



AMERICAN NUCLEAR SOCIETY STUDENT BRANCH
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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Virginia Curran
President
ANS MIT Student Section

April 29, 2002

Honors and Awards
American Nuclear Society
555 North Kensington Avenue
La Grange Park, IL 60526

Dear Glasstone Award Committee,

I am pleased to submit this nomination for the 2002 Samuel Glasstone Award on behalf of the ANS Massachusetts Institute of Technology Student Section.

I am very proud of the continued success and vitality of our High School Speakers Program. Educating the public, particularly young people, on the fundamentals of radiation and the benefits of nuclear science and technology remains vital to the survival of the nuclear industry. This year we spoke to over 400 students at schools in the greater Boston area, and formed a relationship with the local ANS Northeast Section to keep the program financially stable. In addition our ANS Monday Afternoon Seminar Series continues to bring in outstanding speakers to educate and motivate our students on key issues in the nuclear sciences and engineering.

It is with pride and many thanks to all of the outgoing officers of the ANS MIT Student Section that I submit this application.

Sincerely,

Virginia Curran
President, MIT Student Section
American Nuclear Society

1. PUBLIC INFORMATION

High School Speakers Program

The goal of the High School Speakers Program is to share our knowledge in nuclear science and technology with the general public. For many years, volunteer students from the nuclear engineering department have visited high schools in the Greater Boston Area to talk about nuclear engineering and related fields. The talks cover a broad range of topics within the nuclear field such as basic nuclear physics, fission power plants, health and medical applications of nuclear technology, waste management, energy and the environment, and fusion technology. We typically speak to high school juniors and seniors in physics, chemistry, general science or environmental classes.

During the 2001/2002 school year, the High School Speakers Program contacted over 175 science teachers in Massachusetts, most of them in the Greater Boston Area, to offer our program. MIT ANS students visited 11 high schools and reached more than 400 students. Teachers selected the topic in which they were interested, and we matched their requests with speakers specifically working in that field. The reviews have been extremely positive from the audience as well as the speakers. Teachers appreciate our efforts and our knowledge in the field. High school students are very receptive and have, in general, many questions. The visual aids used in the program (slides, transparencies, pictures) as well as devices such as a Geiger counter help in keeping the audience interested and making the talks dynamic. Many of the high school students have media induced stereotypes of nuclear technologies that the program is well suited to dispel. However, the objective of the program is not promotion, but rather, presentation of the facts to the best of our ability so individuals can make their own decisions.

In summary the High School Speakers Program is a successful outreach program, which greatly contributes to inform high school students about nuclear technology.

MIT Reactor and Alcator C-MOD Tours

MIT ANS students regularly volunteer as tour guides to the MIT 5 MW fission research reactor and to the Alcator C-MOD fusion tokamak reactor. This year we provided tours to new and prospective graduate and undergraduate students, members of the greater MIT community, and interested members of the local community. The tours are a great way to show the students the outstanding research opportunities in the field of nuclear engineering and to answer all types of questions on nuclear issues.

Nuclear Engineering Department Open House

In April 2001, the ANS student section assisted in organizing the Nuclear Engineering Department's Annual Open House which was attended by over 200 members of the MIT community. At this event, ANS members discussed the various research activities in nuclear science and technology being undertaken in the NED, and we provided demonstrations on radiation detection, nuclear chemistry, and atomistic simulations. A whole body counter was available to measure those who were interested and a plasma demonstration device that resembled a light saber was used to attract people to the open house.

MIT Activities Midway

Every August, the ANS student section hosts a booth at the MIT Activities Midway to promote ANS activities and the nuclear field in general. This year, the MIT Student Branch borrowed materials from ANS headquarters to display at the Midway. In addition, DVDs about nuclear topics were played to attendees.

2. COMMUNITY/PUBLIC SERVICE

CASPAR Volunteer Dinner

One of our most outstanding initiatives this year was to start a volunteer program to help feed homeless persons at a community homeless shelter. The CASPAR volunteer dinner was established and initially funded by the MIT ANS Student Section to provide meals to over 100 homeless people on a monthly basis. The CASPAR shelter is located a few blocks from most of the MIT Nuclear Engineering research facilities, so we are able to see first hand the difficult conditions that many homeless people have to contend with. One Friday a month we coordinate with the shelter to provide food and servers for dinner. A typical menu prepared by ANS would be spaghetti with meatballs, salad, green beans, and fresh baked chocolate chip cookies. This program provides a great opportunity for students to take a break from their studies and interact in a non-academic setting, and it has been very successful in getting the ANS and NED better integrated into our community.

