Organizations in Vienna, from 1991 to 1997 and from 1991 to 1992 he served as Minister Counsellor and Chargé d'Affaires in his country's Embassy in Austria and Switzerland. From 1989 to 1991, he worked in the Department of Multilateral Relations at the Ministry of Foreign Affairs of Albania. From 1987 to 1989 he was Head of the International Relations Department of the General Directorate of PTT. From 1978 to 1986 he was translator and editor at the "8 Nentori" Publishing House. He also served as lecturer at the University of Tirana (1979-1988), as announcer and translator at Radio Tirana World Service (1975-1985) and principal English interpreter in his country (1980-1990). Born on 27 January 1956 Mr. Mazi graduated from the University of Tirana in English language and literature (major field) and international relations and law. He received the "Grand Officier, Byzantine Order of the Knights of the Holy Grave". He has published a number of books, translations, articles and political analyses on international relations.

Northgate Social

Thursday, April 9th, 9:30p - 11:00p
Rebel Draft House

Tex-Mex Dinner

Friday, April 10th, 6:00p - 8:00p
MSC Bethancourt Family Grand Ballroom (MSC 2300)

Speaker: Dr. Yassin Hassan

Dr. Yassin Hassan is Head of the Department of Nuclear Engineering, Sallie and Don Davis '61 Professor of Engineering and Professor of the Department of Mechanical Engineering at Texas A&M University. Prior to joining Texas A&M in September 1986, he worked for seven years at Nuclear Power Division, Babcock & Wilcox Company, Lynchburg, Virginia. His research is in computational and experimental thermal hydraulics, reactor safety, laser-based flow visualization and diagnostic imaging techniques, system modeling, multiphase flow, transient and accident analyses and advanced nuclear reactors. He received his master's and Ph.D. degrees from the University of Illinois at Urbana-Champaign in nuclear engineering. He also has a master's degree in mechanical engineering from the University of Virginia.

Dr. Hassan's professional recognitions include selection as a fellow of the American Association for the Advancement of Science (AAAS), the American Nuclear Society (ANS), and the American Society of Mechanical Engineers (ASME). He was awarded the 2008 ANS Seaborg Medal for outstanding research contributions, the 2003 George Westinghouse Gold Medal for achievements in power field of mechanical engineering, the 2004 Thermal Hydraulics Technical Achievement Award by the Thermal Hydraulic Division of the ANS, the 2003 ANS Arthur Holly Compton Award for contributions to nuclear engineering education and research, and the 2001 Glenn Murphy Award of the American Association for Engineering Education.

He is the editor-in-chief of Nuclear Engineering and Design, the premier technical journal of the nuclear engineering field. Dr. Hassan was sworn in as a part-time technical judge to the Atomic Safety and Licensing Board Panel of the U.S. Nuclear Regulatory Commission.

Oak Ridge National Laboratory Social

Friday, April 10th, 9:00p - 10:30p
Upper Floor, The Backyard

OAK RIDGE National Laboratory
ornl.gov

CASL
Consortium for Advanced Simulation of LWRs
casl.gov

Awards Ceremony and International Banquet

Saturday, April 11th, 6:00p - 10:00p

MSC Bethancourt Family Grand Ballroom (MSC 2300)

Speaker: Dr. Michaele (Mikey) Brady Raap

American Nuclear Society President, 2014-2015

Dr. Michaele (Mikey) Brady Raap has been an active member of the American Nuclear Society (ANS) since joining in 1985. She has held many leadership positions, including the chairmanship of both the Reactor Physics and Nuclear Criticality Safety Divisions.

Dr. Brady Raap is a chief engineer with the Nuclear Systems Design, Engineering & Analysis Group within the National Security Directorate at the Pacific Northwest National Laboratory (PNNL) in Richland, Washington. She has more than 25 years of experience in nuclear and criticality safety for plutonium processing and spent fuel systems, including the design and review of benchmark experiments, safety assessments at operating facilities and integrating safety-in-design.

Prior to joining PNNL in 1999, she was with Duke Engineering Services Incorporated, Oak Ridge National Laboratory, and Sandia National Laboratories. She performed her dissertation research at Los Alamos National Laboratory, and received her BS, MS and PhD in Nuclear Engineering from Texas A&M University.

Dr. Brady Raap is the recipient of ANS' Special Recognition Award for Media for her service during the Fukushima Accident, 2011. She resides in Benton City, WA.

INMM/WiN/HPS Social

Saturday, April 11th, 10:30p - 12:00a

Upper Floors, Corner Bar

The 2015 Conference Commitee would also like to thank the following sponsors:

Contributors

ANS Accelerator Applications Division

ANSAerospace Nuclear Science & Technology Division

ANS Nuclear Criticality Safety Division

ANS Radiation Protection and Shielding Division

Nuclear Energy University Programs

TerraPower

Nuclear Power Institute

Studsvik

Benefactors

ANS Biology & Medicine Division

ANS Decommissioning & Environmental Sciences Division

ANS Isotopes & Radiation Division

Additionally, the 2015 Conference would not have been possible without the guidance and support of the following individuals:

Texas A&M University:

