

Science Math Associates News from NNU School of Health and Science

Fall/Winter 2004

Science Math Associates

NNU Receives \$1.3 million for Biomedical Science Idea Network for Biomedical Research Excellence Grant

Does research at NNU make a difference in our students' lives? Just ask Brian Fife (see photo), a Nampa native who entered NNU as a pre-med major. After doing research with BRIN, an NIH program to begin increasing biomedical research in Idaho, Brian has decided to pursue an advanced degree in graduate school focusing on immunology. Ask Wilson Wanene who came to NNU from Nairobi as a pre-med major, who is now at University of Nevada, Reno, working on graduate studies in chemistry. You could call and talk to Steve Roth, originally a religion major, who also is now doing graduate studies in chemistry at University of Nevada, Reno. These are just a few of the stories of many students whose lives have been affected by research at NNU.



NNU received word from the National Institute of Health (NIH) this summer that our portion of the Idaho INBRE grant had been fully funded. This grant continues funds for biomedical research in the state of Idaho at Northwest Nazarene University, Boise State University, Idaho State University, Albertson College, Brigham Young University-Idaho, College of Southern Idaho, Lewis-Clark State College, North Idaho College, Eastern Idaho Technical College and Boise VA Medical Center for a total of \$16.1 million. As well as awarding NNU over \$1.3 million dollars over the next five years, this grant establishes a network of faculty throughout the state collaborating together in the general area of cell signaling. Researchers throughout the state are developing relationships with each other - sponsoring seminars and workshops together to jointly solve medical problems.

What does this grant mean to NNU and our students? First and foremost our academic departments will be enhanced by this grant. The grant contains funds to hire two faculty members—one in the area of human genetics and a second in computer science with emphasis in bioinformatics (computer programs that handle genetic analysis). Both of these areas will add new emphases to our departments as well as add research expertise. These individuals will have research start-up money and equipment money supplied by the grant. “NNU is pleased to join with our Idaho higher education colleagues in this exciting science project. Here at NNU, we will continue to emphasize quality research that not only contributes to our understanding of critical health issues, but also is a proven method by which students learn science. This grant will continue to enable us to do first-rate science education at the undergraduate level,” said Dr. Richard Hagood, president of NNU.

Dr. Jennifer Chase, Dr. William Fyffe, Dr. Chris Kapicka and Dr. Dan Nogales each will receive research funds from the grant. Dr. Chase will be teaching part-time and researching part-time, with the help of a research technician and undergraduate students. Her research area is the enzymatic control of liver alcohol metabolism. Dr. Fyffe is studying the development and spread of prostate and breast cancer in collaboration with Dr. Joseph Kronz, (Mercy Medical Center-Pathologist and NNC graduate). Dr. Kapicka is looking at commonly used cancer drugs (anthracyclines) and their damaging effects on the heart. Dr. Nogales is working on synthesis and structure activity of the anthracyclines.

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Vision for NNU

by Dan Nogales



Dan Nogales, Dean
School of Health & Science

NNU is at a pivotal junction in its 91-year history. You may be aware of the strategic planning that is taking place as preparation for our centennial anniversary in 2013. You may not be aware of the university outcomes that were developed by the faculty. These outcomes are the characteristics that we think NNU graduates should have and, in fact, reflect the characteristics of our alumni. The outcomes developed are: 1 - *Academic Achievement*, 2 - *Creative Engagement*, 3 - *Social Responsiveness*, and 4 - *Christ-like Character*. The faculty process distilled the many reasons to attend and graduate from NNU to these four fundamental characteristics each graduate should obtain or enhance while enrolled at NNU. NNU prides itself on being an excellent Christian institution, therefore, *Christ-like Character* and *Academic Achievement* were the easiest outcomes to define, so most of our discussion focused on what other attributes our graduates should possess. *Social Responsiveness* and *Creative Engagement* were agreed upon as the other attributes of an educated Christian.

Throughout this newsletter we give examples of each of the four university outcomes that our students are already fulfilling. I would like to highlight one of our university's outcomes, *Creative Engagement*. *Creative Engagement* is defined in NNU's outcomes as "applying their natural gifts and acquired knowledge to respond creatively to life: producing original works of art, new synthesis of knowledge, novel expression of ideas, and inspired solutions to problems." In science, we understand that "new synthesis of knowledge and inspired solutions to problems" is the process of research and scientific discoveries. Our undergraduate research program, with the capstone senior seminar symposium, is in full alignment with the university outcomes and has solidified the university's support of faculty research with students.