3. UNIVERSITY SERVICE

New Graduate Student Orientation

Active in the MIT Nuclear Engineering Department student's life from their first day on campus, the MIT Student Section of the ANS annually organizes and executes the departmental orientation for new graduate students. Orientation starts with the "Early Bird Coffee, Donut, & Bagel Social" in which students can first get to know each other as well as some of the faculty members in attendance.

Following the social, students are given an introduction to all of the various academic areas within MIT NED in the form of short presentations by faculty members in each field. Students are then introduced to the MIT Student Section of the ANS and ANS National in an effort to get them involved in the activities of both. At this time, the new students are also given overview of the financial aid programs, computing facilities, and MIT sponsored social activities. Finally, tours of departmental laboratories are organized for students at various times throughout the week to help them get familiar with the activities of the MIT NED.

Undergraduate Expo

The ANS organizes and promotes the Nuclear Engineering Department's contribution to the MIT Undergraduate Expo. Both MIT ANS students and faculty members from the Nuclear Engineering Department participated in the MIT annual Undergraduate Expo. During Registration and Orientation week in the fall, departments and extra-curricular groups man booths to promote their activities. The Undergraduate Expo is targeted at new freshman, but is open to everyone at MIT and is well attended by both freshmen and new graduate students. With a combination of written materials, posters, and demonstrations covering fission, fusion, and radiological sciences and technology, the ANS/NED booth reached over 400 new students. The NED booth contained a levitating dipole experiment, a Van de Graff accelerator, and a radiation detection instrument display. This event was a great success at getting new students more interested in the nuclear sciences and engineering.

Course and Instructor Evaluations

At the end of every semester, the MIT Section of the ANS coordinates the Course and Instructor Evaluations. The MIT ANS ensures that each course receives evaluation forms and then compiles the results and provides them to the department. These evaluations are also used in selecting the Alpha Nu Sigma Outstanding Professor Award at the Spring Awards Banquet.

NED Telethon

In October 2001, four ANS members volunteered to telephone alumni to solicit donations for MIT and departmental academic programs. These students contacted 127 alumni and with a 90% pledge rate raised \$8583 for the Nuclear Engineering Department. Much of this money comes back to the students in the form funds for social activities and other ANS sponsored programs.

Graduate Student Council

Two ANS students are elected each year to serve as Graduate Student Representatives for the Nuclear Engineering Department. These students attend monthly Graduate Student Council (GSC) meetings and serve as representatives for the graduate students in the Nuclear Engineering Department during GSC elections. This year (2001-2002), our representatives not only represented the interests of the students within the Nuclear Engineering Department, but also chose to serve the community of MIT graduate students as a whole. One of the representatives is a member of the Muddy Charles Pub Committee, which runs the on-campus graduate student pub. Our other representative has gone above and beyond the call of duty to serve on the Academics, Research, and Careers Committee. She pioneered a new mentoring program for incoming international graduate students, in order to promote the interaction of students on campus with the incoming students in order to make them feel more at home. There is a small website concerning this program at :

<http://web.mit.edu/gsc/www/Committees/ARC/mentorship.htm>

NED Graduate Recruiting Weekend

In an attempt to get the highest quality graduates students into the MIT Nuclear Engineering Program, the NED organizes a three day event (Thursday to Saturday) to recruit prospective graduate students who are not located in the greater Boston area. The NED provides transportation and lodging for the students, and the ANS provides student volunteers to act as hosts. This event is a great way to get students not only into MIT but also interested in the field of nuclear science and engineering. The volunteers introduce prospective students to the Nuclear Engineering Department and MIT in general. They also take the prospectives out to dinner in Boston in order to show them around town a bit.

Faculty Meetings

The president of the ANS MIT Student Section also attends NED Faculty Meetings as the sole student representative. At these monthly meetings, we represent the entire MIT Nuclear Engineering

Department's student body and provide feedback to and from the faculty. Some issues of concern for this year were improvements to the NED Doctoral Qualifying Examinations, increasing undergraduate enrollment, and completely re-doing the undergraduate curriculum. Having a student representative at these faculty meetings has been one of the few ways in which to make students opinions and desires known to the entire faculty. The interaction has been highly beneficial.

Nuclear Engineering Department Visiting Committee

Every other year a Visiting Committee consisting of nuclear professionals from outside MIT's Nuclear Engineering Department performs an external review of the Department. During each review, the Student Branch presents a report to the Committee from the student's viewpoint. The results of these interactions have been excellent. Past student delegations have led to the renovation of student facilities and increased funding for student activities. This year, the delegation focused on the role of TAs, improving the doctoral qualifying exams, increasing undergraduate enrollment, and updating the departmental computer facilities. There has been a lot of very positive movement on the first three issues and we continue to press the department on the fourth.