Dr. Yassin A. Hassan, Department Head

Dr. Kenneth L. Peddicord, NPI Director

Cody Orsak, ANS Chapter President

Taylor Haby, ANS Chapter Past-President

Kristy Yancey Spencer

Kristina Ballard

Cathy Perego, Matt Wargon & Karen Bobkowski, Penn State Conference Chairs

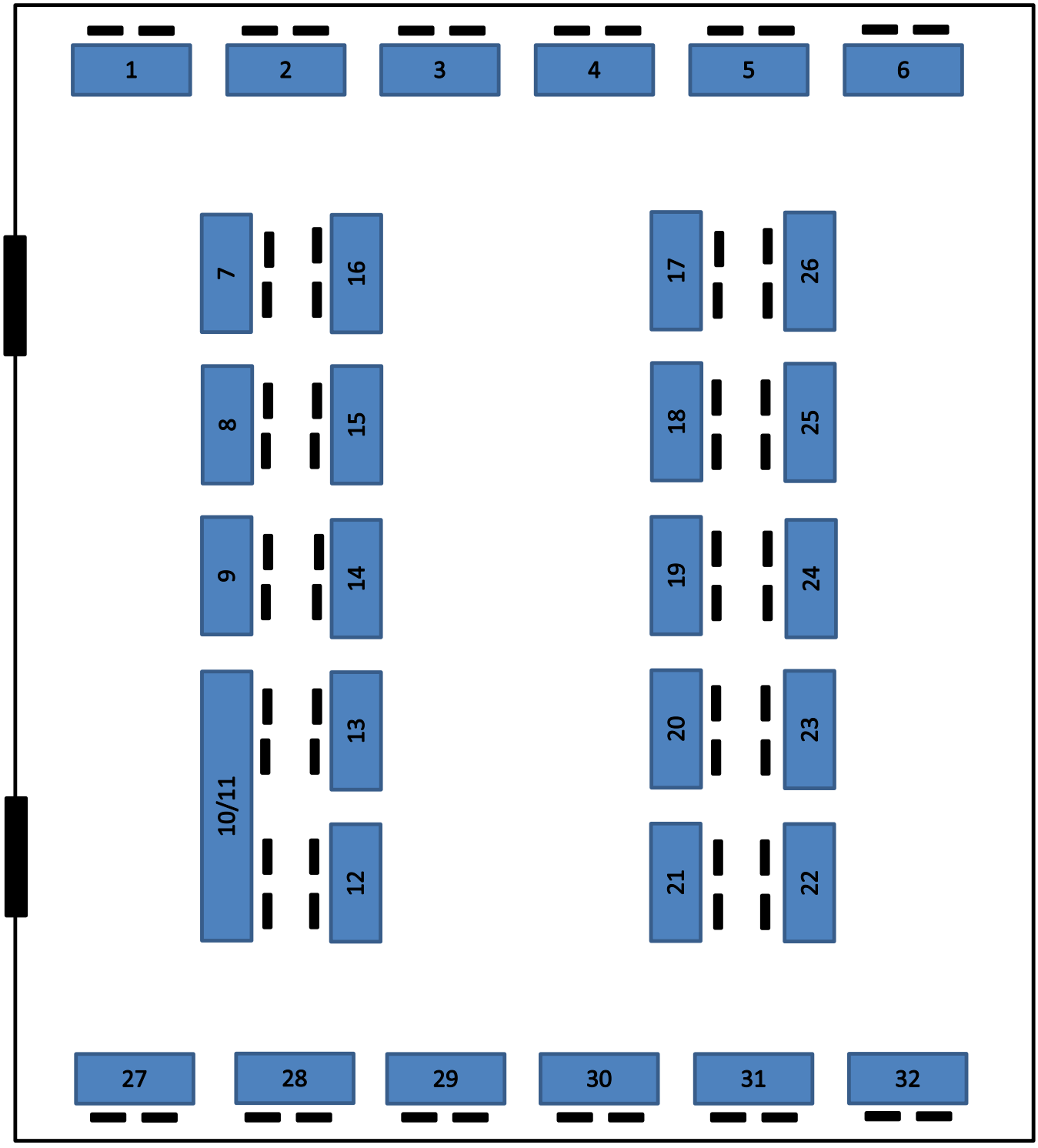
2015 Career Fair

Friday, April 10th, 12:00p - 5:00p
Saturday, April 11th, 9:00a - 4:00p
MSC 2406

Please bring your resumé and visit with various companies and universities! Miss out on a chance to talk during the day or just want to find out more? Arrive early and grab a seat at that sponsor's table at each dinner!

Booth #	
1	AREVA
2	CANBERRA
3	Argonne National Laboratory
4	Idaho National Laboratories
5	Idaho National Laboratories, Advanced Test Reactor National Scientific User Facility
6	Nuclear Energy University Programs, Department of Energy International Atomic Energy Agency & Brookhaven National Laboratory
7	Entergy
8	Los Alamos National Laboratory
9	Dominion Resources
10	Navy Recruiting Command
11	
12	American Society of Mechanical Engineers, Nuclear Engineering Division
13	Oak Ridge National Laboratory
14	Sandia National Laboratories
15	Studsvik Scandpower
16	TerraPower
17	University of California, Berkeley Nuclear Science Security Consortium
18	American Nuclear Society Professional Engineering Exam Committee
19	American Nuclear Society National Booth
20	Westinghouse Electric Company
21	Nuclear Power Institute
22	Texas A&M University Department of Nuclear Engineering
23	North Carolina State University
24	Idaho State University
25	University of New Mexico
26	École Polytechnique Fédérale de Lausanne

27 Bechtel Marine Propulsion Corporation (Knolls Atomic Power Laboratory, Bettis Atomic Power Laboratory)
28 South Texas Project Nuclear Operating Company
29 Southern Nuclear Company
30 EXCEL Services Corporation
31 Virginia Polytechnic Institute and State University



Dominion Resources Poster Session

Saturday, April 11th, 1:00p - 4:00p
Outside MSC Bethancourt Ballroom (MSC 2300)

1. Westinghouse Risk Management Internship Experience
Robert Pinkston, Texas A&M University

2. The Advantages of the Commercialization of Liquid Fluoride Thorium Reactors
Lukas Porczynski, Pennsylvania State University

3. Suppression Pool Design Improvements for Extended Operation of the Reactor Core Isolation Cooling System
Robert Pinkston, Texas A&M University

4. Thermal Modeling of Salt Repository for Nuclear Waste
Gregory Borza, Pennsylvania State University

5. Passive Decay Heat Removal System
Mario Chaita, University of New Mexico

6. Computational Studies of Gadolinium (III)-Based Ligands Used in Diagnostic Medical Imaging
Mahesh Basyal, University of Houston, Downtown

7. Theoretical Study of Biodegradable Disulfide Manganese (II) Complexes As Potential MRI Contrast Agents
Lisa Martinez, University of Houston, Downtown

8. Irradiation Embrittlement in Reactor Pressure Vessels
Lisa Fudurich, Pennsylvania State University

9. Graphite Oxidation Rates in Comparison to Regimes with Application to the Oregon State University High Temperature Test Facility
Jordan Cox, Oregon State University

10. Diode Optimization for Direct Reactor Auxiliary Cooling System Heat Exchangers
Bobbi Merryman, University of New Mexico

11. Increased Adhesion of Titania Nanotube Arrays via Soaking in Previously Used Electrolyte.
Christopher Campbell, Georgia Institute of Technology

12. Miniature Motorized Inspection Tool For Department of Energy Hanford Site Tank Bottoms
Ryan Sheffield, Florida International University

13. Initial Studies of Ultrasonic Enhancement of Sparging Mass Transfer
Cole Mueller, University of New Mexico

14. FX2 Fogging Advanced Technology
Janesler Gonzalez, Florida International University

15. Direct Numerical Simulation Of Turbulent Multiphase Bingham Plastic Undergoing Pulse Jet Mixing
Maximiliano Edrei, Florida International University

16. Design and Construction of a 252Cf Neutron Howitzer
Blake Anderson, Arizona State University

17. Biological Effects of Radiation Exposure on the Human Body
William Joseph Elko, Pennsylvania State University

18. Breazeale Nuclear Reactor
Alaina Bott , Pennsylvania State University

19. Strontium 90 Radioisotopic Thermoelectric Generator
Saleh Al-Kaf, Idaho State University

20. Estimating Dose Rates and Photon Energy Spectra in Sandia's Low Intensity Cobalt Array
Nathan Hart, University of New Mexico

21. Virtual Education and Research Laboratory at NPRE at Illinois
Justin Joseph, University of Illinois, Urbana Champaign

22. Determining the Angular Flux Through a Surface In MCNP6
Dimitrios Michaelides, Texas A&M University

23. ATPWR-XL Design
Phoenix Baldez, University of New Mexico

24. Design Study of a UN and UC Fueled Small, Long-Lived Sodium Fast Reactor (SLSFR)
Emory G. Brown, University of New Mexico