The lead story of this publication is the award of the NIH-INBRE grant for biomedical research over the next five years. The faculty involved in the INBRE grant are Dr. Chris Kapicka (biology), Dr. William Fyffe (biology), Dr. Jennifer Chase (chemistry), myself and two new faculty yet to be hired (one in biology and one in computer science). Other science faculty are also very active in pursuing outside funds to support undergraduate research projects. The faculty that have received funding are Dr. Jerry Harris (chemistry), Dr. Chris Kapicka (biology) and Dr. Tim Anstine (chemistry). Each are highlighted on page 5. Securing outside funding is not easy, but we know how important it is to have an active research program for our students' education.

"Our undergraduate research program, with the capstone senior seminar symposium, is in full alignment with the university outcomes and has solidified the university's support of faculty research with students."
Dan Nogales

Thank you for your support!

I would like to personally thank each person who has donated to the SMA general fund and to the restricted scholarship-research funds. In each of the past two years, contributions have exceeded \$10,000 from over 30 different donors. These funds have been invaluable to student scholarships and summer research stipends for both faculty and students. These contributions have fostered student/faculty research for faculty without outside funding. The demographics of your giving were interesting: Only a small number of the gifts were over \$500 and many of the gifts were between \$25 and \$250. As you can see, many small gifts can add up quickly. SMA has over 1200 on its mailing list. Can you imagine if each person on our mailing list sent in \$25?

I will be sending you a letter in late November asking again for contributions to SMA. Please remember the impact your contributions make in the lives of our students and faculty.

Dan Nogales

Christ-like Character / Social Responsiveness

NNU Health & Science Students Serve in Ukraine

After many months of preparation, 17 NNU students accompanied by Dr. Chris Kapicka (biology professor), Dr. Dan Lawrence (physics professor), and Dr. Stephen Hufman M.D., (Leavenworth, Wash.) left for Kyiv, Ukraine for a two week medical mission trip. After arriving in Kyiv, the group drove to a school in Krapivna, a small rural village a few miles north of Kyiv. The principal of the school was a Christian, and their first clinic was held at this school. Nursing students with the group did assessments of patients who were then sent to Dr. Hufman. Dr. Kapicka worked a pharmacy containing drugs brought by the group (donated by Heart-to-Heart) and drugs purchased in Kyiv. Other students helped with crowd control by tying balloon animals for the children. This was just their first day in Ukraine. At the end of their stay in the Ukraine, they took a train to Mariupol (18 hours on an overnighter!) where they attended a church service at a church being built in Mariupol. They stayed at a Christian orphanage and used the church for their clinic. There was a work-and-witness team from Lima, Ohio, working on construction of the church, an old building that was personally used by the Germans during World War II. In a downstairs gutted room, the students ran a clinic for neighborhood people as well as people from the street and city dump. This clinic was the most difficult (i.e. people whose feet had frozen last winter), but we thank God for the opportunity to serve in Ukraine and for the opportunity for this life-changing experience.



Bob Skinner & nursing student Sophie Ness assess a young patient.

Mission Trip to Haiti (Summer of 2003)

Her hair was brilliant red...a telltale giveaway Mari had anemia. How did our team know for sure and what could we do about it? We simply checked her hemotcrit reading and researched her family history. It turned out that Mari was indeed an orphan, living with her aunt who had a tendency to forget her. Mari, like many other Haitian children, was malnourished, which along with malaria and worms, serves as a leading cause of anemia. However, now Mari is happily paired up with the local pastor's wife who provides her with food and other essentials.

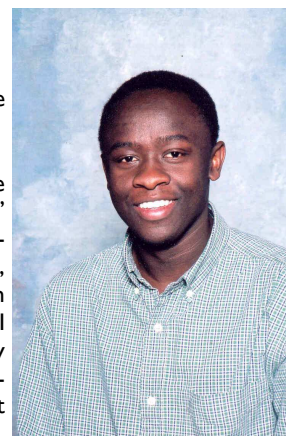
But Mari is only one of the many lives that our mission trip affected. Our group of six students: Brendan Blowers, Tierney Sparks, Heather Phillips, Megan Gregory, Lisa Albino, and Joy Haidle, along with chaperone Susan Wheeler (1998 NNC grad.), traveled numerous hours on a flight to Haiti, the poorest country in the western hemisphere, to help identify kids like Mari with medical problems and to play numerous games with them. Whether measuring their height or playing soccer, getting a blood sample or jumping rope, we felt that we were successful in impacting lives. And as we learned...the three hardest things to find in Haiti are "shade, privacy, and a view."



A Journey from Kenya to Reno via NNU

Wilson Wanene (chemistry, 2004) is attending the University of Nevada-Reno this fall to begin graduate studies in chemistry.

