ONR/YIP Awards to
Dr. Ryan Eustice and Dr. Dave Singer

Assistant Research Scientist David Singer and Assistant Professor Ryan Eustice are the recipients of the 2007 Office of Naval Research Young Investigator Award (ONR/YIP). These prestigious awards represent two firsts; the first University of Michigan department to receive two ONR/YIP awards in the same year and the first UM research faculty, Dr. Singer, to get the ONR/YIP award at the University of Michigan.

Dr. Eustice received the award for his proposal titled “Real-Time Visually Augmented Navigation for Autonomous Search and Inspection of Ship Hulls and Port Facilities.” This research will address the time-consuming and imprecise present day methods for ship-hull inspection. The goal of this work is to enable an Autonomous Underwater Vehicle (AUV) to perform unattended, autonomous ship hull inspection for limpet mines using real-time visual-feedback for mapping and navigation. Challenges Dr. Eustice will confront include, the sheer size of the 160,000 sq ft area of a CNV’s hull at 40 plus depth along with the added complexity of low visibility, complex hull geometry (screws, rudders) and the acoustically noisy environment of a ship dockside. This work will set the basis for alleviating the need to put Navy divers at risk in this dangerous task.

Dr. Singer received the award for his proposal titled “Development and Testing of a Hybrid Agent Approach for Set-Based Conceptual Ship Design through the Use of a Type-2 Fuzzy Logic Agent to Facilitate Communications and Negotiation”. Currently, the Navy incurs a great deal of cost late in a project, where decisions made in the beginning control final cost, see the figure on page 12.

Dr. Singer’s research will focus on the creation of a tool that will advance the Navy’s ability to create better, faster, less expensive, mission capable designs. This proposed research extends Singer’s Ph.D. work in the hybrid agent field. The next evolution of the research is to introduce uncertainty into the design space through the introduction of Type-2 membership functions into the fuzzy logic system, as seen in the diagram on page 12.
FROM THE CHAIR
Professor Armin Troesch

This edition of the Nautilus reports on a number of significant events that have occurred in the department during the past year. First, we take pleasure in celebrating the birthdays of three of our senior (more mature?) esteemed emeritus professors: Professor Emeritus Harry Benford, Professor Emeritus Howard Bunch, and Professor Emeritus Jack Woodward. Harry is now 90 years young and celebrating life having just returned from his honeymoon with his new bride, Kathryn. Being somewhat younger but equally active, both Howard and Jack have celebrated their 80th birthdays since the last publication of this journal. Harry, Howard, and Jack all continue to make significant contributions to the department indicating that there must be something about a career in academia that promotes longevity.

During this past Spring Commencement, the department was fortunate to host the Secretary of the Navy, Dr. Donald Winter. Secretary Winter is keenly aware of department’s contributions in addressing significant US Navy challenges, both through providing graduates for meeting the Navy’s critical personnel needs and through conducting cutting-edge research. We were honored to have

Visit by the Honorable Dr. Donald Winter, 74th Secretary of the Navy

The department welcomed Dr. Winter and his wife Linda in April 2007 at a reception held in West Hall. Presentations were made on UM’s Role in the ONR - National Naval Responsibility for Naval Engineering Program (NNRNE) and UM’s Role in the Center for Innovation in Ship Design (CISD) (Chartered by ONR, NAVSEA 05 & NSWC-CD). The day finished with senior NA&ME student presentations of their NA475 final design capstone course projects and a tour of the Marine Hydrodynamics Laboratories.

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From The Chair

CONTINUED FROM PAGE 2

him and his lovely wife, Linda, as guests.

Student enthusiasm for the marine profession continues to grow as demonstrated by the Intern Program and student attendance at the SNAME Annual meeting. The department’s highly visible and expanding Summer Internship Program is unique in the College of Engineering. This year we had 50 students interning at 38 companies. These opportunities, which are so important to our students, are provided by friends of Michigan and alumni such as yourself. In addition, through the generous support of gifts the Quarterdeck Society and SNAME Student Section were able to send 15 students to last year’s SNAME Annual Meeting and expect to send at least 10 again this year.

The department continues to attract world-class lecturers and scientists who visit Ann Arbor to share their expertise and knowledge with students and faculty alike. Examples are the scholars and industry leaders supported this past year through the generous endowment provided by the Peachman Lectureship. We were fortunate to hear inspiring talks by Prof. Joe Katz (The Johns Hopkins University) on “High Resolution Measurements of Flow and Micro-Plankton Dynamics in the Laboratory and in the Ocean Using Digital Holography,” Professor Emeritus Marshall Tulin (University of California – Santa Barbara) on “Prospects for High Speed Marine Transport in the 21st Century,” Prof. Larrie Ferreiro (Defense Acquisition University) on “Ships and Science: Naval Architecture from the Age of Sail to the Industrial Age,” Professor Emeritus Horst Nowaki (Technical University of Berlin and Max Planck Institute) on “Leonhard Euler and the Theory of Ships,” and Prof. Ronald Yeung (University of California at Berkeley) on “Modeling Viscosity in Wave and Ship Problems.”

Our faculty’s research portfolio is expanding beyond the more traditional thrust areas involving hydrodynamics, structures, and dynamics. In the following pages, you will read about the highlighted projects of VIVACE (Professor Michael Bernitsas), Flying Fish (Professor Guy Meadows), and the all-electric ship (Professor Jing Sun). Also highlighted in these pages are two of the department’s younger faculty, Assistant Professor Ryan Eu-stice and Assistant Research Scientist David Singer. Ryan and David have joined a very select national group of young faculty by winning two of the prestigious 2007 Office of Naval Research Young Investigator Awards (ONR - YIP).

In 2007, the department welcomed two new research faculty members: Assistant Research Scientists, Dr. Kevin Maki and Dr. Amin Wang. While we have added to the younger end of our faculty, we regrettably acknowledge the retirement of a department icon: Professor Michael Parsons. After 35 years of dedicated service to the College of Engineering and NA&ME, Mike will be leaving the comfortable Mid-western environs of Ann Arbor for beach life in Oregon. We wish Mike and Sandy Parsons well.

Enjoy this edition of the Nautilus. Use it as an excuse to stop in and visit us sometime. You are part of the Michigan family and we would like to hear from you.

With Best Regards,

The tinkle of wedding bells!

The ancient mariner Harry Benford has discovered that being a widower is no fun so he has boldly sought out a charming widow, Kathryn Enright, to reinstitute with him the pleasures of matrimony. With degrees in physics from UM and Wayne State, Kathryn enjoyed a successful career with IBM. Two years ago, facing a bout with cancer, she moved to Ann Arbor for treatment (which succeeded) and concurrently became one of Harry’s neighbors at Glacier Hills, a cradle-to-crematorium retirement community not far from UM’s North Campus. They were married at the end of August in a families-only ceremony. Anyone who may feel an urge to send a wedding gift should be aware that such thoughts should be thoroughly suppressed. Personal visits, on the other hand, would be thoroughly welcome. (This news of a Significant Event composed by the happy bridegroom himself.)