Annual ANS/NED Awards Dinner

This dinner, held this year on May 2, is designed to bring together the entire MIT NED community to celebrate our international diversity and to reward deserving faculty and students. The Awards dinner is completely organized by the ANS Student Section, and this year we were able to convince the department to once again hold the event at our MIT Faculty Club, hopefully creating an annual tradition. Over 70 students and faculty are treated to dinner and dessert, as they enjoy the NED awards ceremony, ANS officer elections, and Alpha Nu Sigma inductions. The awards that are handed out include student service awards, Outstanding Teaching Assistant, Outstanding Teacher, the Kaplan and Axford Awards for undergraduate academic performance, the Benedict Graduate Fellowship, and the Spira Award for Teaching Excellence. Most of the awards come with certificates and cash gifts. Together with the social celebration and service recognition, the 2002 Awards dinner should be a great success!

4. PROFESSIONAL DEVELOPMENT

Monday Afternoon Seminar Series

Every other Monday during the Fall and Spring Terms (excluding holidays), the MIT Student Section of the ANS and the MIT NED co-sponsor a seminar series which features speakers from a variety of fields

in nuclear technology. The lectures give students a chance to hear about the state of the art in nuclear science and technology from leaders in industry, research, and academia. This year, we were able to provide listeners with a representative speaker from each part of the nuclear community including fission, medical applications of radiation, waste management, fusion, environmental cleanup, and radiation sciences and technology. The ANS President is the primary organizer and director for this seminar series. With the assistance of student volunteer hosts, we are able to have outstanding professional interactions with speakers such as Dr. Madeleine Feltus of the DOE Office of Nuclear Energy, Science, and Technology; Jim Muckerheide, the Massachusetts State Nuclear Engineer; and Dr. A. Gopalakrishnan, former chairman of India's Atomic Energy Regulatory Board. The Monday Afternoon Seminar Series not only enriches the academic experiences of the hundreds of students who attend each year, but it also provides the ANS officers and opportunity to organize seminars and interact with world class speakers and attendees.

Northeast Section Meetings

The MIT Student Section of the ANS participates regularly in the activities of the ANS NE Section. Additionally, the President of the MIT Student Section contributes to the activities of the Northeast Section by acting as a member of the board of directors.

American Nuclear Society Meetings

Three MIT ANS students attended the 2001 ANS Winter Meeting in Reno, NV and presented papers. In addition, the MIT undergraduate design team presented and won at the ANS Design Competition. Six MIT ANS students will attend the ANS Annual Meeting in Hollywood, FL. A professor in the MIT Nuclear Engineering Department was very generous in supporting financial assistance for the students attending this year's ANS winter meeting.

6. SOCIAL EVENTS

As a general rule, the ANS MIT Student Section tries to host two social events a month. These events give everyone a chance to relax, meet new people, and give students and professors a chance to get to know each other outside the classroom. The ANS is the primary focal point for all social activities within the MIT Nuclear Engineering Department.

Annual ANS/NED Awards Dinner

This dinner, to be held this year on May 2, is designed to bring together the entire MIT NED community to celebrate our international diversity and to reward deserving faculty and students. The Awards dinner is completely organized by the ANS Student Section, and we have established the tradition of holding the event at the MIT Faculty Club. The student and faculty attendees are treated to dinner and dessert as they enjoy the NED awards ceremony, ANS officer elections, and Alpha Nu Sigma inductions. The awards that are handed out included student service awards, Outstanding Teaching Assistant, Outstanding Teacher, the Kaplan and Axford Awards for undergraduate academic performance, the Benedict Graduate Fellowship, and the Spira Award for Teaching Excellence. Most of the awards come with certificates and cash gifts.

Steak Fry

Each fall the MIT ANS sponsors the annual steak fry to create a mixing pot for new and returning members of the department, students, faculty, and staff. Both students and faculty attended, many with their families. The attendees consumed over 70 pounds of steak and wide assortment of other picnic fare, including vegetarian options. This is a great opportunity for the new students to see the importance of socializing with their peers.

Pizza Socials

Several pizza socials held throughout the school year to give students a break from their workload. Held in the ANS lounge and the department conference room, pizza and refreshments are served while people play friendly games on the lounge's pool table and dartboard. Between 20 to 30 people, both students and faculty members, typically attend the socials.