Wilson was born and raised in Mukurwe, a village of about 2000 people northeast of Nairobi, Kenya. The village was small but his classes were huge with 50 to 60 kids. "If you're smart enough, you can make it," he said. "But if you're not, it is difficult." In Kenya students do not get to choose a major but have to major in what is assigned to them. Despite his interest in chemistry, he was to study tourism. His father, Emmanuel Wafula, is a Nazarene pastor in Nairobi, and was told by some missionaries of a small college in Nampa, Idaho, where Wilson might attend and major in chemistry. "I didn't know about Idaho," he said, "I came to Nampa when it was starting to get cold." He said being away from home was made easier by friendly people, especially international students. "It was fun, but very challenging, too," he said. "In Nairobi, life is a lot more laid back. Here, in the first semester, I had classes that started at 7:30 a.m., when it was still dark."



For Wilson graduating was a dream come true. "I'm so excited, and my family is very happy for me."



Front Row Left: Tabitha Hanson, Kristy Keeton, Tracy Brandsma, Sarah Owens, Jenny Johnson. Second Row Left: Stacia Fine, Sara Blowers, Betty Besherse, Kristee Maier, Angela Ketchum. Back Row Left: Sophie Ness, Erica Jensen, Ronnie Fry, and Mindy Kayser

Academic Achievement

Class of 2004 Nursing Graduates

The third class of nursing students celebrated the accomplishment of graduating from the Baccalaureate Nursing Program on May 15, 2004. The students were honored to have Dr. Judith Stocks, who founded the nursing program here at NNU, return and give them their nursing pins at the ceremony at College Church. Their hard work and perseverance has been rewarded.

All but three of the 2004 graduates are working in the Treasure Valley. The other three graduates are working in Twin Falls, Idaho, Oreg., and Wash. Sophie Ness spent time this summer in Ethiopia working in an orphanage, while Sara Blowers and Jenny Johnson served on a medical mission in the Ukraine. We are proud of our graduates as they take their place among the 50 graduates of NNU's Baccalaureate Nursing Program.

New Nursing Faculty—Kay Totten



Kay Totten was an adjunct faculty last semester in the Department of Nursing. She did such an excellent job that we asked Kay if she would consider coming as a full-time faculty member. Kay has two children and her daughter is a senior here at NNU majoring in education. Kay keeps in perpetual motion and her hobbies certainly belie all her energy. She loves to ski, bike, hike and yes, bake. She is the only nursing faculty member who has a pilot's license. Her husband, Bob, is an actuary and they live in Boise along with their cat, Miss Kitty. They are active at St. Michael's Episcopal Cathedral where she serves as a parish nurse. Kay adds a new dimension to the Nursing Department as she comes with a strong background in hospice nursing. Kay is a woman of prayer, and we keep her busy with our prayer requests.

Kay has a master's in nursing from Whitworth College in Spokane, Wash., and previously taught at Lewis-Clark State College.

Each summer Kay volunteers for a week at St. Gertrude's Monastery, where she assists the nuns in all types of activities from berry picking to reading to the elderly nuns. Perhaps the best word to describe Kay is INTENSE!

**NNU joins the
AED National
Honor Society
that combines
Academic
Achievement
with Social
Responsiveness**

Alpha Epsilon Delta (AED) Honors Premedical Society

During the 2003/2004 school year, the society held two installations for AED. Students with any interest in a health career are invited to join if they have a GPA over 3.25. This club does various service activities. Last year we helped Sane Solutions run a booth at the Edward's Cinema Fair in Boise, Idaho. Sane Solutions works with parents and schools to educate them about child abuse. Officers of the club are Dorthyann Isackson, president; Joy Haidle, vice president; Tristan Galloway, secretary/historian; and Meghan Miller, treasurer. The following students were inducted into AED last year:

Krystal M. Back	Janna E. Fitch	Mindy N. Kayser	Meghan M. Miller
Karen C. Diener	Tristan S. Galloway	Angela R. Ketchum	Sophie E. Ness
Kimberly A. Duerksen	Joshua M. Hoiem	Natalia Khochay	Kristine E. Pillers
Kimberly D. Dyckman	Erica M. Jensen	Joy B. Marchbanks	Jennifer L. Soppe
Stacia L. Fine	Sarah P. Jobbins	Jonathan A. McFadyen	Jessica M. Sproul
			Denise M. Wadley

Creative Engagement

Higher Efficiency Solar Cells

By Jerry Harris - NASA Grant

Prior to joining the faculty at NNU, Dr. Jerry Harris spent six years working at NASA Glenn Research Center (NASA GRC) in Cleveland, Ohio, conducting research in the area of space power. Specifically, the research focused on developing light-weight high efficiency solar cells, light-weight lithium batteries and the growth of carbon nanotubes, which can be used for a variety of applications. The research he brings to NNU is a continuation of his work at NASA GRC.