25. University of Florida American Nuclear Society Best Practices
Patrick Moo, University of Florida

26. Design of a Small Modular Boiling Water Reactor with Natural Circulation
Paul Gilbreath, University of New Mexico

27. Computational Study of Whole-Body X-Ray Imaging System
Brittany Morgan, University of Nevada, Las Vegas

28. Positron Emitting Particle Tracking
Daniel Tenpenny, University of Tennessee, Knoxville

29. Failure Propagation Across Unconnected Systems in Nuclear Power Plants
Caitlin Stack, Colorado School of Mines

30. Modeling and Analysis of the ACRRF Transient Rod Pneumatic System
Brandon Fehr, Georgia Institute of Technology

31. Separation of Nuclear Waste by Plasma (SNuWP)
Jessica Pachicano, University of Illinois, Urbana Champaign

32. Techno Economic Analysis of Small Modular Reactors
Landon Hillyard, Utah State University

33. Nanodosimetry of 125-I & 117m-Sn Nanoparticles: A Computational Model Using Geant4-DNA
Marina Pulley, Texas A&M University

34. Modeling of Thermo-Mechanical Behaviors of Metallic U-Zr Fuels in Sodium-cooled Fast Reactors
Hyocheol Lee, Texas A&M University

35. A Student's Impression of Fukushima through Participation of the 4th International Symposium and Seminar on Global Nuclear Human Resource Development for Safety, Security and Safeguards
Matthew Garza, Texas A&M University

36. Xenon Exploding Pusher MCNP Simulation
Christopher Brand, University of California, Berkeley

Technical Sessions I

Friday, April 10th, 9:00a-11:00a

Argonne National Laboratory Track

Reactor Physics I

MSC 2500

9:00a
Multiphysics Simulation of TREAT Core for Experiment Validation
Anthony Alberti, Oregon State University

9:20a
Interactive Visualization of Nuclear Reactor Geometries in OpenCG
Logan Abel, Massachusetts Institute of Technology

9:40a
Impact of Neutron Resonance Elastic Scattering Energy Intervals on Nuclear Reactor Reactivity Calculations
Vivian Tran, Massachusetts Institute of Technology

10:00a
Gas Cooled Fast Reactor Design Concept For Application In A Nuclear Powered Locomotive
Russell Benson, Colorado School of Mines

10:20a
Ray Tracing Methodology for OpenCG
Davis Tran, Massachusetts Institute of Technology

10:40a
Validation of Cross Section Generation Capabilities in MPACT
Kevin Xu, University of Michigan

Technical Sessions I

Friday, April 10th, 9:00a-11:00a

Argonne National Laboratory Track
Thermal Hydraulics and Fluids I
MSC 2501

9:00a
Characterization of Nusselt Number in Heated Flow Through an Annulus
Matthew Zimmer, Rensselaer Polytechnic Institute

9:20a
Direct Numerical Simulation of Turbulent Flow in the Near Wall Region of a Pebble Bed
Lambert Fick, Texas A&M University

9:40a
CFD Benchmark Study for Modeling of Hydrogen Distribution in the Containment
Fatih Sarikurt, Texas A&M University

10:00a
Wire-Wrapped Fuel Rod Mesh Sensitivity Study
Landon Brockmeyer, Texas A&M University

10:20a
Development of a CFD Model for Pressure Drop Estimation of Molten Salts in a Crossflow Tube Bundle
Lane "Swagmaster" Carasik, Texas A&M University

10:40a
Positron Emitting Particle Tracking (PEPT) for Fluid Flow Measurements
Seth Langford, University of Tennessee, Knoxville

Math and Computation I
MSC 2502

9:00a
Collision Detection of Static Solids
Ahmed Shamma, United States Naval Academy

9:20a
Developing an Effective Test Suite for OpenMOC
Luisa Kenausis, Massachusetts Institute of Technology

9:40a
Assessment of Reactivity Effects for Different Doppler Broadening Treatments in OpenMC
Amelia Trainer, Massachusetts Institute of Technology

10:00a
A Study of the Frequency Spectrum of Thermal Excitations for On-the-Fly Monte Carlo Thermal Scattering Sampling
Andrew Pavlou, Rensselaer Polytechnic Institute

10:20a
A Master Equation Formulation of the Joint Neutron-Photon Probability Distribution in a Multiplying System
Patrick O'Rourke, University of New Mexico

10:40a
Enhancing Functional Failure Modeling with the Designated Failure Flow Arrestor Function Methodology
Michael Slater, Colorado School of Mines

Technical Sessions I

Friday, April 10th, 9:00a-11:00a

Southern Nuclear Track

Material Science and Technology I

MSC 2503

9:00a

Property Analysis and Advanced Manufacturing Technique Development for Light Water Reactor Annular Composite Fuel

Juliusz. Kruszelnicki, University of Florida

9:20a

Modeling and Experimental Study of PWR Corrosion with the HOGNOSE Code

Andrew Dykhuis, Massachusetts Institute of Technology

9:40a

Automated Characterization of Uranium-Molybdenum Fuel Microstructures

Ryan Collette, Colorado School of Mines

10:00a

Naval Propulsor Material Selection: Characterization of HG10MNN and an Evaluation of Suitability for Use on Nuclear Powered Vessels

Kevin Hawxhurst, United States Naval Academy

10:20a

Diffusion Bonding of 316 SS Tube-to-Tube Sheet Joints for Coiled Tube Gas Heaters

Nils Haneklaus, University of California, Berkeley

EntergyTrack

Fuel Cycle and Waste Management I

MSC 2504

9:00a

Nuclear Fuel Cycle Transition Analysis using CYCLUS

Russell Nibbelink, University of California, Berkeley

9:20a

Preliminary Design, Site Evaluation, and Considerations for an Interim Storage Facility for Used Nuclear Fuel

Cody "Mr. President" Orsak, Texas A&M University

9:40a

Fuel Cycle Transition Analysis Under Uncertainty

Urairisa Phathanapirom, University of Texas, Austin

10:00a

Plutonium-Thorium Hydride Pressurized Water Reactor Fuel Design

Raffi Yessayan, North Carolina State University

10:20a

Potential Benefits of Energy Storage Coupled With Nuclear Power Plants Using ERCOT Grid

Rachel A Morneau, University of Texas. Austin

10:40a

Compilation and Cost Analysis of Uranium Extraction from Seawater Studies

Stuart Jennings, Virginia Commonwealth University

Technical Sessions II

Friday, April 10th, 1:00p-3:00p

Argonne National Laboratory Track
Thermal Hydraulics and Fluids II
MSC 2501

1:00p
Nucleate Pool Boiling Enhancement From An Alumina Nanofluid On A Stainless Steel Substrate
Rita Patel, University of Pittsburgh

1:20p
Investigation of the Dissipation Length of 90-Degree Vertical Elbows in Two-Phase Fluid Flow
George Coats, Pennsylvania State University

1:40p
Thermodynamic and Mechanical Performance of Printed Circuit Heat Exchangers
Ian Jentz, University of Illinois, Urbana-Champaign

2:00p
Studying The Effects Of Slug Flow Within Circular Micro-Channels
Marilyn Delgado, City College of New York

2:20p
Scaled Integral Effects Tests for Fluoride-Salt-Cooled, High-Temperature Reactor Development
James Kendrick, University of California, Berkeley

2:40p
Experimental study toward resolution of GSI-191 during Loss of Coolant Accident Conditions
Jamie Gerard, University of New Mexico

Fusion Energy and Technologies
MSC 2502

1:00p
Twin Atmospheric Plasma for Deposition through Evaporation of Clear Conductors (TAPDECC)
Ian Haehnlein, University of Illinois, Urbana-Champaign