Department Social Hours

The nuclear engineering department holds several social hours during the year, which give students a chance to socialize in the afternoon with the professors and staff of the department. The MIT ANS is responsible for advertising the event and letting students know about the opportunity to meet with other people in the department.

Post Generals Party

Sponsored by the Alpha Nu Sigma honor society of the ANS, a Post Generals Party is held at the

beginning of each semester in celebration of those who passed their doctoral qualifying exam, written and/or oral. Over 30 students and faculty attended this year's events.

Sushi Social

Last year, the MIT Student Branch began an annual tradition of throwing a final end of the year event featuring all types of sushi. During the first social, \$220 worth of sushi (about 250 pieces) were swiftly devoured. Due to the unexpected popularity of last year's event, the budget has been doubled for this year's recap. We also plan to have an array of Japanese teas to complement the sushi feast.

Athletics

As usual the ANS MIT Student Section brought students together for some non-academic fun. This year, we fielded intramural teams for ice hockey, water polo, badminton, and tennis. The ANS Athletics Chairperson organizes the teams, coordinates practices, and ensures all players know of the times and dates for events. ANS members have enjoyed playing against different student groups throughout the year.

7. SECTION MANAGEMENT

The management of the MIT Student Section is performed completely by the ANS Student Officers. We provide funding budgets to both the Nuclear Engineering staff and to the MIT Graduate Student Council where we get most of our social funds. In addition, we hold monthly ANS Officer meetings to conduct the business of the section with numerous meeting held offline with the respective officer positions. We generate minutes from each meeting with a standing agenda, and all past, current, and future business listed. The minutes are approved at the start of each meeting to ensure all pending issues are dealt with. We hold officer elections once each year. This year we followed our previously amended procedure by soliciting nominations for all positions prior to elections to ensure all students have a fair chance at getting involved. In addition, we moved up the election date to allow for a smooth transition of the new officers into their positions. We will have one joint ANS Officer's meeting with the incoming and outgoing officers to facilitate the turnover.

APPENDIX: Supporting Documentation

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23	Schedule of Events for the 2002 International Awards Dinner

MIT American Nuclear Society/Nuclear Engineering Department Calendar

Fall 2001

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1	2
3 Labor Day	4 Registration Day – ANS Officer’s Meeting	5 First Day of Classes	6	7	8	9
10 Seminar / General Meeting	11	12 Post Generals Party	13	14	15	16
17 Student Holiday	18	19	20 Pizza Social	21	22	23
24 Monday Afternoon Seminar	25	26	27	28 Fall Steak Fry	29	30
1 October Monday Afternoon Seminar	2	3	4	5 Add Date	6	7
8 Columbus Day NO CLASSES	9 Holiday	10	11 International Social	12	13	14
15	16	17	18 Department Social	19	20	21
22 Monday Afternoon Seminar	23	24	25	26	27	28
29	30	31	1 November Pizza Social	2	3	4
5 Monday Afternoon Seminar	6	7 Visiting Committee	8 Visiting Committee	9	10	11
12	13	14	15	16 ANS Thanksgiving Dinner	17	18
19	20	21 Drop Date	22 Thanksgiving	23 Holiday	24	25
26 Monday Afternoon Seminar	27	28	29 Department	30	1 December	2
3	4	5	6	7 NED Christmas Party	8	9
10	11	12 Last Day of Class	13	14	15	16
17 FINAL	18 EXAM	19 WEEK	20 -----	21 -----→	22 Winter Break Begins	23

MIT American Nuclear Society/Nuclear Engineering Department Calendar
Spring 2002

<i>Sun</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	<i>Sat</i>
					1 February	2
3	4 Registration Day	5 First Day of Classes	6	7	8	9
10	11 3:00 PM Monday Aft. Seminar	12	13 8:00 PM Post General's Party	14	15	16
17	18 President's Day	19	20	21 6:00 PM Pizza Social NW12 Lounge	22	23
24	25 3:00 PM ANS General Meeting	26	27	28	1 March	2
3	4 3:00 PM Monday Aft Seminar	5	6	7	8	9
10	11	12	13	14 4:00 PM Department Social	15	16
17	18 3:00 PM Monday Aft. Seminar	19	20	21 6:00 PM Pizza Social NW12 Lounge	22	23
24	25 Spring Break-----	26 -----	27 -----	28 -----	29 -----	30
31	1 April	2	3	4 6:00 PM International Social	5	6
7	8 3:00 PM Monday Aft Seminar	9	10	11 4:00 PM Department Social	12	13
14	15 Patriot's Day-----	16 -----	17	18	19	20
21	22	23	24	25 6:00 PM Awards Dinner Faculty Club	26	27
28	29 3:00 PM Monday Aft Seminar	30	1 May	2 6:00 PM Pizza Social NW12 Lounge	3 Doctoral Thesis due	4
5	6 3:00 PM Monday Aft. Seminar	7	8	9	10 SB, SM Thesis due	11
12	13	14	15	16 Last day of class	17	18
19	20 Exams-----	21 -----	22 -----	23 -----	24 -----	25