Last fall, Dr. Harris was successful at obtaining a \$30,000 NASA EPSCoR grant from the Idaho Space Grant Consortium. The funding is for studying the deposition of CuInS_2 -based solar cells. The grant allowed for the purchase of an inert atmosphere glove box that will be used in several of the undergraduate laboratories, as well as for research. To assist with the research, collaborators at NASA GRC and Rochester Institute of Technology have loaned several other pieces of research hardware and instruments, including a two-zone furnace with temperature controllers and a mass flow controller for deposition of the solar cell absorber layer by chemical vapor deposition. During the 2004 summer, Dr. Harris and Joshua Benjamin (see picture), a junior chemistry major, have been working on this project together.



Joshua Benjamin working in inert atmosphere glove box

Cardiac Effects of Cancer Drugs

By Chris Kapicka - M.J. Murdock Life Science and INBRE Grant

A group of widely used cancer drugs, called anthracyclines (doxorubicin & daunorubicin) are well known to cause cardiotoxicity in high doses in humans. It is also known that the cardiotoxicity is greater in females than males. Our group is collaborating with the Boise Veteran's Administration Research group and is studying the effects of doxorubicin, doxorubicinol (alcohol metabolite of doxorubicin), daunorubicin and daunorubicinol (alcohol metabolite of daunorubicin) on the cardiac calcium release channel from heart ventricular tissue in an artificial bilayer system. The outcome of these experiments will help answer whether anthracycline cardiotoxicity is in part caused by these drug effects on the calcium release channel and whether there are differences in the regulation of male and female channels.

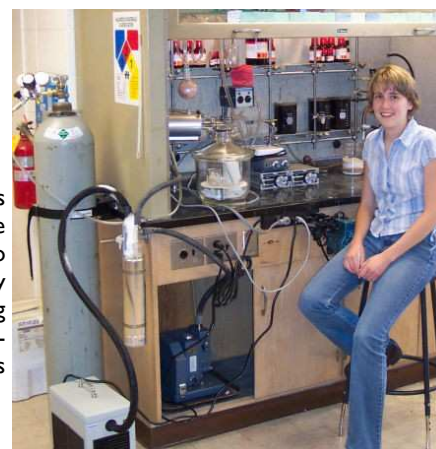
**High-Tech
education
prepares
students for a
bright future.**

Nanotechnology

Photocontrollable Molecular Switches

**By Tim Anstine - American Chemical Society - Petroleum
Research Fund ACS-PRF**

The general objective of my research at NNU is to synthesize and characterize molecules with interesting, yet practical photochemical profiles. We are in search of controllable molecular switches. The two immediate areas of impact from our research are first, to harness the potentially binary capacity of two discrete photostationary states afforded by certain organic functional groups, and second, to construct an addressable device using molecular recognition in concert with molecular self-assembly. Basically, using organic synthesis, we are building a molecular track on which a shuttle (another molecule) moves back and forth between two stations in a controlled fashion (using light).



Natalie Smith synthesizing shuttle molecules

Academic Achievement

Alumni Profile—*Rich Williamson*

Rich Williamson has worked in the U.S. Space Program for the past 41 years, mostly on NASA projects. Rich is currently on the staff of the director for planetary flight projects at the Jet Propulsion Lab (JPL) in Pasadena, Calif., with the title of contract technical manager specialist. Rich supports project managers and their teams in the early implementation phases of new planetary spacecraft missions, particularly with the technical contracts required.

Rich came to NNC/NNU from Greyball, Wyo., and began his life-long involvement in science in general physics and mathematics. He was active in Crusader Choir all four years of college and participated in a summer traveling group his sophomore year. Rich was also involved in the science club, campus radio station and Circle K.



Upon leaving NNC, Rich worked for five years at North American Aviation on the Apollo Program before beginning 37 years at JPL which started with the voyager program. Most of Rich's work at JPL has been in the development of flight hardware for NASA spacecraft and shuttle experiments. He has led teams as a technical manager for hardware developed at JPL and has served as a contract manager for hardware developed by contractors. Rich has also supported R & D projects primarily in avionics inert and optical sensors, power electronics and flight computer systems. Rich said, "I feel fortunate to have been involved with many historic space missions during my career, from the Apollo mission to the moon, the Voyager mission to the outer planets, to the recent Mars Exploration Rovers."