1:20p
Assessment of Plasma Wall Interaction in the Madison Symmetric Torus
Ryan Norval, University of Illinois, Urbana-Champaign

1:40p
Using Capillary Discharge Plasma Sources to Study Ablation of Tungsten-Alternative Plasma-Facing Components due to Edge Localized Modes (ELMs) and Hard Disruptions
Jonathan Coburn, North Carolina State University

2:00p
Helium and Simultaneous D-He Ion Damage in Tungsten Studies at the University of Wisconsin IEC Fusion Lab
Matthew Jasica, University of Wisconsin, Madison

Technical Sessions II

Friday, April 10th, 1:00p-3:00p

Detection and Measurement I
MSC 2503

1:00p
Development of Shipboard Decontamination Procedures for a Small Radiological Contamination Event
Jacob Glesmann, United States Naval Academy

1:20p
Development of a Novel Method for Fissile Material Holdup Modeling
Gregory Peacock, Georgia Institute of Technology

1:40p
A Characterization of the Ship-Effect in a Maritime Environment and Special Nuclear Material Detection
Fletcher Rydalch, United States Naval Academy

2:00p
Open Loop Reactivity Measurement
Harishchandra Arya, Idaho State University

2:20p
Passive Radiation Monitoring System (PARMOS)
Michael Chang, University of Illinois, Urbana-Champaign

2:40p
Piped Uranyl Fluoride Detection System
Christopher O. McGahee, Georgia Institute of Technology

Nonproliferation and Nuclear Safeguards
MSC 2504

1:00p
Nuclear Forensic Applications of Postdetonation Gamma Spectra Analysis
Michael Moore, Pennsylvania State University

1:20p
An Overview of the Differential Die-Away Instrument Fresh PWR Fuel Experiments and Comparison to MCNPX Simulations for Nuclear Safeguards Applications
Alison Goodsell, Texas A&M University

1:40p
Development of the Hybrid K-Edge Densitometer for Pyroprocessing Safeguards
George Mickum, Georgia Institute of Technology

2:00p
Design of a High Efficiency Single Volume Neutron Scatter Camera (SVNSC)
Bradli Crump, North Carolina State University

2:20p
Sensitivity Analysis of Modeled Pu and Cs Isotope Ratios in a Test Pressurized Water Reactor
Andrew Conant, Georgia Institute of Technology

2:40p
Coupling a Gas Chromatography unit to an Inductively Coupled Plasma Mass Spectrometer
Jerrad Auxier, University of Tennessee, Knoxville

Technical Sessions III

Friday, April 10th, 3:20p-5:00p

Accelerator Applications
MSC 2500

3:20p
Production of Technetium-99m via Cyclotron and Pool Reactor Methods
Joshua Chen, North Carolina State University

3:40p
Producing X-rays with a Crystal and Laser Pointer (300mW)
Nathan Langlitz, Rensselaer Polytechnic Institute

4:00p
Production of ^{99m}Tc from Accelerator Generated ^{99}Mo Using a Photon-Neutron Interaction with ^{100}Mo Targets
Matthew Schaper, Texas A&M University

Southern Nuclear Track
Operations and Power I
MSC 2501

3:20p
Designing a Small Modular Reactor for Military Sustainment
Cristian Espinosa, United States Military Academy

3:40p
Nuclear Air Combined Cycle (NACC) Power Ramp Rate
Charalampos Andreades, University of California, Berkeley

4:00p
Potential Revenue Increase for Nuclear Power Plants Using Thermal Energy Storage
William Kendrick, University of Texas, Austin

4:20p
Design of a Safe, Secure, and Sustainable Submerged Nuclear Power Plant (SNPP)
James Andrews, North Carolina State University

4:40p
Optimization, steam generator analysis and flux trap analysis of a LBE cooled SMR for the production of electricity and ^{99}Mo
Jonathan Scherr, Texas A&M University

Technical Sessions III

Friday, April 10th, 3:20p-5:00p

Southern Nuclear Track

Radiation Shielding and Protection

MSC 2502

3:20p
Neutron Reduction Factor Calculation for a Two Foot Steel Box
Paul Kim, United States Military Academy

3:40p
An Initial Radiation Baseline Study of Urban Environments in UAE
Abdulla Al-Ali, Khalifa University of Science, Technologies and Research

Biology and Medicine

MSC 2502

4:00p
An Exploration of the Human Plutonium Injection Experiments and their Significance in Health Physics
Mara Levy, Pennsylvania State University

4:20p
Radiation-Enhanced Expression of Invasive Genes at Various Doses of Irradiation
Ryan Clanton, Texas A&M University

4:40p
Microbial Influences on Oncogenesis and Hormesis
David Saucier, Texas A&M University

Isotopes and Radiation

MSC 2503

3:20p
Improved Approach for Predictive Dose Modeling in Contaminated Casualties
Alexander Burruss, United States Military Academy

3:40p
Irradiation of Sewage Sludge using Spent Nuclear Fuel
Joseph Bottini, University of Illinois, Urbana-Champaign

4:00p
Beamline Improvements to the MInes NEutron Radiography (MINER) Facility
Clinton Wilson, Colorado School of Mines

Technical Sessions III

Friday, April 10th, 3:20p-5:00p

EntergyTrack
Fuel Cycle and Waste Management II
MSC 2504

3:20p
Economic Evaluation of Accident Tolerant Fuel System Implementation in the US Reactor Fleet
Victoria Ollo, United States Military Academy

3:40p
Securing the Future of Nuclear Energy through Seawater Uranium Recovery
Jose Parga, University of Texas, Austin

4:00p
Sensitivity of Seawater Uranium Cost to System and Design Parameters
Margaret Flicker, University of Texas, Austin

4:20p
K-effective and Burnup Analysis of Alternative Accident-Tolerant Fuel Cladding Designs in a Pressurized Water Reactor Assembly Modeled in MCNP 6.1
Victoria Ollo, United States Military Academy

4:40p
Enhancement and Validation of BWR MCNP Activation Simulations for Swiss Decommissioning Planning
Valentyn Bykov, Paul Scherrer Institute

Technical Sessions IV

Saturday, April 11th, 9:00a-11:00a

Detection and Measurement II

MSC 2500

9:00a
Trace SNM Assay Using Short-Lived Fission Product Measurements
Justin Knowles, University of Tennessee, Knoxville

9:20a
Optical Emission Spectroscopy Diagnostics of Cold Atmospheric Pressure Plasma Used for Food Treatment
Sara Sanders, Purdue University

9:40a
Preliminary Signal to Noise Calculations for X-ray Backscatter Radiography of Spent Fuel Canister Welds
Lucas Rolison, University of Florida

10:00a
Template Fitting Technique for Double Pulse Cleaning of Organic Scintillator Pulses
Emily King, University of Michigan

10:20a
Laser-Induced Breakdown Spectroscopy Application to Nuclear Forensics: An Examination of Thin Neptunium Layers
Ann Hopkins, Pennsylvania State University

Southern Nuclear Track
Operations and Power II

MSC 2501

9:00a
MOX Annular Fuel Pellet Design
Benjamin Austin, North Carolina State University

9:20a
Project CASTLE: Code-based Analytic Simulation of a Theorized LOCA-induced Environment
Aaron Mowry, Texas A&M University

9:40a
Control Blade Insertion Dynamics in Liquid Salt Cooled Pebble Bed Reactors
Grant Buster, University of California, Berkeley