The spring/summer Nautilus will feature a report on this year’s UM-NA&ME alumni banquet at the annual SNAME meeting and Harry Benford’s 90th birthday celebration. If you would care to share your favorite Professor Benford memory, drop us a line.
CURRENT RESEARCH-Professor Michael Bernitsas

VIVACE is an acronym for Vortex Induced Vibration — Aquatic Clean Energy, a project of our Professor Michael Bernitsas. The “VIV” part should be familiar to every reader, since it is a phenomenon encountered with solid bodies over which a fluid current is flowing. Indeed, your house is likely to vibrate as the wind from Hurricane Something flows over it — or the anchor cable of your yacht is likely to vibrate noticeably if you have anchored it in a strong current. To those with a taste for music — as well as for physics — the term “aolian harp” may be familiar, it being a harp whose strings vibrate in musical tones as a strong air current blows over them.

Then there is the memory of the unfortunate Tacoma Narrows Bridge that was destroyed back there in November 1940 by the resonance of its structure with the vibration caused by wind flowing over its suspension cables. No small amount of energy was required for the destruction of a large suspension bridge, a circumstance that now suggests a method of extracting the winds’ kinetic energy for useful purposes. (Not by designing bridges for the Big Bad Wolf to blow down, please!)

Of course, a reader will think, “Sure, windmills!” Sure, windmills. Or if the flowing fluid is a liquid, you will think of hydraulic turbines. However, experience shows that the flowing liquid — a tidal current, perhaps — should have an average speed of at least six knots to drive an economically viable machine that operates as a turbine. (The six-knot judgment is that of the Electrical Power Research Institute.)

But the VIV phenomenon… slender objects of circular cross section, ranging from fishnet filaments to nuclear reactor fuel rods, as well as large-diameter objects such a cooling towers, can be excited by the vortices that shed from their surfaces, leaving behind some of their kinetic energy to cause the solid object to vibrate — to suffer VIV, you might say. In essentially all applications this vibration is unwanted, just as nearly all adventitious vibrations are. But with measures to maximize the vibratory amplitude, and to feed the resulting mechanical energy to an electrical generator, the possible result is usable energy. As this is written, the Bernitsas-led team has designed VIV models whose vibration amplitudes have reached 2.7 diameters, while data published on the phenomenon show maxima of no more than 0.4 diameters at the high damping required for mechanical energy extraction.

Meanwhile, steps are underway to develop commercial applications. Nautilus will bring you the later news if the plodders at the New York Times or the Wall Street Journal haven’t beaten us to it. And meanwhile again, you can learn more at www.vortexhydroenergy.com.

Two illustrations follow. The first shows an array of vibrating rods that will be tested in the Detroit River, where the current is less than two knots, and hence unsuitable for exploitation by turbines.

The second illustration shows estimated busbar costs for a number of energy sources. Sure, the projected cost of VIVACE appears to be somewhat higher than that of coal, in particular, but reflect that natural water interacting with clean mechanical devices doesn’t contribute to acid rain, global warming, and similar bad things.
CURRENT RESEARCH-Professor Jing Sun

Professor Jing Sun’s research interests lie at the intersection of dynamics, control, and marine power systems. She is focusing on developing advanced marine control technologies through theoretical, numerical, and experimental exploration. Her group receives support from ONR, NSF, U.S. Army, Ford, and Toyota, on research activities ranging from modeling and control of fuel cell systems for shipboard applications, optimization and dynamic reconfiguration of integrated power systems (IPS), to coordinated seakeeping and maneuvering of vessels in seaway, and real-time simulation of complex dynamic systems.

Since joining the NA&ME department in the fall of 2003, Professor Sun has brought a new spectrum of research projects and expertise to the department. Her research on fuel cell systems focuses on the feasibility study of integrated fuel cells and fuel processing technologies for shipboard systems. In particular, she and her graduate students are exploring the “hybrid” system concepts, aiming at leveraging the complementary features of high temperature fuel cells and conventional gas turbine generators to develop clean, reliable, and highly efficient marine power plants. Through tight thermal integration and innovative control implementation, the systems can serve shipboard power and heat needs using a single fuel source, thereby offering a combined heat and power (CHP) solution.

All-electric ships and their enabling IPS technology present new opportunities for advanced control application. Given the reconfigurable advantages of the IPS systems, the real challenge in capitalizing the IPS benefits is to develop shipboard power management systems that can dynamically and robustly optimize the system performance according to real-time operation scenarios. Professor Sun’s group is focusing on developing effective optimization-based control algorithms for shipboard power management systems, with a particular emphasis on enforcing hard and soft constraints. Similar control techniques are also critical for ship motion controls. As an active member of the Multi-disciplinary University Research Initiative (MURI) team, she is developing control schemes and computationally fast algorithms to determine the optimum path of a vessel through a time-varying wave field based on specific vessel response constraints.

In addition to model development and algorithm investigation, her group is also developing tools to address the simulation needs for highly complex systems. With the support from ONR DURIP (Defense University Research Instrument Program), a 9-node real-time simulator using the Opal-RT system has been established in the Real-time Advance Control Laboratory (RACELab). The system is capable of not only real-time simulation, but also hardware-in-the-loop simulation and rapid control prototyping.

A hybrid solid oxide fuel cell (SOFC) and gas turbine power system with integrated fuel reforming: a system concept that Professor Sun’s group is working on to evaluate its feasibility for shipboard applications.

Sun’s research group, From L-R, members are from the NA&ME department unless otherwise noted: Zhen Li, Vasilis Tsourapas, Reza Ghaemi (EECS), Yanhui Xie, Chris Vermillion (EECS), Charles Lu, Kurt Sacks, Gayathri Seenumani (MECH), Handa Xi, Professor Sun. Not pictured: Amey Karnik (MECH), Jian Chen, Soryeok Oh
FROM THE DESK

Editor in the canyon

Attached pic (under “Editor’s T-shirt) shows your editor catching his breath (i.e. gulping air — observe open mouth) while on a hike with a mean bunch of Bisbee AZ sports persons who call themselves “The Javelinas.” Location is the upper end of Sandy Bob Canyon, which is... well, you don’t really need to know, except editor advises humans who are accustomed to breathing at sea level to stay out of places like SBCanyon, which leads you up to 7,000 feet or so. Yes, some oxygen is up there, but it’s few and far between.

Editor’s T-shirt

Can you read the text on the front of the relaxing editor in nearby pic of him in Sandy Bob Canyon?

A bit of help, perhaps: the shirt-text says “Par Avion — Michigan’s Only Fly-In Golf Course.” We reveal that he designed the shirt’s message himself, and that no one but he knows the story of Par Avion. The curious often ask, and receive a reply in gruesome detail. But and however, since you are too far away to do that, he gives you a summary of the story, following.