Following is a summary of those JPL spacecraft or flight experiments that include hardware items for which he had management responsibilities:

- Voyager - Two spacecrafts to explore the giant outer planets was launched in 1977 on a Titan—Centaur rocket. The mission included fly-bys of Jupiter (1979), Saturn (1980, 1981), Uranus (1986), Neptune (1989), and is currently at the outer edge of our solar system. Rich was the technical manager (TM) and contract technical manager (CTM) for the star trackers and sun sensors on this flight.
- Galileo - One spacecraft and probe to explore the planet Jupiter, was launched from the spaceshuttle, Atlantis, in 1989. There were fly-bys of Venus (1990) and Earth (1990 & 1992) before entering orbit about Jupiter to explore Jupiter and its moons. Mission was terminated by descent of spacecraft into Jupiter's atmosphere in September, 2003. Rich was CTM for the star scanner and TM for the spin detector on the spacecraft. Sixty moons have been identified.
- Astro 1 & 2 - Ultraviolet and X-ray observatory flown on the shuttles Columbia (Dec., 1990) and Endeavour (March, 1995). Rich was CTM for the star tracker for Image Motion Computer System.
- Topex/Poseidon - One spacecraft to study the Earth's ocean currents was launched in 1992 on an Ariane Rocket from French Guiana. The mission measured sea level to an accuracy less than four inches and tracked El Niño and La Niña phenomena. Rich was TM for the Solar Array Drive assembly and electronics.
- Cassini-Huygens - Consisted of one spacecraft and probe to explore the planet Saturn and its moons. Launched in 1997, it has accomplished fly-bys of Venus (1998 & 1999), Earth (1999), Jupiter (2000), and arrived at Saturn in July, 2004. It will continue exploration of Saturn and several of its moons through 2008. The Huygens probe will dive into the atmosphere of Titan (one of Saturn's 31 moons) and land on its surface in 2005. Rich was the TM for the altitude-control electronics, including the flight computer.



- Mars Exploration Rovers (Spirit and Opportunity) - Two Rovers to do geological studies on the surface of Mars. Spirit was launched in June, 2003 and landed on Mars January 3, 2004. Opportunity was launched July, 2003 and landed on Mars January 24, 2004. Both Rovers are currently exploring the Martian surface and have discovered evidence of water having been on Mars. Rich was the CTM for the airbags, avionics, and power electronics.

Rich has been married to Linda for almost 29 years, and they have four children and nine grandchildren. Rich writes, "There was a motto in front of the chapel that I still remember, 'Seek ye first the kingdom of God.' For me the spiritual path to learn how to connect with God in a meaningful way has been a life-long process. I am grateful for the tug and call of God, and I have found a way in recent years to walk with God in a personally meaningful way."

Three New Scholarships Aid Students Education

As the costs of attending colleges and universities continue to rise, more and more students are finding it difficult to afford higher education. NNU students in the School of Health and Science are not exceptions to this struggle. In response to this overwhelming need, we are committed to increasing both academic and research scholarships. Academic scholarships help students with tuition while research scholarships support students who are working on their required senior research project. Funds are used for supplies and summer salaries.

New Academic Scholarships: Dr. John W. & Elizabeth Kisse List Scholarship - a scholarship in nursing started by Dr. List, a surgeon in Auburn, Calif., in memory of his wife, Elizabeth, who was a nurse and an alumna of NNU.

New Research Scholarships: (1) Tom & Deloris Bloomquist Waller Field Biology Scholarship - to support research in field biology, started by Deloris Waller, Bruce Waller, and Anita Waller Sonnichsen in memory of their husband/father, Tom Waller, and his interest in the outdoors and wildlife. (2) The Rowen Family Scholarship - in memory of Dick and Marge Rowen and in honor of Bob and Dodie Rowen. Dick and Marge lived in Nampa, Idaho, where Dick was grounds supervisor at NNU for 18 years. Bob and Dodie are retired in Eagle, Idaho, after Dick's career in the U.S. Forrest Service. The purpose for this scholarship is to support research in wildlife and range management.

A minimum of \$10,000 is needed to endow a scholarship. The three scholarships above total about \$50,000, a sum that is invested with the interest used each year to fund a scholarship. A gift to a scholarship fund is truly the gift that goes on giving, year after year. A significant number of friends and alumni give regularly to existing scholarship funds is deeply appreciated. For more details on starting a scholarship, contact Dr. Darrell Marks, University Advancement, at NNU. You may call at (208)467-8529 or e-mail at dlmarks@nnu.edu.