10:00a
Peak Cladding Temperature Prediction and Assessment for the Leibstadt NPP Using SIMULATE-3K
Dionysios Chionis, Paul Scherrer Institute

10:20a
Effects of Manual Operation during a Loss-of-Coolant Accident with Pump Unavailability
Timothy "#WRTC" Crook, Texas A&M University

Technical Sessions IV

Saturday, April 11th, 9:00a-11:00a

Math and Computation II

MSC 2502

9:00a
Proof of Concept of the Use of RAVEN and RELAP5-3D for Risk Informed Safety Margin Characterization
Thomas Riley, Oregon State University

9:20a
Comparison of Multiphysics Boundary Value Problem Coupling Strategies in MOOSE
Jaron Senecal, Rensselaer Polytechnic Institute

9:40a
Characterization of Thermal Conductivity using Deterministic Phonon Transport in Rattlesnake
Jackson Harter, Oregon State University

10:00a
PyNE: Usage for Automatic PARTISN Input File Generation from a CAD Geometry
Kalin Kiesling, University of Wisconsin, Madison

10:20a
Consequence Analysis Framework Based on the West Point Power Grid
Matthew Halley, United States Military Academy

10:40a
Reactivity Transients in Nuclear Pool-Boiling
Christopher Cameron, University of Pittsburgh

Southern Nuclear Track
Material Science and Technology II

MSC 2503

9:00a
Fabrication and characterization of magnetron sputtered zirconium dioxide thin films on steel substrates.
Sean Kerrigan, Virginia Polytechnic Institute and State University

9:20a
Titanium Nitride and Titanium Dioxide Film Deposition and Characterization as Coatings for Nuclear Waste Packages.
Kathryn Tuason, Virginia Polytechnic Institute and State University

9:40a
Chemical Preparation and Analysis of Molten FLiBe Salt for Fluoride-Salt-Cooled High-Temperature Reactors
Kieran Dolan, University of Wisconsin, Madison

10:00a
Aqueous Corrosion Behavior of U-10wt% Mo Alloys
Levi Gardner, Utah State University

Technical Sessions V

Saturday, April 11th, 1:00p-3:00p

Entergy Track

Human Factors, Instrumentation & Controls

MSC 2500

1:00p

Development and Demonstration of a Natural Circulation Flow Loop and Inferential Flow Characterization Methods

Gregory Meinweiser, University of Tennessee, Knoxville

1:20p

High Spatial Resolution Reactor Power Reconstruction from External Core Distributed Measurement

Charles Stratton, Texas A&M University

1:40p

Experimental Study of the Leak Rate Testing on Primary Water Stress Corrosion Cracking

Jeremy Black, Texas A&M University

2:00p

Pattern Recognition: An On-line Monitoring Technique for Sensor Health in Nuclear Power Plants

Charles Hansen, University of Pittsburgh

Argonne National Laboratory Track

Thermal Hydraulics and Fluids III

MSC 2501

1:00p

CTF Void Drift Validation

Marcus Gergar, Pennsylvania State University

1:20p

Interfacial Heat Transfer Enhancement during Molten Corium Concrete Interactions

Kyoungmin Kang, University of Wisconsin, Madison

1:40p

CTF Application To BWR Modeling And Simulations

Christopher Gosdin, Pennsylvania State University

2:00p

Study of heat transfer mechanism in Bypass Flow in VHTGR type plates model

Harishchandra Aryal, Idaho State University

2:20p

Verification of Subchannel Code COBRA-TF with OECD/NEA PSBT Benchmark

Valerie Fudurich, Pennsylvania State University

Technical Sessions V

Saturday, April 11th, 1:00p-3:00p

Entergy Track
Education, Training & Workforce Development
MSC 2502

1:00p
Nuclear Engineering at the United States Naval Academy
Anthony Kloszewsky, United States Naval Academy

1:20p
Closing the Loop: Leveraging Student Experiences to Affect Curricular Change
Todd McLaughlin, United States Military Academy

1:40p
Texas Nuclear Engineering Student Delegation: A Policy and Outreach Program
Lainy Dromgoole, Texas A&M University

2:00p
Reactor Plant Simulator-Based Course at the Pennsylvania State University
Jacob Krizmanich, Pennsylvania State University

2:20p
MCNP6 Modeling of Subcritical Assembly and Undergraduate Laboratory Design
Kevin Sanchez, United States Military Academy

Nuclear Criticality Safety
MSC 2503

1:00p
Uncertainty Quantification of the LWR Experiments at the PROTEUS Research Reactor Using Stochastic Sampling
Daniel Siefman, Paul Scherrer Institute

1:20p
Impact of Nuclear Data Improvements on Criticality Safety Guidelines
Dustin Popp, University of Florida

1:40p
Criticality Safety Evaluation of a High Density Uranium Fuel Pin Storage Solution
Daniels Maxwell, Idaho State University

2:00p
Analysis of Multigroup and Continuous-Energy Sensitivity Methods in SCALE 6.2 for MST Systems
Elizabeth Jones, University of Tennessee, Knoxville

Technical Sessions VI

Saturday, April 11th, 3:20p-5:00p

Entergy Track

Special Session: International Applications

MSC 2500

3:20p

Harbin Engineering University-Texas A&M University Summer School

Joe Kelsey, Texas A&M University

3:40p

Global Approaches to Long-Term Solutions for Used Nuclear Fuel and various High Level Waste: Lessons Learned and Future Strategies

Cody Orsak, Texas A&M University

4:00p

Addressing Challenges in Implementing Commercial Nuclear Power in Newcomer Countries

Hannah Hale, University of Tennessee, Knoxville

4:20p

International Training Opportunities in Nuclear Safety, Security, and Safeguards

Stephen Dahunsi, University of Tennessee, Knoxville

4:40p

University of Tennessee, Knoxville Nuclear Research Reactor Laboratory Abroad

Jessica Shewmaker, University of Tennessee, Knoxville

Aerospace Nuclear Science and Technology

MSC 2501

3:20p

Development of a Prototypic Tie-Tube for Low-Enriched Uranium Nuclear Thermal Propulsion

Kelsa Benensky, Pennsylvania State University

3:40p

Design Considerations for LEU Cermet Nuclear Thermal Rockets

Vishal Patel, Texas A&M University

4:00p

Alternative Fuel Sources for Radioisotope Thermoelectric Generators

Evan Gonzales, Texas A&M University

Technical Sessions VI

Saturday, April 11th, 3:20p-5:00p

Robotics and Remote Systems

MSC 2502

3:20p
Using a Depth Camera for Object Classification in Nuclear Gloveboxes
Adam Allevato, University of Texas, Austin

3:40p
Operator Control Modes for Implementing Autonomous Search Behaviors
Andrew Sharp, University of Texas, Austin

4:00p
Collaborative Robot Nuclear Surveying (CRONUS) Project
Martin Zavala, Georgia Institute of Technology

Argonne National Laboratory Track

Reactor Physics II

MSC 2503

3:20p
Upgrade of Deterministic Multi-Energy Group Diffusion Reactor Physics Code
Bilguun Byambadorj, Idaho State University

3:40p
Anisotropic Azimuthal Power and Temperature: Impact on Hydride Distribution
Michael Mankosa, Pennsylvania State University

Math and Computation III

MSC 2503

4:00p
On the Creation of Discontiguous Groups and their Applications to the Transport Equation
Andrew Till, Texas A&M University

4:20p
A DFEM Formulation of the Diffusion Equation on Arbitrary Polyhedral Grids
Michael W. Hackemack, Texas A&M University

All-Day Shuttle

Thursday, Friday, and Saturday, April 9-11th, 8:30a - 8:30p
MSC (Honor Entrance) to/from Hotels

Starts from the MSC at the top and bottom of each hour. The bus can be expected to reach the Hyatt and Hawthorn hotels 7 minutes after leaving the MSC. The Hilton stop will occur roughly 10 minutes after leaving the MSC, and the Hampton stop will be 14 minutes after leaving the MSC. Please arrive at your stop 5 minutes before departure.