Par Avion was located within the dense forest that once stretched westward from the city of Alpena in northern Michigan. (Note the past tense, and note that past refers to the 1920s.) The course was built and owned by a group of wealthy Chicago men — men so wealthy but with so little leisure time that they owned several Ford Tri-Motors to hurry them back-forth to their golfings.

The time was late 1920’s, a time when the “Tri-Motor” (from its three engines) was a common passenger aircraft of, built by the Ford Motor Co. The club was very private and very exclusive, and in consequence the airstrip that accommodated the planes was disguised as part of the golf course. Landing for those tri-motors only, and effected only by pilots who knew which apparent golf hole was really the airstrip.

And an additional restriction — important to our story — membership in Par Avion was for Men Only! No female guests! Not even any female visitors!

Ah, but fatal circumstance: the wife of one of the members was a golfer, and she also was an early aviatrix (Funny word? You can look it up). Also — fatally also — she resented being barred from playing at Par Avion. Resented, resented until one day she jumped into her plane, golf clubs beside her, vowing to show those selfish/chauvinist/stupid men how selfish/chauvinist/stupid they really were.

Wife of chauvinist etc knew the approximate location of the course (we think her husband talked in his sleep), and with that in hand, the place was easy to find, what with being a large cleared area in an extensive forest. She found it, she circled low, looking for the landing place. Aha! There, about to tee off on the first hole, was her selfish/chauvinist/stupid husband! But him, looking up at the sound of her engine... Oh, good grief, it’s... horrors, it is! I’ll be disgraced... laughing stock, jeered by my buddies, and all that!

He waved, and frantically, pointing toward Chicago. Go back, go back, fool woman!
Horst Nowacki

Many of us, both faculty and students, remember Horst Nowacki, him (and his wife Elfi) coming to Ann Arbor from Berlin to augment our faculty for several years. Late 60s, early 70s? We could look it up.

Meanwhile, Horst honored us with a visit, 13-18 April of this very year, as Distinguished Lecturer, his task/honor being to speak on “Leonhard Euler and the Theory of Ships,” one of the three Peachman Lectures to be given by guest speakers during the recent Winter Term.

Other Peachman sponsored lectures were given by Marshall Tulin (Prospects for High Speed Marine Transport in the 21st Century) and Larrie Ferreiro (Ships and Science: Naval Architecture from the Age of Sail to the Industrial Age), and — to be sure — they deserve equal

We would like to extend our heartfelt condolences to the families and friends of alumni that we recently learned have passed away:

Vincent A. Baglione, BSNA 1951
passed away 3/31/02

Richard Broad, BSNA 1949; MSE 1956
passed away 8/16/07

William Brown, BSNA 1942
passed away 3/12/07

Walter J. Butler, BSNA 1942
passed away 1/22/07

Barton B. Cook, Jr., BSNA 1943
passed away 5/7/07

Belton Cooper, BSNA 1946
passed away 5/26/07

Masasuke Kawasaki, MSE 1953
passed away 6/8/07

Kenneth K. Kimball, BSNA 1940
passed away 6/4/07

Ying-Kei Mok, BSNA 1951
passed away 7/22/07

Frank W. Trevorrow, BSNA 1923
passed away 9/18/07

G. Guy Vía, Jr., BSNA 1947
passed away 10/25/06

Albert Wickham, BSNA 1954
passed away 2/18/07
THE DESK (continued from page 6)

Fool woman-wife thought that her beloved was pointing to the hole that was used for an airstrip. But he wasn’t, and although the place he inadvertently pointed to was indeed a golfer’s “hole,” it was only a par-3 hole! Too short, too short! Too short and too bad!

Upon landing in this too-short and really-wrong place, the plane could not be braked in time. Too bad, a fatal too bad! The plane careered into the woods beyond that par-3 green. Crashe smashedo — it burst into flames, killing (sob!) the intrusive woman. The resulting forest fire destroyed 20-some square miles of woodland (sob!) — and Par Avion clubhouse as well. Par Avion goodbye: it was never rebuilt. Given something like 75 years to grow, the trees and undergrowth have long since come back to obscure all traces of golf course, clubhouse, and aircraft — except in the minds of a few imaginative newsletter editors.

Want to know more? Come to the editor’s hideout in northern Michigan on 31 September — any year you choose — and he will take you on a hike to show you the remains of the fated aircraft, lying beneath the forest detritus — somewhere. Bring your own lunch.

New buildings on North Campus

If you are an alum who hasn’t been to AA in the past 10 years, say, then it’s time you dropped by just to gawk at the new buildings. The Medical Center seems to be where the big action is, what with a new and much bigger Mott Women and Children Hospital about to rise out of a big hole in the ground. Main Campus isn’t far behind, what with Frieze Building being torn down, all to be replaced by a dormitory — also in evidence only through a big big big hole.

Then there’s the North Campus, home to our beloved NA&ME. Down the hill, and across the street from the Bentley Library is Lurie Biomedical Engineering. Up the hill, facing Hayward near where it ends at Murfin, is Computer Science and Engineering. On Beale, sort of blocking the view from the street of the Lay Automotive Lab is an almost finished addition to the EECS building. A sign lying in the mud says it’s to be a solid state electronics lab.

Biggest of all — construction almost finished—is the Walgreen Drama Center, sort of behind the Pierpont Commons. This monster-osity is being built on the (former) site of a (former) large and convenient parking lot. Compensation for loss of the lot comes from allowing parallel parking on Bonisteel Blvd. Cynics say that this street should be renamed Bonisteel Parking Lot, since its remaining two lanes are too narrow to deserve the “boulevard” label. (Bicycling professors no longer ride on Bonisteel because they are afraid of being squashed between a U bus, say, and a parked car.)

Why “monster-osity?” Well, this Walgreen not-a-drugstore-thing is sorta big — and in the opinion of your editor — is the ugliest building on all of the several campuses of the University of Michigan. Competing opinions speak of how its box-like upper stories glow at night from some kind of softly soothing internal light, making everything really nice. (Your editor claims that he, also, has a softly soothing internal light, but adds that it’s well hidden by his Cloak of Modesty.)

And speaking of parking, where do you perform that feat when you visit NA&ME? Best to call (734-764-6470) a week in advance to ask for a map.

Editor celebrates 80th birthday!

Celebrate? Celebrate going over the hill, the edge of which you are hanging on to with one fingernail. Bleep 80th birthdays! You gotta get outa bed just like any other day. Face the world. Eat, drink, and be nourished. Go to the office.

Office? Yes, if Mr. Eighty is the editor of a distinguished alumni newsletter, the like of which you are reading at this very moment, he better be off to the NA&ME office to interview important visitors, write up nice things about the achievements of them
THE DESK (continued from page 8)

that are still “active,” or are trying to look that way, and to invent a few tall tales to liven up the newsletter. (Tall tales be damned! The one about maybe crawling under a certain female student’s bed is totally factual. Ol’ Eighty was tempted to embellish that at bit… but no, Nautilus does have certain standards. Ok?)