New/Continuing Students & Faculty at the 8th Annual Health and Science Retreat



The Eighth Annual Health and Science Retreat was held at the Cascade Christian Camp near Cascade, Idaho, October 2-3. Seventy students and ten faculty gathered to fellowship, discuss science-ethical issues and worship together. The worship service was lead by Dr. Mark Maddix, and the theme was the integration of faith and science.

**Contact Dr.
Darrell Marks,
University
Advancement
at NNU, for
scholarships
that need your
contribution**

Physics Honor Society—Sigma Pi Sigma-Inducts Its First NNU Members

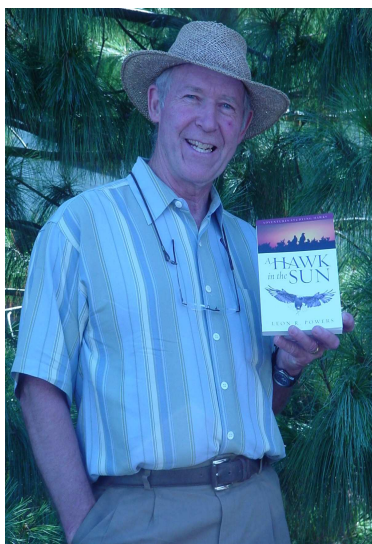
The NNU chapter of the National Physics Honor Society, Sigma Pi Sigma, was installed at NNU this last spring. The honor society is national in scope and includes such members as John Bardeen, the inventor of the transistor, and Robert Ballard, who discovered the Titanic. Five new members from NNU were inducted (April 2004) into the honor society at an induction ceremony held at the Scenic Sandbar Restaurant on the Snake River in Marsing, Idaho. Dr. William Packard, the SPS advisor, said, "It is a great honor for NNU graduates to be inducted into this nationally acclaimed physics honor society." Shown in the photograph are the inductees and their professors.



Dr. William Packard, Wes Tennyson, Emily Mace, Cynthia Lapp and Dr. Dan Lawrence

NNU Ranked in *U.S. News & World Report*

NNU was again named to a list of best universities, earning a top-tier ranking as one of the best master's-level universities in the Western United States, according to *U.S. News & World Report*. NNU held its number 30 ranking in the annual "America's Best Colleges" edition and was the only Idaho university to earn a top-tier ranking. *U.S. News & World Report* annually judges thousands of colleges and universities in the United States on factors such as peer assessment, retention and graduation rates, average class size, student-to-faculty ratios, faculty resources, financial resources, and the ACT/SAT achievement test scores and high school rankings of incoming freshman students.



New Instrumentation

The NNU Chemistry Department has been awarded \$89,000 toward the purchase of a new Nuclear Magnetic Resonance Spectrometer from the National Science Foundation (NSF). A match of \$82,500 is currently being sought to complete the funding. The new 300 MHz system will be installed on the chemistry floor of the Math & Science building at NNU. Chemistry and biology students will receive hands-on-experience preparing samples, acquiring spectra and interpreting data from molecules that they have synthesized. Furthermore, undergraduate research students will have ready access to this essential tool. The addition of the spectrometer will strengthen the research program and prepare students for graduate and professional schools.

Creative Engagement

A Hawk in the Sun written by Leon Powers

Though always an observer of birds, it was during his extensive field research studying the nesting behavior of the Ferruginous Hawk for his Ph.D. dissertation that Leon came of age as a naturalist. *A Hawk in the Sun* chronicles his personal adventures during his three years of unveiling the life story of this very shy desert raptor. This book engagingly ushers the reader up-close into the private life of this majestic hawk to witness its daily struggle for survival. Page by page, *A Hawk in the Sun* unveils the intriguing life story of the Ferruginous Hawk while at the same time entertaining the reader with wildlife adventures that challenge both the hawk and its researcher. This hawk's running battles with attacking coyotes, and the nocturnal stealth bomber, the Great Horned Owl, as well as surviving the searing desert sun are just a few of its attending dangers. *A Hawk in the Sun* engages, entertains, and best of all, enlightens the reader. Welcome to the life and times of one of North America's best-kept wildlife secrets! And there are adventures aplenty unraveling this veil of secrecy.

Social Responsiveness

Jason Project—Disappearing Wetlands

For the past several years NNU has cooperated with the INEEL and the Bechtel Corporation in hosting the JASON Project. Named after the explorations of Jason and the Argonauts, the JASON Project is a science curriculum designed primarily for mid-high or junior high students. This national program is organized around the concept of a site somewhere on Planet Earth where real scientists team up with student "Argonauts" to explore issues associated with that particular site. These locals have included such exotic places as Antarctica, Panama and the Channel Islands. This year, the site is the Mississippi Delta, with the theme of "Disappearing Wetlands." We hosted a workshop this fall for over 20 area teachers in an effort to introduce them to the particulars of this year's curriculum and to share ideas on how to make science come alive for their students.