Hotel pick-ups will occur near the front entrance of each hotel. The exception is for members staying at Hyatt Place, who must walk to the front entrance of Hawthorn Suites next door. The MSC stop will be located at the carport facing Simpson Drill Field. See the Maps page for more information.

Morning Shuttles

Thursday, April 9th, 7:30a - 8:30a
Friday and Saturday, April 10-11th, 7:30a - 9:30a
Hotels to/from MSC (Honor Entrance)

Morning shuttles will leave each hotel every half hour. Participants are encouraged to use the morning shuttles to avoid crowding the all-day shuttle that services all four hotels. Pick-up and drop-off locations will be the same as that for the all-day shuttle.

Evening Shuttles

Thursday, April 9th, 8:00p, 8:30p, and 9:00p
Friday, April 10th, 7:30p, 8:00p, and 8:30p
Saturday, April 11th, 9:00p, 9:30p, and 10:00p
MSC (Honor Entrance) to Traditions Complex/Hotels

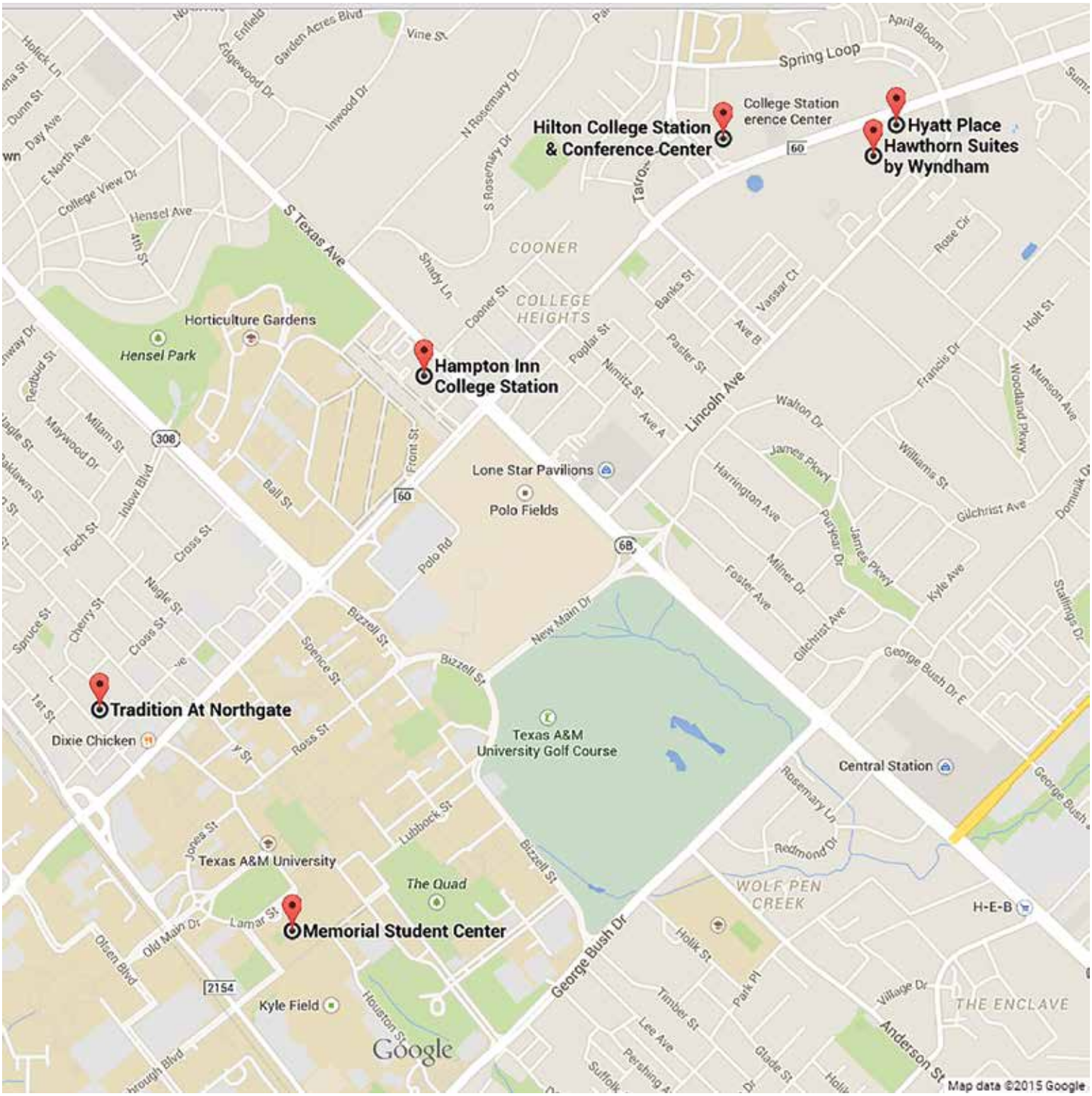
Shuttles will leave from the MSC every half hour to take members to the socials at the Northgate district or back to the hotels if they so desire. The buses will stop at Northgate near the Traditions apartment complex before heading on to the hotels. On Saturday, buses will go directly from the MSC to the hotels.