Phantastic Photo

Nothing really fantastic, though it does record a historic moment in our trade. Pic was taken by your editor in 1952, him being 55 years younger than at present, and him aiming a long-gone “Brownie” camera over the stern of the liner United States, on trials out of Newport News Shipbuilding, as the ship performed a turn at max speed (38 plus knots). “Leaned over” a bit, eh? (Inapt term found in local newspaper soon after.)

NOWACKI (continued from page 7)

Then, in apparent sympathy with the professor’s plight, a male student came to the professor, relating that he had endured a similar problem with Ms Procrastinator, and had resolved it by sneak-thieving into her apartment while she was absent. He told of how he had asked a complaisant building superintendent for the key, entered, searched, found his stuff, then walked away with his problem solved.

So, good idea! But let’s seek the assistance of Professor Woodward. Why him, innocent him? Because he was at the time advisor to undergraduate students, and hence (in the Nowacki view) responsible for the conduct of those students. Sure, and in consequence he was obviously the guy who had the duty of sneaking into recalcitrant women’s apartments while they were absent.

But oh good grief, Horst! Suppose she comes back while… well, maybe I’m searching under her bed, say, and…. Well, double good grief! Headlines in Michigan Daily: Naval Architecture Professor Arrested by AA Police! Apprehended Under Woman Student’s Bed! President of university says “We do not — and I mean NOT — tolerate such conduct on the part of our faculty! In addition to the penalties prescribed by Law, we will enforce strict disciplinary…”

Wise professor was NOT caught under female student’s bed because he weaseled out of the assignment by claiming severe allergy to underbed dust.

Nonetheless, a happy ending, at least for Prof Nowacki. The recalcitrant female person returned the priceless box of cards — and quickly, at that — after conniving professors thought of certain academic rules that might be enforced against her, and that did not — repeat Did Not — carry any hint of sexual misconduct nor gender favoritism in their application. (“Gender favoritism” — do we really have something called that now?)
Secretary of the Navy

CONTINUED FROM PAGE 2

Donald C. Winter is the 74th Secretary of the Navy, sworn into office on Jan. 3, 2006. Dr. Winter earned a bachelor’s degree (with highest distinction) in physics from the University of Rochester in 1969; also where he met his wife Linda. He received a master’s degree and a doctorate in physics from the University of Michigan in 1970 and 1972, respectively. Dr. Winter actually had an office in the NAME building during his doctoral studies at Michigan. Several other pictures from his prestigious visit to the NA&ME department are displayed below and on the adjoining page.

Senior Final Design Presentations

WE PROUDLY LIST OUR RECENT GRADUATES

December 2006 BSE Recipients
Kang, Hock Seng

December 2006 MSE Recipients
Chen, Chen
Su-Shan, Tessa Gan
Hossenlopp, David
Siddharth, Kumar

April 2007 BSE Recipients
Adailami, Adzrul Hakim
Brown, Dannelly
Butler, Christopher
Crabtree, James
Ellingson, Brandon
Falk, James
Flemingloss, Craig
Freimuth, Justin
Hatfield, Willie
Idzenga, Richard Mark
Kemnitz, Johan
Madsen, Robert
Miller, Nathan
Moraski, Lauren
Morath, Kevin
Nelson, Gregory
Novinc, Kate
Pokora, Stephen
Quick, Matthew
Simic, Ivan
Vane, Andrew
Widhalm, David
Wyman, Sandra
Zajac, Thomas

Post Grad Plans
(if known at time of publication)
NA&ME Masters Program
Returned to China
Returned to Singapore
Bath Iron Works
American Bureau of Shipping
Returned to Malaysia
NASSCO
NAVSEA - Carderock Div.
Bath Iron Works
NAVSEA
Chevron
Christensen Shipyards
UM Grad School
Northrop Grumman
Ship Systems
Naval Industries Northwest
NA&ME Masters Program
NA&ME Masters Program
Alion Sciences - JMA Maritime Sector
Naval Surface Warfare Center - Carderock Div.
NA&ME Masters Program
Alion Sciences - JMA Maritime Sector
General Dynamics / NASSCO
ICI Services, LLC
Alion Sciences - JMA Maritime Sector
American Bureau of Shipping
General Dynamics / NASSCO
Naval Surface Warfare Center - Carderock Div.
U.S. Navy
Gibbs & Cox

CONTINUED ON PAGE 11
April 2007 MSE Recipients

Bandaru, Aswin
Habayeb, Amier
Jorgensen, Mark
Kang, Hock Seng
Kim, Dae Hyun
Wilutis, Erik
Wozniak, Chris
Zhang, Xinshu

April 2007 MEng Recipients

Bruno, Corey
Burgess, Kenneth

April 2007 Ph.D. Recipients

Khalid, Muhammad
Li, Yaning
Szwalek, Jamison
Xi, Handi
Zalek, Steven

August 2007 BSE Recipients

Maxey, Austin
Keck, Michael

August 2007 MSE Recipients

Fleury, Tim
Gatbitt, Robert
Wdziekonski, Maciej
James Wolfe

August 2007 MEng Recipients

Phillips, Tracy

August 2007 Ph.D. Recipients

Zhang, Xinshu

Post Grad Plans

(if known at time of publication)

American Bureau of Shipping
Not known
US Coast Guard
Returned to Singapore
NA&ME Ph.D. program
ExxonMobil
U.S. Navy
NA&ME Ph.D. program

Knoll
U.S. Coast Guard

Pakistan Navy
NA&ME Postdoc
National Technological
Norwegian University
Emmeskay, Inc.
UM Marine Hydrodynamics
Laboratories

General Dynamics / NASSCO
CSC Advanced Marine

U.S. Navy
Pfitzco
Not known
The Glosten Associates

U.S. Coast Guard

Not known
Early stage naval ship design is characterized by uncertainty due to incomplete knowledge, under-defined specifications and the limitation of design analysis tools, particularly for more innovative concepts. If the uncertainty can be expressed within the fuzzy system, human designers will be able to make better decisions, thus increasing the speed of the early ship design process and increasing the probability of reaching globally optimal decisions.

Dr. Singer’s proposed research is important to the Navy’s need to not only develop design tools, but to develop methods and applications that will enable proper communication and negotiation of design information within the different disciplines in the naval design process. This is especially true in the system of systems design goals of the Navy, where the ambiguity and uncertainty of boundaries, interfaces and mission profile are the critical drivers that determine the potential success, or failure, of the total system.

Dr. Kevin Maki, a NA&ME University of Michigan Ph.D. graduate, has previously held positions as Visiting Researcher at INSEAN (Italian Ship Model Basin, Rome) and ONR Summer Faculty Fellow at the Naval Surface Warfare Center - Carderock Division, Bethesda. Kevin will be collaborating with Bob Beck and Armin Troesch on a variety of hydrodynamic projects, including CFD modeling, nonlinear seakeeping, dynamic structural loading, and yacht design and performance.