This winter we will have approximately 2000 students visit our campus to participate in a live satellite broadcast from the Mississippi. In addition to the broadcast, students will participate in a number of educational modules designed to provide additional learning opportunities. Students Kara Bowen and Brian Fife are working with Dr./Professor (whichever you like best) John Cossel to design modules on "Solar Powered Wetlands" that will highlight the role of electromagnetic radiation as the source of energy for wetland ecosystems and the plant pigments used to harness that energy. A second module titled "Radiotelemetry, GPS and GIS 'Techno' Tools for studying Idaho Lizards" will illustrate to attendees the ecological research being conducted by Dr. Cossel and his students. The third module "Disappearing Amphibians" will showcase Idaho's amphibian species and the issues related to their ecology and conservation. Part of this module includes the construction of three terrariums modeling different Idaho wetlands and housing such animated amphibians as Western Toads and Tiger Salamanders. These quality displays can be viewed by the public on the biology (2nd) floor of the science building. Although hosting such a large event is demanding, the involvement of NNU science students and faculty, and the exposure of so many young students to real science make it extremely worthwhile.

Academic Achievement

Pre-Med Highlight—Loma Linda University

Loma Linda Medical School's mission statement reads, "Our overriding purpose is the formation of Christian physicians, educated to serve as generalists or specialists providing whole-person care to individuals, families and communities." Their emphasis on a Christian education and on missions likely explains why application to Loma Linda is "such a tradition." The following NNU students matriculated to Loma Linda Medical school in the past five years:

Fall 2004 Jerad Shoemaker	Fall 2001 Telfer Griffith
Fall 2003 Nicholes Mahaffey	Fall 2000 Joel Spencer
Fall 2002 Daniel Benedick	Fall 1999 Jason Buttles



Nick Mahaffey (person in the middle)

Nick Mahaffey shares his experience while attending Loma Linda University. "I chose to attend Loma Linda due to its status as the only Christian medical school in the United States. There are many excellent opportunities available here to grow as a Christian while studying to be a doctor. For example, this summer I went to Papua New Guinea through Loma Linda's SIMS (Students for International Mission Service) program. I had a great time serving people in a mission setting while getting valuable clinical experience. This is just one of the many opportunities I have encountered while at Loma Linda."

Creative Engagement

Senior Seminar and Banquet

The School of Health and Science Senior Seminar Banquet and Conference was held in NNU's Wiley Lecture Hall beginning at 8:30 AM, Sat., May 1, 2004, while the banquet was the previous evening, Fri., April 30, 2004. The banquet was held at the Nampa Civic Center, with 71 in attendance, including the seniors, their guests, faculty, faculty spouses, several emeriti faculty and Mark and Nancy Pitts (vice president, Academic Affairs). The banquet began with a sumptuous buffet dinner followed by a presentation by our special guest speaker: Mr. Mike Messick. Mike is an alum of NNU (B.A. computer science and history minor, 1997) who is currently the sr. network security analyst for ConocoPhillips. He performs various information security functions worldwide, including intrusion detection, policy consultation, penetration testing, and training. He has experience investigating Internet-related crimes, including child pornography, hacking, extortion, fraud, and even murder. Mike currently resides in Alaska with his wife, Heather, (who joined him at the banquet) and their two sons.

"Hacking the Hackers" was the title for Mike's talk that included several stories from his experiences catching bad guys on the Internet and the cyberwars between good and evil that rage on and on. Mike kept the attention of the audience throughout and handled many questions following his presentation, demonstrating the high level of interest of the audience members in Mike's talk.

The primary purpose of the banquet is to honor the seniors and their accomplishments, celebrate the anticipated completion of their bachelor's degree requirements, and set the stage for their presentations to come the next morning at the conference portion of the seminar. Saturday morning's conference was free and included presentations such as "Construction and Use of Mechanical Lips to Determine the Acoustical Properties of Trumpets," by Emily Mace, "Water Quality Assessment of the Western Portion of Weiser River Tributaries," by Alina Lunsford, "Modeling Solid State Crystal Structure Using OpenGL," by Michael Mattei, "Juvenile Rehabilitation in Idaho: A Program Evaluation," by Jacob Mong, and "A Photoisomerizable Molecular Switch," by Benjamin Wornell.

We would love to have you attend in May of 2005 and help us honor our seniors. Most of the science faculty attends with many of their spouses. You are welcome to bring anyone with whom you would like to share the experience. The cost of the banquet is typically \$15/person, while the Saturday morning conference is free. Please plan now to attend.