Late Night Shuttles

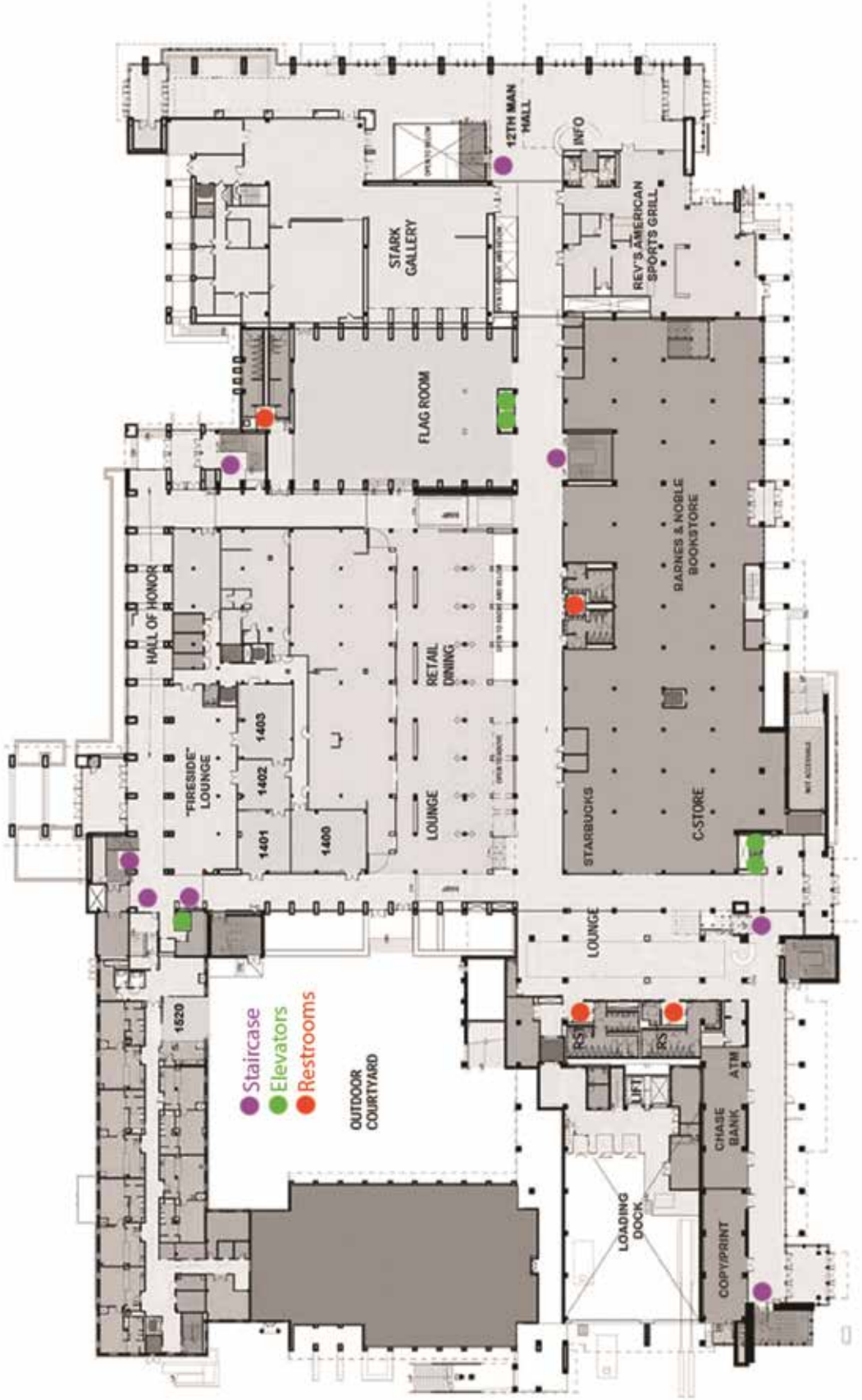
Thursday, Friday, and Saturday, April 9-11th, 9:00p - 1:00a
Traditions Complex to Hotels

Late night shuttles will run from the Traditions complex at Northgate back to the hotels. Buses will leave every half hour. Last pick-up will be at 1 am.