Dr. Aimin Wang graduated with his doctorate in Engineering Mechanics at Tsinghua University, China. He will be collaborating with Nick Vlahopoulos in the area of structural acoustics. Aimin has been previously appointed as UM Research Fellow and UM Research Associate where he put to good use his strong background in Engineering Mechanics (linear and nonlinear FEM and optimization analyses). He brings to the department considerable expertise in vibro-acoustic analysis.
Professor Mike G. Parsons is retiring, much to the regret of his past and present colleagues, and of his past and present students. Your editor, who has known all but a very few of the faculty that have served our department since the days of its founding by Mortimer Cooley, says that Mike clearly deserves the title of The Outstanding - outstanding in breadth and depth of learning, and in many of its other facets as well, such as the enthusiasm and ability to pass on that learning. We have reproduced parts of his “vitae” and be as impressed as those of us who have known him for many years.

Mike Parson’s degrees include: 1963 B.S.E in NA&ME from the University of Michigan, 1965 Certificate from Westinghouse Reactor Engineering School, 1969 M.M.E. in Mechanical Engineering from The Catholic University of America, and 1972 Ph.D. in Applied Mechanics from Stanford University.

Professor Parsons’ has held numerous professional positions:
- 1965-1969 Fluid Systems Engineer DLGN’s, Active duty U.S. Navy, Division of Naval Reactors, USAEC, and Naval Ship Systems Command (Code 08)
- 1963-1965 Assistant Project Officer for Surface Ships, Active duty U.S. Navy, Division of Naval Reactors, USAEC, and Naval Ship Systems Command (Code 08)
- 1997- Arthur F. Thurnau Professor, UM
- 1999-2000 Acting Director, Cooperative Institute for Limnology and Ecosystem Research (CILER), UM and NOAA
- 1995-1996 Acting Director, Michigan Sea Grant College Program
- 1991-1996 Associate Dean for Undergraduate Education, College of Engineering
- 1987-1992 Director, Michigan Sea Grant College Program
- 1982- Professor, Department of NA&ME, UM
- 1981-1991 Chairman, Department of NA&ME, UM
- 1977-1982 Associate Professor, Department of NA&ME, UM
- 1972-1977 Assistant Professor, Department of NA&ME, UM

New Courses Introduced at UM:
- NA 200: Introduction to NAME (one of four mini-courses), Fall 1975
- NA 330: Marine Engineering I (major revision), Fall 1972
- NA 330: Ship Power Systems I, Fall 1975
- NA 331: Marine Engineering II (major revision), Winter 1973
- NA 431: Marine Engineering I (major revision 2003) Fall 2003
- NA 431: Marine Engineering III (major revision 1973), Winter 1973
- NA 431: Marine Engineering II (new course adapted from old NA430/NA531), Winter 2003
- NA 463: Nuclear Propulsion of Ships, Fall 1973
- NA 470: Ship Design II (major revision), Fall 1984
- NA 470: Foundations of Ship Design (major revision), Fall 1999
- NA 530: Automatic Control in NAME, Fall 1977
- NA 531: Marine Propulsion Plant Vibrations, Winter 1976
- NA 570: Advanced Marine Design, Fall 1997
- NA 578: Concurrent Marine Design Seminar, Winter 1995
- NA 579: Concurrent Marine Design Team Project, S/S 1996

Through his tenure, he has chaired or co-chaired 17 doctoral dissertation committees, and served on 12 department committees, 17 college of engineering committees and 18 UM committees. Prof. Parsons’ showed exemplary service as a member of 34 national or international professional organizations, all the while, managing 45 grants or contracts in the department.

Parsons’ is credited with one patent, for his “Ballast-Free Ship System” and published four books or chapters in books. Additionally, Parsons’ published 81 articles, including his work in Journals, Transactions, Archives, and Conference and Symposium Proceedings.

Of course, you probably realize that many professors who retire simply continue to hang around, acting busy. At the moment we can’t tell of Mike’s plans, except that he will be relocating to Oregon to enjoy time with his family. But let us - alumni as well as colleagues - hope that he will continue to be with us for many more years.
SUMMER INTERNSHIPS: Our Students in the Field

As you alumni know, the department’s intern program plays a critical role in our students’ University of Michigan experience. Over 90% of all NA&ME undergraduates have had at least one internship during their undergraduate years.

In summer 2007, fifty (50!) of our sophomores, juniors, seniors, and graduate students took advantage of the program. Here is a sampling of six of those students’ reports, in their own words:

Chris Adams, who completed junior course work, interned with Military Sealift Command. Here he is touring the Oilier, USNS Grumman AO-195, after taking measurements prior to the installation of hatches on the flight deck.

Chris reports, “For the summer of 2007 I worked for Military Sealift Command (MSC) as a Naval Architect intern. I was located at the Headquarters for MSC which is in the Washington Navy Yard in Washington DC.”

“The task I was most involved in was a repair drawing for a shear strike on the radar ship Observation Island. This involved a lot of AutoCad work. I also did a lot of work with book called Trim and Stability books (T&S). These books help ship masters insure that they are traveling safely and maintaining stability.

Not all of the internship was in the office. For about three weeks I was out of the office going to various points on the East Coast and was able to go on five different types of ships that MSC operates. To accomplish this I went to Norfolk, Virginia, (Oiliers Patuxent and Kanawha) Baltimore, Maryland (Hospital Ship Comfort) and Charleston, South Carolina.

The final two weeks of my internships were by far the most rewarding. I was sent by my supervisor in DC to Charleston to help out and observe the overhaul of the USNS Patuxent. This vessel is one of MSC’s oiliers that does underway replenishment (UNREP) with navy vessels. I measured out deck area and I coordinated with HQ on a deck loading issue. I also ran errands and represented MSC for several ABS inspections.”

Scott Grost, who completed junior course work, interned at Navatek, Ltd, Hawaii.

Scott reports on his experiences in Honolulu: “I worked at Navatek, Ltd. for the summer. They are a privately-owned subsidiary of Pacific Marine who partners with Hawaii’s largest commercial ship repair and construction company, Pacific Shipyards International LLC. A large part of the work that Navatek does is research and development for the Office of Naval Research. They have a corporate office downtown Honolulu and do their construction at the shipyard on a pier in Honolulu Harbor.”

“I worked with two main people for the summer. One of them I worked with does most of the naval architecture for the company. I was able to help him with drawings using AutoCAD and become familiar with his AutoCAD setup.”
SUMMER INTERNSHIPS (continued)

with his 3-D models in Multisurf. I also did some minimal work with weights in Excel. The other person I worked with does a lot of work on the boat’s control systems and sets up a lot of the testing projects. I tested pressure transducers to make sure they still worked and also to calibrate them. I also tested some digitizer boards comparing actual voltages across the board to the application display. I performed a lot of the system installation and went on the sea trails where we actually took data. I used Excel to post process some of the data as well as made some visualization drawings of the hull bottom in AutoCAD.”