MIT

FALL 2001



DEPARTMENT OF
NUCLEAR ENGINEERING/
AMERICAN NUCLEAR
SOCIETY SEMINAR
SERIES

American Nuclear Society/
Nuclear Engineering Department Seminar Series

Time: 3:30 pm Monday

(Refreshments served at 3:00 pm)

Place: NW14-1112

- September 10, 2001 *The Use of High Temperature Gas Reactors for Nuclear Waste Transmutation*
Dr. Francesco Venneri
Los Alamos National Laboratory
- September 24, 2001 *Modeling the Energy Policymaking Process*
Professor Kent Hansen
Massachusetts Institute of Technology
- October 1, 2001 *Combinatorial Methods of New Materials Discovery for Photocatalytic Hydrogen Production: A Long Way to a Million Million Watts.*
Professor Eric McFarland
University of California, Santa Barbara
- October 22, 2001 *Radiation Effects in Biological Systems*
Prof. Jeffrey Coderre
Massachusetts Institute of Technology
- November 5, 2001 *Radiation Hormesis*
Jim Muckerheide
Massachusetts State Nuclear Engineer
- November 26, 2001 *Intensity-Modulated Radiotherapy*
Dr. Thomas Bortfeld
Massachusetts General Hospital
- December 3, 2001 *Generation IV Reactor Designs and Gas-Cooled Reactor Technology Research Sponsored by the DOE Nuclear Energy Research Initiative Program*
Dr. Madeleine Feltus

MIT

SPRING 2002



DEPARTMENT OF
NUCLEAR ENGINEERING/
AMERICAN NUCLEAR
SOCIETY SEMINAR SERIES

American Nuclear Society/
Nuclear Engineering Department Seminar Series

Time: 3:30 pm Monday

(Refreshments served at 3:00 pm)

Place: NW14-1112

- February 12, 2001 *Chemistry of the Conversion Processes of Weapon-Grade Plutonium into Oxide for Mixed Oxide (MOX) Fuel Fabrication*
Dr. Caroline Mason
Los Alamos National Laboratory
- March 4, 2002 *High Burnup Fuel Performance – Potential Problems and Modeling Needs*
Dr. Carl Beyer
Pacific Northwest National Laboratory
- April 8, 2002 *Nondestructive Evaluation Technology For Nuclear Structural Materials*
Jack Lance
Electric Power Research Institute
- April 22, 2002 *Nuclear Reactor Development in India*
Dr. A. Gopalkrishnan
Kennedy School of Government, Harvard University
- April 29, 2002 *Parallel Processing for Reactor Physics Codes*
Dr. Laurie Waters
Los Alamos National Laboratory
- May 6, 2002 *The New Nuclear Business with Old Nuclear Plants*
Dr. Tom Esselman and Mr. William McBrine
Altran Corporation
- May 13, 2002 *Nevada, Nuclear Waste, and Nuclear Transmutation*
Dr. Gary Cerefice
Harry Reid Center, University of Nevada Las Vegas

2001-2002 Expenses

Virginia Curran, President
Karen Noyes, Treasurer

Actual Expenses		
Fall 2001 (Sep-Jan)		
	<i>(budget)</i>	
1 Fall Steak Fry	<i>(570.00)</i>	518.22
2 Thanksgiving Dinner	<i>(350.00)</i>	307.47
5 Two Pizza Socials	<i>(340.00)</i>	306.55
6 HS Speakers Program	<i>(200.00)</i>	36.06
7 Caspar Shelter Dinners	<i>(250.00)</i>	278.55
8 IM Sports (equip, fees)	<i>(500.00)</i>	177.46
9 Alpha Nu Sigma	<i>(200.00)</i>	88.48
10 Car Maintenance	<i>(500.00)</i>	272.07
11 Room Rentals	<i>(110.00)</i>	0
12 Unanticipated Fund	<i>(100.00)</i>	149.80
TOTAL	<i>(3120.00)</i>	2134.66