Hotel/Campus Shuttle Map



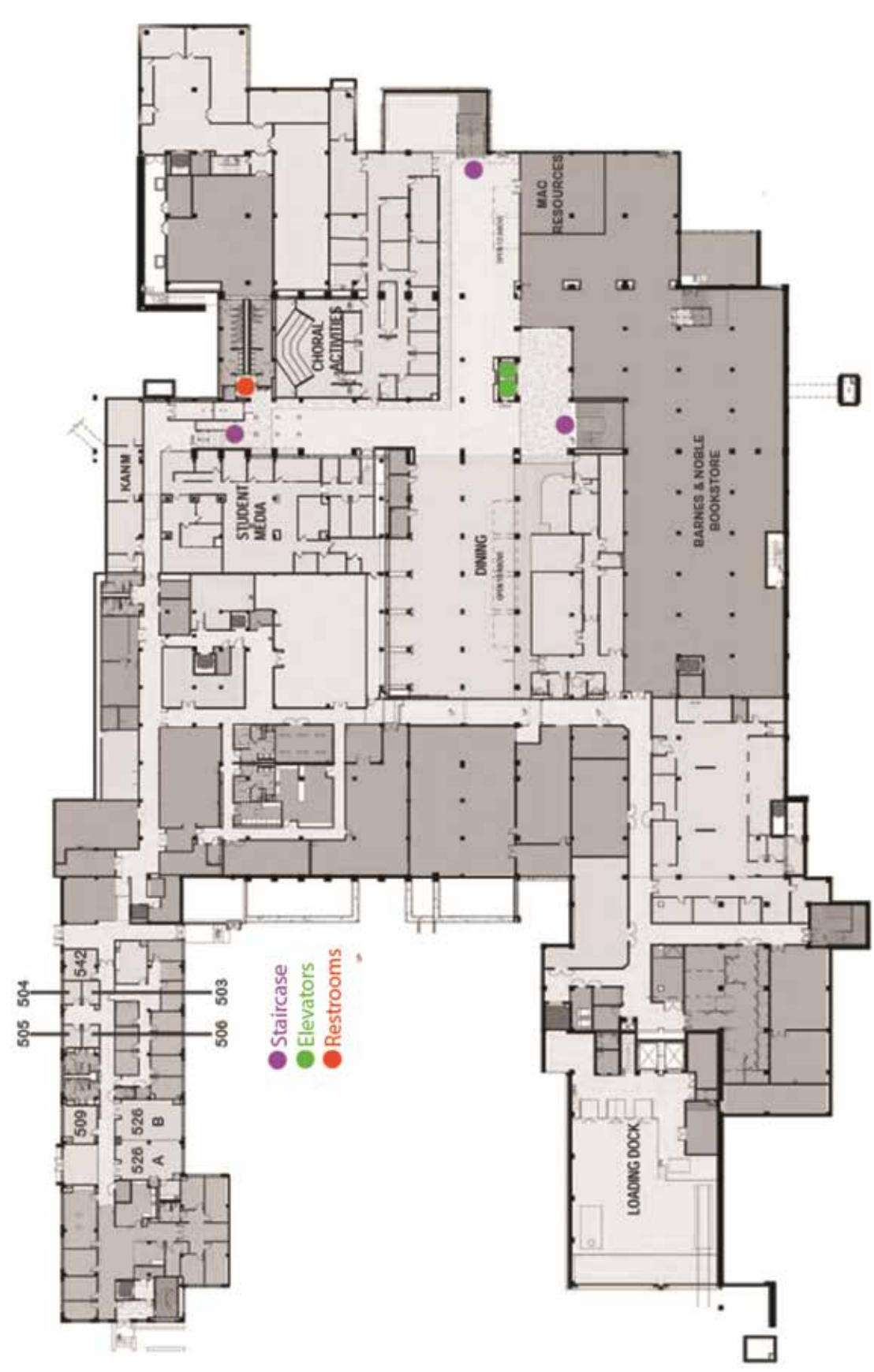
MSC First Level



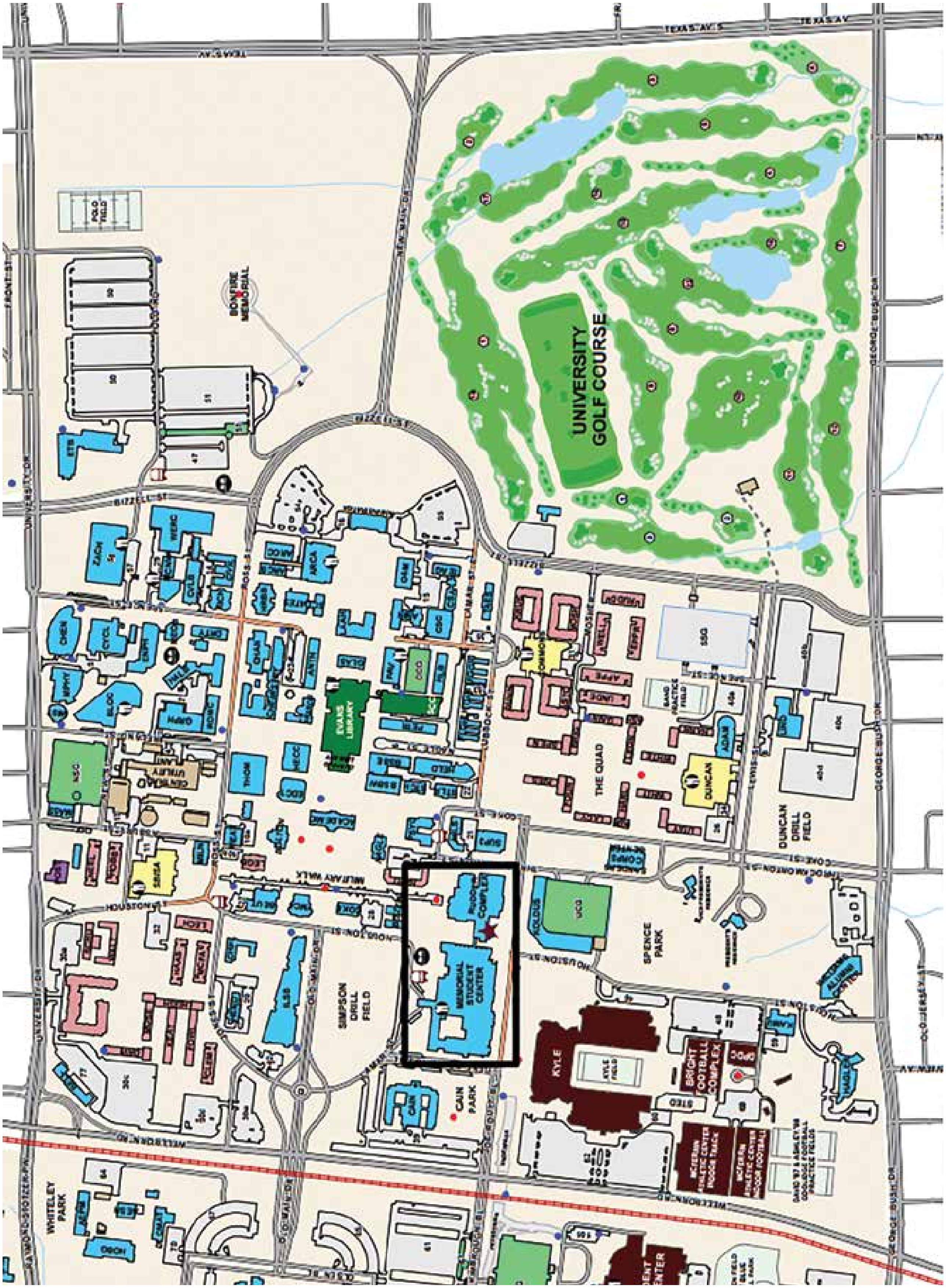
Shuttle Bus Pick Up

MSC Second Level

MSC Lower Level



Campus Map


UNIVERSITY GOLF COURSE
BONFIRE MEMORIAL
EVANS LIBRARY
THE QUAD
DUNCAN
DUNCAN DRILL FIELD
MILITARY WALK
RUDDER COMPLEX
MEMORIAL STUDENT CENTER
SIMPSON DRILL FIELD
SPENCE PARK
KYLE
KYLE FIELD
BRIGHT FOOTBALL COMPLEX
CAIN PARK
WHITELEY PARK

ANS Conference

Utility Working Conference and Technology Expo

Application for Student Interns

ANS student members are encouraged to register for the Student Intern positions. Interns are expected to be at the UWC from 4:00 p.m. on August 9, 2015 until 12:00 p.m. on August 12, 2015. Submit your completed application as a PDF via email attachment to Tom Remick at thomas.remick@aps.com. Complimentary registration and travel assistance is provided for Student Interns.

Students selected as UWC Student Interns will receive a $1500.00 check in the mail prior to the UWC. A completed W-9 form, provided by ANS, will be required to be completed prior to receiving the check. Student Interns are responsible for making their own travel and housing arrangements; and for submitting receipts. According to IRS regulations, payments of $600 or more in a calendar year must be reported to the IRS on a form 1099 Miscellaneous Income. Travel related expenses (e.g., airfare, hotel, meals, etc) supported by receipts do not count towards the $600. You may submit your receipts by mail to the ANS Accounting Office, or you may email your receipts directly to mkruml@ans.org.

If selected to work as a Student Intern, additional information will be sent to you. **If you are accepted to work as a Student Intern, do not register for the meeting.**

PLEASE PRINT

First Name/Middle Initial:_____ Last Name:_____

ANS National Student Member #: _____

Telephone:_____ Fax Number:_____

Major: _____ Degree: ❒ BS ❒ MS ❒ PhD ❒ _____ Expected Graduation Year:_____

University/School: _____

Address: _____

City/State/Zip: _____

Email Address:_____

Please write a brief description of your career goals:

_____

_____

_____

Please write why you want to be a Student Intern at the 2015 UWC:

_____

_____

_____

The deadline to submit your application to for the Student Intern positions is **May 8, 2015** or when the student limit for the program has been reached, whichever occurs first. Applications received after this deadline may be accepted at the discretion of the UWC Organizing Committee. Please note that all student members who are not selected as interns at the conference may attend by paying the appropriate student registration and hotel fees to attend the conference.

August 9-12, 2015 • Amelia Island, FL • OMNI Amelia Island Plantation

ANS Conference

Utility Working Conference and Technology Expo

Application for Student Interns

ANS student members are encouraged to register for the Student Intern positions. Interns are expected to be at the UWC from 4:00 p.m. on August 9 until 12:00 p.m. on August 12. Submit your completed application as a PDF via email attachment to Tom Remick at thomas.remick@aps.com. Complimentary registration and travel assistance is provided for Student Interns.

Students selected as UWC Student Interns will receive a $1500.00 check in the mail prior to the UWC. A completed W-9 form, provided by ANS, will be required to be completed prior to receiving the check. Student Interns are responsible for making their own travel and housing arrangements; and for submitting receipts.

If selected to work as a Student Intern, additional information will be sent to you. If you are accepted to work as a Student Intern, do not register for the meeting.

The deadline to submit your application to for the Student Intern positions is Friday, May 8 or when the student limit for the program has been reached, whichever occurs first. Applications received after this deadline may be accepted at the discretion of the UWC Organizing Committee. Please note that all student members who are not selected as interns at the conference may attend by paying the appropriate student registration and hotel fees to attend the conference.

Visit the website at http://www.ans.org/meetings/m_208 for more information.

August 9-12, 2015 • Amelia Island, FL • OMNI Amelia Island Plantation


AMERICAN NUCLEAR SOCIETY
A N S
ANS