“Overall I was very satisfied with the type of tasks assigned to me for my internship. I was able to do work at a computer in a corporate office environment one day and get my hands black from dirt and grime the next. While I wasn’t necessarily learning theory I was learning very practical hands on knowledge that reinforced a lot of theory. I learned what things were and what the inside of a real hull is like and what an engine room contains. These are things that may not help me solve a math problem, but without being able to see, touch and ask, I would have little idea what parts were in real life and how they work.”

“As you can imagine, there was plenty to do outside of work in Hawaii. Within the first week I was there, I went spear fishing on the North Shore and was also able to learn how to surf. I didn’t attain ‘ripper’ status, but who knows, maybe you will!”

Lauren Kemink, who completed sophomore course work, worked with ConocoPhillips Marine in Houston.

Laura, a first-time intern, reports, “I worked with a number of Michigan graduates, which made things very fun. My supervisor, Bob Levine (’74 BS NAME and ’75 MSE) shared lots of his wisdom with me. They set up a mentor for every intern at the company. My mentor, another Michigan graduate, was very helpful at explaining tasks I was asked to do, how to work programs and just general around the office kinds of things. It was definitely helpful to be working with other Naval Architects that had lots of advice for classes and careers. Many lunch periods were spent telling school, shipyard and other work stories that really helped me understand the job I would be getting when I graduated.

I had several small projects of finding and reading drawings for a shipyard with DMO tugs and barges. My larger projects included RF interference at U.S. Oil, Diurnal IG pressure analysis, and SOx emissions reduction estimates. In particular, I calculated estimates of reduced SOx emissions for Polar vessels in Alaskan waters assuming a switch to low sulfur fuels prior to: 2012 when EPA regulations for marine vessel emissions come in to force and after 2013 when SECA regulations come into force.

I was able to calculate the fuel used per trip and estimate the reduction in Sox emissions and subsequent cost to the company.”

Johan Kemnitz, a graduate student who completed his B.S.E in 2007, interned with JMS Naval Architects in Groton, CT. He is shown helping with inclining tests on the replica of the schooner Amistad. The Amistad is getting ready to do a trip around the Atlantic Ocean, serving as a floating museum for the story of the freed slaves.
Johan writes, “The Amistad Inclining project was especially rewarding, as I had the opportunity to visit the schooner Amistad while docked at Mystic Seaport, CT, on two occasions. Being able to explore the Amistad and the Seaport was certainly a high point of my internship. It was also a good learning experience in that it illustrated how many unforeseen problems must be addressed, even during procedures that are fairly well established, such as an inclining.”

“I was also involved in projects, including vehicle-passenger ferry purchases, amphibious truck inclinings, R/V repowering and conversion, ATB pilothouse design, SyncroLift installation, tether analysis for two-body ROV system, and mini-short course on naval architecture principles to 7th graders.”

“The ATB aluminum upper pilothouse project presented a variety of new challenges, as I had never developed a complete set of structural drawings before. I learned a great deal about how to design a structure and how to present information and details in drawings so that they are easy to understand. As part of the design process, I also completed all the necessary calculations related to the sizing and weight of the new structure, as well as checks on the expected loads and safety factors of the support structure. It was very interesting to see how much of what I had already learned came together in the process and also how my understanding of the various subjects improved as a result.”

Kevin reports, “During the summer of 2007 I chose to work at Chevron Shipping Company (CSC) as a Hull and Systems Engineering Intern in Chevron’s San Ramon, CA office. I was assigned to the Marine Services Group (MSG) within CSC, which is tasked with providing operational and technical support to CSC’s fleet of ships as well as customers within the Chevron Corporation. My internship at Chevron focused on three main areas, company familiarization, personal development, and technical development.”

“The best experience of the summer was the operational exposure I was able to experience aboard the MV Sirius Voyager. I spent six days aboard the Sirius Voyager, a 155,683 DWT, 1.15 million barrel trading tanker. We left from Chevron’s Richmond Long Warf located in San Francisco Bay, went under the Golden Gate Bridge and out into the Pacific. From there we cruised down to Chevron’s Pacific Area Lightering (PAL) operation off the coast of San Diego. We transferred oil from the TI Africa, a V-Plus, 441,655 DWT, 3.2 million barrel tanker, and received 700,000 barrels of oil.”
SUMMER INTERNSHIPS (continued)

transfer, we cruised back to San Francisco Bay and anchored in San Francisco Anchorage 9. During the trip I was given access to the bridge, the deck and the machinery spaces, I was able to walk around and talk to the operators to gain insight into how a ship actually works. It also gave me perspective into how design decisions have a lasting impact on the ships operation. The trip was an incredibly enlightening and rewarding experience.”

“Major technical projects that I was involved with included the Corporate Engineering Standards (CES) project and the Coal Harbor Refueling Barge Project. I was involved with the specifications for steam generating plants, steam turbines, marine diesel generators and lubricating oil systems. For each specification I was involved in researching technical standards, assisting with drafting of sections, participating in feedback review meetings and incorporating the feedback into the documents. This project gave me the opportunity to travel to the Houston office twice during the summer to participate in the feedback review meetings. These projects gave me the chance to learn about the technical standards, specification and technical writing, and about individual systems and their requirements.”

“The Chevron Corporation is one of the world’s largest integrated oil and gas companies; it has operations worldwide and is based in San Ramon, CA. My experience at Chevron and CSC was extremely rewarding and provided me with valuable insight into the energy industry as well as commercial shipping operations and management.”

 Xiaoyan Yan, a graduate student, worked at Technip USA. She had this picture taken at the yard near Corpus Christi, Texas, where the Tahiti spar had been just completed.

 Xiaoyan writes, “I was assigned to a project on the supply vessel and spar collision study. Conventionally, they use finite element analysis to tackle this nonlinear problem and it was very time-consuming. My supervisor wanted me to find some easier and faster method to predict the response of the structure under the collision event, while still taking into consideration the facts such as different collision locations, the size of the supply vessel, the speed of the vessel, etc. After referring to the literature on this topic and talking to my colleagues and experts, I came up with analytical and semi-empirical formulations to model the structural collision behavior and validated the results with nonlinear, incremental static analysis performed by ABAQUS. The new method uses the linear model to predict the nonlinear behavior of the structure. It is fast and effective. In the end of my internship, I made a presentation on this project during a department “Lunch and Learn” and got very positive feedback.”

“Another project that I worked on was the strength and fatigue analysis of the BP Mad Dog spar future umbilical pull-tubes and supporting structures under different loading conditions. I used the Finite Element Method (FEM) software SESAM to establish the model and run the analysis. It was my first time to use the software and I was proud to not only run the examples but to establish models and get results of real projects. During this project, I worked closely with other group members as well as the people from other departments and other companies. I enjoyed working with different people as a whole team and learned a lot from them.”
ALUMNI WEEKEND!!