Actual Expenses		
Spring 2002 (Feb-Jun)		
	<i>(budget)</i>	
1 International Day	<i>(350.00)</i>	334.63
2 HSSP lunch/dinner	<i>(100.00)</i>	0.00
5 Three Pizza Socials	<i>(510.00)</i>	307.61
6 HS Speakers Program	<i>(200.00)</i>	94.19
7 Caspar Shelter Dinners	<i>(250.00)</i>	181.56
8 IM Sports (equip, fees)	<i>(200.00)</i>	2.50
9 Alpha Nu Sigma	<i>(200.00)</i>	33.96
10 Car Maintenance	<i>(500.00)</i>	182.09
11 Room Rentals	<i>(110.00)</i>	0.00
12 Unanticipated Fund	<i>(100.00)</i>	50.00
TOTAL	<i>(2620.00)</i>	1186.54

Actual Expenses		
Summer 2001 (Jul-Aug)		
	<i>(budget)</i>	
1 Summer BBQ	<i>(187.50)</i>	164.63
2 Unanticipated Fund	<i>(50.00)</i>	66.22
TOTAL	<i>(237.50)</i>	230.85

ANS Bank Account	
Latest Statement (03/29/02)	3579.33
Starting Balance (6/01/01)	4559.90
Difference to Date	-980.57

Actual Income		
	<i>(anticipated)</i>	
1 Nuclear Eng. Dept.	<i>(3000.00)</i>	0.00
2 ANS Northeast Section	<i>(0.00)</i>	0.00
3 GSC Fall 2001	<i>(872.50)</i>	872.50
4 GSC Spring 2002	<i>(690.00)</i>	0.00
5 GSC Rep Fall Funds	<i>(500.00)</i>	500.00
6 GSC Rep Spring Funds	<i>(500.00)</i>	0.00
7 Chem half IM hockey	<i>(75.00)</i>	75.00
TOTAL	<i>(4592.50)</i>	902.50

Total Actual Income	902.50
Total Actual Expenses	3552.05
Net	-2649.55

NOTE: Current budget may not include upcoming expenses and may not include income for the entire term.



AMERICAN NUCLEAR SOCIETY STUDENT BRANCH
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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GINI CURRAN
PRESIDENT
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August 30, 2001

Dear NED Student,

On behalf of the MIT Student Branch of the American Nuclear Society (ANS), I would like to welcome you to MIT. As you begin to think about your first semester as a graduate student at MIT, I want to introduce you to some of the many professional and social activities available to you sponsored by the MIT ANS. Participating in these activities can help make your time at MIT more enjoyable and rewarding. ANS activities during the term include:

Monday Afternoon Seminar Series: Every other Monday during the Fall and Spring Terms (excluding holidays) the NED and ANS sponsor a seminar series which features speakers from a variety of fields in nuclear technology. The lectures give students a chance to hear about the state of the art in nuclear science and technology from leaders in industry, research, and academia. There are also opportunities to host these speakers (you must come to the ANS general meeting to take advantage this—see next page) as they visit MIT so that students can establish contacts and learn from the speakers in a more personal, individualized way (not to mention a free lunch at Legal Seafood!). Lectures are held on alternating Mondays at 3:30 PM in Room NW14-1112. Free coffee, juice, and bagels are provided, starting at 3:00 PM.

High School Speakers Program (HSSP): This program allows interested NED students to speak to local area high school classes about nuclear science and technology. The HSSP provides NED students with invaluable experience in lecturing and oral presentation (very important for the Ph.D. Qualifying Examination!) and educates high school students on the fundamentals of nuclear science. Last year ANS volunteers spoke to over 400 students.

ANS Northeastern Section Meetings: As a member of the MIT ANS Student Branch you are invited to meetings of the ANS Northeastern Section. These meetings are held monthly and provide an excellent opportunity for students to meet with nuclear professionals in the New England area. A great professional networking opportunity!

ANS National Membership: As a member of the MIT ANS Student Branch, you have the chance to join ANS National at the special student rate of \$20 per year. Membership includes a one year subscription to *Nuclear News*, a monthly magazine on news and developments within the nuclear industry.

Fall Steak Fry: Come out and meet fellow students and NED faculty at the ANS/NED Fall Picnic. Enjoy delicious steaks and all the fixings. The Steak Fry is scheduled for **Friday, September 28, 2001 in the Edgerton Courtyard from 1-5 pm** and is free for all NED students, friends, and family.

Pizza Socials: ANS holds Pizza Socials for students to mingle with NED faculty and each other in a relaxed atmosphere. Free pizza and soda are served.

NED Social Hours: Sponsored by the NED, but organized by the MIT ANS, these informal mixers for NED students and faculty are held once a month throughout the school year in the departmental conference room (24-213).