October 11-13, 2007

Several years ago the department started a concentrated effort to bring back our most valued supporters. We are continuing this program by specifically inviting alums on the five-year increment. This year, letters went out to alums from 2002, 1997, 1992 and so on. OF COURSE, ALL ALUMS ARE WELCOME AND INVITED FOR ANY YEAR!! For those of you who still recall your engineering mathematics, this was known as the “Reunion of the NA&ME classes of 2007 minus 5*n” where “n” is an integer between 1 and 14. Once you see how the Department and North Campus have grown, I am sure we will excite you enough that you will want to return every five years for the reunion.

Please contact Kay Drake at kdrake@umich.edu or (734) 936-7636 or the Michigan Engineering Website http://www.engin.umich.edu/alumni/events/weekend/ if you would like more information for future alumni weekend events.

The picture below are the alumni in attendance at the Alumni Weekend luncheon held in the department this year on Friday, October 12.

Back Row, L-R - Mike Bernitsas (f); Paul Cojeen ’67; Tassos Perakis (f); Frank Veit ’77; Armin Troesch ’69 (f); Tom Hoxie ‘82; Kathy Benford (guest)
Middle Row, L-R - Jaideep Sirkar ’82; Steve Kemp ’69; James Sandison ’71; Ann Rundle ’77; Bob Beck ’65 (f); Anantha Subramanian (guest); Mike Parsons (f) ’63.
Front Row, L-R - Tinku Sirkar (guest); Ivan Kirschner ‘82; Harry Benford ’39 (emeritus); Margaret Kirschner (guest); Preema Subramanian (guest).

**(f) denotes departmental faculty member

GO BLUE!!!!
Professor Ronald W. Yeung, from the Department of Mechanical Engineering, University of California at Berkeley and current National Advisory Board member, presented a seminar on October 26, 2007, sponsored by the Peachman Lecture Series entitled, “Modeling Viscosity in Wave and Ship Problems.”

Abstract: A plenary view is given on the development and application of a vortex method developed at UC Berkeley for modeling separated flow in a free-surface environment. Given the name of Free-Surface Random-Vortex Method (FSRVM), the methodology can efficiently solve Navier-Stokes flows in the presence of surface waves, using a stream-function and vorticity formulation. Requiring no field discretization, FSRVM has no artificial viscosity and can reproduce fully nonlinear inviscid-fluid solution for comparison purposes. Illustration is made for problems in the following areas: vortex-induced vibration of cylinders, dynamics of finned bodies, roll damping from bilge keels of ship sections. Ongoing development and potential application to complex three-dimensional hull forms are also previewed.

Send electronically a resume, statement of teaching interest, statement of research interest, and the names of four references to: kdrake@umich.edu. Please include in the subject line NA & ME Faculty Open Position. Alternatively, you may mail the above documents to:

Ms. Kay Drake, Assistant to the Chair
Naval Architecture & Marine Engineering
University of Michigan
2600 Draper Drive
Ann Arbor, MI 48109-2145

The candidate interview selection process will be initiated on the 15th of January 2008.

The University of Michigan offers an active Dual Career Assistance Program.

The University of Michigan is a Non-Discriminatory/Affirmative Action Employer.
The Marine Hydrodynamics Laboratories are flourishing down on Central Campus, with the addition of Research Fellow Steve Zalek as well as Kris Owens who joins the MHL as Office Administrator, replacing Kristine Wielopolski. The MHL continues to build its capabilities and client base for experimental work in the physical modeling basin, field research programs and many NAME research and educational projects.

Ryan Eustice, recipient of a 2007 Office of Naval Research Young Investigator Award (YIP) has put this award to good use toward the purchase of two Automated Underwater Vehicles (AUVs). The AUVs were recently delivered to the MHL for a shakedown cruise in the tow tank prior to their Great Lakes Deployment. The addition of Ryan’s expertise in underwater robotics, surveying and mapping as well as these two vehicles, the first of their kind to be used in the Great Lakes, greatly enhances the department’s existing underwater research capabilities.

The MHL physical model basin has been extremely busy for the past year with a wide range of testing programs and educational activities with tank utilization near 100%. The tank’s carriage motors, drivers and controls were completely upgraded this August to now be a “smart carriage.” The past year has seen commercial projects involving Sea Ray, Honda Marine R & D, Burger Boats Inc., Donald L. Blount & Associates, VT Halter, NAVAIR, SeaLandAire Inc., ARES Custom Yachts, The Glosten Associates, Marine Design Dynamics, Concurrent Technologies Corporation, Maelstrom Pump Jet, Bristol Harbor Group, Inc. and others performing a wide variety of testing programs.

In addition to the commercial projects, the MHL supported Professor Jing Sun and several members of her research group with investigations on an autonomous electric ship and Professor Mike Parsons and Professor Miltiadis Kotinis (SUNY Maritime College & NA&ME PhD grad) with testing their as part of their ballastless ship program, “Seaway Sized Bulk Carrier Model for Hydrodynamic Optimization of Ballast Free Ship Design.” The MHL also continues to support many of the academic courses taught by the NA&ME department, including ENG100, ENG 110, NS 201, NA 260, ME 450, NA 490, NA 491, NA 522 and NA 590. NA 260 is new to the lab this year, taught by Assistant Research Scientist Dave Singer also a YIP recipient. The NA 260 students were instructed in welding by MHL Engineering Technician Joe Wild. The MHL also provides tours for many different organizations and prospective students in support of the college mission and departmental recruiting. Tour groups include: Women In Science and Engineering (WISE), Society of Women Engineers (SWE), Engineering Summer Symposium for Scholars (ESSS), Minority Engineering Program Office (MEPO), Detroit Area Pre-College Engineering Program (DAPCEP) and several local and regional high schools, middle schools and grade schools. This November the MHL will host six Undergraduate Research Opportunity Program (UROP) mentors and their 150 students for a tour of the lab facilities.

The 28th American Towing Tank Conference (ATTC) was held at the University of Michigan on August 9 and 10, 2007. The conference, organized jointly by the Department of Naval Architecture and Marine Engineering and the Naval Surface Warfare Center Carderock Division (formally the David Taylor Model Basin), followed the Numerical Ship Hydrodynamics Conference which was held August 6-8, also in Ann Arbor.
The ATTC promotes the development of towing tank and water tunnel techniques and the exchange of ideas for the advancement in the use of model testing to solve problems of interest to the marine community. The MHL presented their present state of the art in testing. The intent is to promote an exchange of new ideas and approaches in a workshop style for the general benefit of the ATTC community.

Guy Meadows led the charge to a recently awarded contract with the Defense Advanced Research Projects Agency (DARPA) to develop an autonomous buoy for persistent surveillance in the open ocean. The vehicle, which we call the “U of M Flying Fish,” is a collaborative effort with faculty from UM Aerospace Engineering and Electrical Engineering and Computer Science departments, and has given us the opportunity to pull together a great team. The idea of this vehicle is that it quietly drifts to the edge of its watch circle, harnessing and harvesting energy from sun, wind, and waves as it goes. Once it reaches the edge, it takes off like a seaplane and flies to the other side of the circle where it lands and begins the drift cycle again. For a small vehicle like this, most waves look like those in “the perfect storm.” By flying over them we minimize energy used fighting the waves and maintain a long-term energy balance (i.e. no refueling required). The Flying Fish team just recently returned from Phase One open ocean sea trials off the coast of Monterey, California. The team is excited to report that their goal to demonstrate the first, fully autonomous take off, flight and landing of a small sea faring vehicle was an overwhelming success, with 22 autonomous flights over the two day trial.

The MHL continues its efforts to expand the Grand Traverse Bay Observing System. Station 1, an environmental buoy was deployed for the third year in the west arm of the bay, as well as Station 2, a land station located at the Maritime Academy’s pier in Traverse City. The data collected from these two stations is available in real time on the MHL website www.engin.umich.edu/dept/name/facilities/mhl/ is now available on the National Data Buoy Center website www.ndbc.noaa.gov, just look for buoy number 45020 (Station 1) or land station GTBM4 (Station 2).

In partnership with Michigan Tech University Research Institute, the MHL has been developing a small fleet of Automated Lagrangian Water Assessment System (ALWAS) buoys. These buoys measure a variety of water quality parameters such as dissolved oxygen, turbidity, pH, ORP, conductivity, nitrates, chlorophyll, depth and temperature while moving along the water surface. The buoys also contain a GPS package which enables them to record the time and location of each data point. All data is instantly Geographic Information System compatible allowing for nearly instantaneous data display on digital maps. The buoys have a rigid retractable sail, so they can either sail or drift with the current.
One of the buoys was developed with a remote control propulsion system for targeted sampling. The buoys were rigorously tested last summer during a deployment in the North Slope of Alaska as part of the North Slope Science Initiative (NSSI). In collaboration with the Bureau of Land Management, Department of Energy and ConocoPhillips, the buoys were deployed by helicopter in 16 separate surface lakes as well as the Coleville River. The data will be used to determine the impact of the construction and usage of ice roads on these surface lakes. The MHL is currently developing an “ALWAS Jr.,” a smaller more portable version of the originals for deployment on the North Slope this spring.

As the Great Lakes Chapter for the Alliance for Coastal Technologies (ACT), the MHL is responsible for designing and testing various coastal observation technologies. This year the MHL along with three other ACT partner sites were involved in the demonstration of the latest advances in nutrient technology. Nutrient sensors provided by American Ecotech, Satlantic, Wetlabs and YSI were deployed in the Chesapeake Bay, in Monterey Bay, Seward Alaska, as well as in the mouth of the Clinton River in Harrison Township, Michigan. The sensors were deployed for a month at moored deployments, measuring the phosphate, nitrite and nitrate levels in the water. The demonstration report will be made available to the public in the spring of 2008.

As you can see the MHL has quite a diverse schedule of projects. Although those at the lab keep a busy schedule, they continue to pursue new ideas and unique and challenging projects as well as welcome new partners to join the MHL team.

AUVSI* - Autonomous Surface Vehicle Competition

The Autonomous Surface Vehicle Team (ASVT) is a new student project at the University of Michigan. The team objective is to build an autonomous water-surface vehicle for competition while innovating, learning, and behaving in a fun and professional manner. The team faculty sponsors are Dr. Ryan Eustice and Dr. David Singer.

The objective of the Autonomous Surface Vehicle Competition is to build a water-surface vehicle capable of navigating, avoiding obstacles, and performing other mission-critical tasks without any human interaction. Meeting this objective requires expertise from multiple fields for tasks such as hull design, sensor integration, control system design, and capital procurement. The team will compete is three challenges; design, navigation and search and rescue. The competition will be held in May 2008.

*Association for Unmanned Vehicle Systems International
Mortimer Cooley

We know who this was, right? A building on the North Campus is named for him. He was engineering dean. His persuasions applied to the regents during the summer of 1899 led to the founding of the NA&ME department, then to the hiring in 1900 of Herbert Sadler our first professor. Then the West Engineering Building, then “The Tank”…. And here we are today.

So what has he done for us lately? Well, nothing, really, but Harry Benford dug out an ancient (well, June 1998) issue of Ann Arbor Observer in which was a story “Scholar-Sailors of the Spanish-American War.” A large group of UM persons, students, faculty, etc, volunteered for naval service, and together formed a large part of crew of USS Yosemite, an auxiliary cruiser converted from El Sud, a Morgan Line freighter. Yosemite accosted Antonio Lopez, a Spanish ship attempting to run the blockade of San Juan, PR. The enemy was unarmed, but escaped to run ashore at a point where it could be protected by the city’s harbor defense batteries.

Hostilities erupted. Many shots were fired by both sides. Yosemite participated, along with other American ships, until Lopez was a wreck on the beach.

No casualties aboard the Wolverine ship. Twelve months later our man was back in Ann Arbor persuading the regents re NA&ME. He then turned to the task of recruiting a faculty, and in June of 1900 received a letter from Herbert Sadler, expressing interest.

And so here we are.

And here is a pic of the smokey old tub Our Founder served:
NA & ME National Advisory Board Members

Edward Comstock--Engineering Fellow, Raytheon Integrated Defense Systems
John Couch--President/CEO, CM Capital
Howard Fireman--Director, Future Concepts and Surface Ship Design Group-Naval Sea Systems Command-Dept of the Navy
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Louis Whitcomb--Professor, The Johns Hopkins University
Ronald Yeung--Professor-University of California at Berkeley

We appreciate their time and significant contributions to the department

***CALLING ALL ALUMS AND FRIENDS OF NA & ME***

-Do you have news to share? Career? Family? Your latest adventure? We would love to hear from you!!

-Would you like to be a guest columnist in the *Nautilus*? We would love to discuss your ideas!!

-Would you like to Receive the *Nautilus* electronically?

Please contact Kay Drake at kdrake@umich.edu or 734-936-7636

Arrival of the Secretary of the Navy and his party on April 27, 2008
The Department takes some time out for some Halloween Fun!!

Department faculty and students enjoy the crisp October day in Ann Arbor, while sampling some sandwiches, donuts and apple cider.

Kay Drake, assistant to the chair, shows us her “Shake, Rattle and Roll.”

Professor Dale Karr enjoys the fall event!
Would you care to do your share to advance our programs? Here’s a convenient form to fill out:

YES! I am pleased to help the good cause with a gift of $_________.

CHECK ONE:

_____ Loyal Crew Endowment Fund
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_____ My company will match my gift. The appropriate form is enclosed.

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Please make checks payable to University of Michigan and mail to Kay Drake, NA&ME, 2600 Draper Dr., Ann Arbor, MI 48109-2145.