Thanksgiving Dinner: The MIT ANS holds a Thanksgiving-esque dinner on the Friday before Thanksgiving. Last year we had Chinese food. See what delicacies Twiggy comes up with this time!

Intramural Sports Teams: MIT ANS fields intramural sports teams in Tennis, Badminton, Water Polo, Volleyball, Softball, Ice Hockey, and others. Intramurals are a lot of fun and provide a great opportunity for blowing off steam after a long week of classes!

I could go on, but I'm sure that you are already familiar with the numerous activities that our ANS student branch is involved in. Whatever your interests, I encourage you to make the most of your time at MIT by *getting involved*. The MIT ANS Student Branch General Meeting is scheduled for **Monday, September 10, 2001 at 5:00 PM in Room NW14-1112**, following the seminar. All students are highly encouraged to attend to get more information on ANS activities and to discuss upcoming events. Information will also be provided on joining ANS National.

I hope to see everyone not only at the ANS General Meeting, but involved with our ANS student branch during the upcoming academic year. If you have any questions, please do not hesitate to contact either myself or one of the ANS Executive Committee Members.

Have a great semester,

Gini Curran
President
MIT ANS Student Branch

Report of the Student Delegation to the Visiting Committee

*Nuclear Engineering Department
Massachusetts Institute of Technology
8 November 2001*

Members:

Gini Curran, Chair	Fission	Graduate Student
Karen Noyes	Fission	Graduate Student
Leigh Outten	Fission	Graduate Student
Jacopo Saccheri	Fission	Graduate Student
Chris Melhus	RST	Graduate Student
Christopher Boswell	Fusion	Graduate Student
Vincent Tang	Fusion	Graduate Student
Sanjay Gangadhara	Fusion	Graduate Student
Duke Kennedy		Undergraduate Student
Ian Parrish		Undergraduate Student

- 1.0 Introduction**
- 2.0 Areas in which the NED is doing well**
- 3.0 Issues specific to graduate students**
 - 3.1 Teaching Assistanceships**
 - 3.2 General exam**
- 4.0 Issues specific to undergraduate students**
- 5.0 MIT's research reactor**
- 6.0 Computer Facilities**
- 7.0 Conclusion**

1.0 Introduction

With the advent of the bi-annual assessment of MIT's Nuclear Engineering Department (NED) by the Visiting Committee, a delegation of NED students has been formed to address the issues most important to them. The delegation consists of students from both graduate and undergraduate programs and from all research and academic areas.

In general, students in the NED are satisfied with the education that they are receiving; however, they see ways in which the department could be improved to enhance both their own experience as well as the effectiveness of the department. We hope that the visiting committee will take our considerations into account as they review the NED.

2.0 Areas in which the NED is doing well

While we would like to offer ways in which we think the department could improve, we would first like to commend the department for several things that we feel contribute positively to our educational experiences.

- **Job and internship information** – The department is very good about making students aware of job opportunities and summer internships. In addition, many professors will go out of their way to help students find and obtain the job or internship they desire.
- **Support of student social life** – In addition to strongly supporting the activities of the Student Branch of the American Nuclear Society, the department frequently sponsors additional social activities, showing its commitment to student morale and welfare outside the classroom as well as increased student/faculty interaction. The department has also demonstrated its support for general student well being by renovating many offices and the student lounge.
- **Breadth of research** – One of the most outstanding features of the department is the broad array of research opportunities available. Students are able to obtain a very diverse educational experience, exploring the many areas of nuclear engineering and finding research projects that match their interests.
- **Administrative staff** – The department administrative staff is always friendly and helpful to the students. We would like to commend all of them for the help and advice they give us every day.
- **Funding for graduate students** – Guaranteed funding for at least the first year is another outstanding feature of the department. Freedom from the stress of searching for and RA or TA is very beneficial to a smoother transition into the first year as a graduate student.

3.0 Issues specific to graduate students

3.1 TA assignments

The department needs to be more careful when making TA assignments. We realize that TA assignments are a cornerstone of the full funding commitment; however, in some cases first year

graduate students do not have the knowledge or experience required to effectively TA a course. It is very hard for a TA who is also enrolled in their assigned course to perform well. There is also added stress on the TA, who must stay ahead of the course, and the students in the course, who may not be getting sufficient help or feedback.

Another side effect of this problem is that students who may be better prepared than their peers bear the brunt of the most difficult assignments, frequently being assigned to more than one course. This unnecessarily adds stress to an already difficult first year.

We feel that the department should assign only qualified graduate students with experience in the subject matter to courses where the TA is expected to aid the professor in grading problem sets, writing solutions, and otherwise assisting students with the course materials. The scenario of a TA registered for credit in the course for which they are assigned should be avoided.

3.2 General Exam

The general exam will always be a topic of contention among the graduate students. We understand that it is not practical to represent the broadness of the department on the written exam in a fair manner. However, we do believe that the department should be more selective about the topics that are "fair game". Since course content may vary from year to year, or even semester to semester, we would like the faculty to list concepts rather than course numbers. For example, there was a good deal of confusion over the 22.55 question this past year. Three different questions were asked for the same course. A clearer description of the subject matter that could be covered by the exam each year will go a long way towards alleviating this problem.

4.0 Issues specific to undergraduate students

Undergraduate students, though they currently comprise only 1/6 of the department, are an important element of the NED. As UROPS, they provide an invaluable source of assistance on many projects. They are the first students many PhD candidates teach. A commitment to continuing excellence in undergraduate education is essential for the future of the NED.

In general, undergraduate students are satisfied with the NED. They enjoy the small class sizes, comfortable learning environment, ease of access to most professors, and the ability to quickly and easily obtain a UROP position. However, there are still many areas for improvement. First of all, the students would like to see the curriculum redesign implemented as soon as possible. Many courses still tend to be repetitive, and splitting such a small class among multiple tracks does not make sense.

TA and professor assignments should be given with more care. Some first year graduate students lack the background and skill required to be a TA for an undergraduate course. We believe that the TA assignments for undergraduate courses should be most selective. In addition, professors who are assigned to undergraduate courses should be more attentive to the undergraduates. Some professors don't focus much attention on undergraduate classes. This problem could be greatly improved by ending the practice of combining undergraduate/graduate courses.

Finally, the lab course curriculum should be reworked to include much greater breadth. The focus has been mainly radiation counting. Some more interesting labs covering RST and plasma physics would be a great improvement. However, in order to update the lab content, the lab facility will need some upgrades and improvements.

5.0 MIT's Research Reactor (MITR)

The students overwhelmingly support the continued operation of the MIT Research Reactor. The reactor can and should be a vital tool in the education of a nuclear engineer. Unfortunately, it has been underutilized by students and staff in the department. While the number of new and proposed projects shows that interest in the reactor is high, practical use has been difficult in the past. We hope that the reactor staff will continue to improve their efforts to aid and assist students who wish to use the reactor for their research or other educational purposes.

As a side note, new security measures implemented in NW12 are limiting the access of many students to the departmental facilities on the 2nd and 3rd floor, including the student lounge, reading room, a classroom, and a common computer facility. This problem needs to be solved as soon as possible, either by allowing all students in the NED free access to NW12, or moving the common facilities to another location.

6.0 Computer Facilities

The computer resources like the Athena workstations are not well-maintained. Additionally, the machines are often not improved if they break, instead they tend to be removed or otherwise disappear. The NW12 cluster keeps getting smaller and smaller. The students would like to see the computer labs upgraded and expanded. While many students do have access to their own PCs, the Athena system is an invaluable resource on many occasions for both class and research activities. We would also like to see the department invest in a few new PCs. The ones in the computer facilities tend have been here longer than most of the graduate students.

6.0 Conclusions

We hope that student input to the Visiting Committee has been helpful and that you consider it in your final recommendations. We want to emphasize that our criticism is meant to foster improvement of the NED in order to help make it the best nuclear engineering department it can be. We would also like to take this opportunity to thank the Visiting Committee for taking time out of your busy schedules to assist in the quality improvement process of our Nuclear Engineering Department.

Schedule of Events for the 2002 ANS International/Awards Dinner

7:00-7:30 Dinner

7:30 Introductory Remarks – Prof. Freidberg - 5 min

7:35 Undergrad Awards – Prof. Freidberg - 5 min

7:40 American Nuclear Society

- Introductory Remarks –TBA - 5 min
- Summary of Activities - Gini - 5 min
- Elections - Gini - 10 min

8:00 Alpha Nu Sigma

- Intro/Summary of Activities - Bilge - 5 min
- New Inductees - Bilge - 5 min
- Elections - Bilge - 5 min

8:15 Award Presentations

- Outstanding Teacher - Bilge
- Outstanding Service – Prof. Yip
- Benedict Fellow – Prof. Yip
- Outstanding TA – Prof. Yip
- Kaplan and Axford Awards – Prof. Czerwinski
- Spira Award – Prof. Freidberg
- 2002 Career Achievement Award in Nuclear Engineering – Prof. Freidberg