Mr. Mike Messick talking about "Hacking the Hackers"

It is always wonderful to hear what is going on in your lives, and we would love to hear from everyone. Please send this type of information to SMA via e-mail at sma@nnu.edu or by mail. Include your name, year of graduation, your major, information on your present employment, hobbies, family, etc.

40s **John Sutherland, biology '41** - is working on a paper about the creationist/evolution controversy. John also has a small lab set up in his basement that he is working with cancer tissue that is supplied by local veterinarians in the local area of Atkinson, Nebr.

Ruth Long, mathematics and art '46 - is retired in Nampa, Idaho, with her sister **Dorothy Long, mathematics and art, '46**. Both had careers in teaching, with Ruth teaching art at NNU.

50s **Vesta (Franz) Skiens, nursing '50** - retired in 2001 as an Executive Recruiter in the health sciences and hospital administrative areas. Vesta lives in Nampa, Idaho.

Corra E. (Lunsford) Wolfe, bio/chem education '50 - is retired in Alamosa, Colo., after teaching middle school science for 25 years.

Loyd L. Smith, MD, math and biology '54 - retired in 1994 as a physician in Pueblo, Colo.

60s **Phil Ness, engineering physics '61** - after retiring from Boeing in Seattle, Wash., Phil and his wife, Adinela, have spent six months each year for the last five years with children-and-youth ministry in the village of Marga in southwest Romania.

Dan Edgar, engineering physics '63 - retired to Nampa, Idaho, after a career primarily at Honeywell. Dan taught several courses at NNU during retirement.

Earl Fairbanks, mathematics '66 - after working for the State of Oregon Employment Department, Earl retired as the senior labor economist., Earl keeps himself busy by serving as the worship leader, treasurer, and board member for the Church of the Nazarene in The Dalles.

Tony Kupinski, physics '66 - is president of EXi Parsons Telecom in Cumming, Ga. EXi Parsons Telecom is a leading provider of wireless network implementation services, providing single-source turnkey network and associated facility services for telecom equipment suppliers and operators. He and Kathryn (1967) have four sons.

70s **David Crockett, biology '70** - is currently area sales manager for Greiner Bio-One of Austria, one of the leading edge manufacturers of extruded plastic, safety, blood collection tubes. For 27 years David has sold lab instruments to hospitals and clinical labs in the eight western states of the United States.

Reginald Finger, MD, mathematics '76 - is a medical issues analyst at Focus on the Family in Colorado Springs, Colo. Reginald and Annette have two children, Dawson and Monica.

Jim Zimbelman, physics '76 - is department chairman of the Center for Earth and Planetary Studies at the Smithsonian Institute in Washington, D.C.

80s **Natalie Williams, physics '82** - in October 2003 Natalie had the privilege of acting as Mission Manager for the launch of Galaxy XIII, Sea Launch's tenth successful mission, capping off nearly two years of engineering integration. Natalie now works with a company called AEW&C (Airborn Early Warning & Command). It is an omni-directional, electronically steered array radar. Natalie works primarily with Korea, Italy and Spain.

Karen Gerdes, physics '84 - teaches at Ranches Cucamonga High School in Alta Loma, Calif. She teaches calculus, physics, pre-calculus, and coaches the academic decathlon team.

Joe Ness, physics '84, and Kela (Haller) Ness, chemistry '83 - live in Snohomish, Wash., where Joe is a full-time caregiver for their children Kevyn, Kathysia, Kyle, and Krystofer. Kela has a private dental practice.

Jeff Hanway, MD, biology '84 - lives in Clifton, Va., where he is a pediatric orthopedic surgeon. His wife, Elizabeth, is also an MD who works at NIH in international medicine. They have four children, Sasha, Tory, Christian, and Sophia.

Dianne (Shank) Anderson, biology '85 - recently completed a Ph.D. in math and science education at University of California at San Diego. Dianne and her husband, Ted, have two children, Tori and Ayel.

Steve Rasmussen, engineering physics '85 - after fifteen years as a planner analyst with Lockheed in Sunnyvale, Calif., Steve, Susie, and their five children have moved to Tucson, Ariz., where Steve will work for Raytheon in missile systems.

Michael Severson, chemistry '85 - graduated from the Air Force Institute of Technology with a master's degree in nuclear engineering. His duty assignment is now at Scandia National Laboratory at Kirtland Air Force Base in Albuquerque, N.Mex.

Art Bahrs, computer science '86 - lives in Portland, Oreg., with his wife, Sandy, and works in information security for the Regence Group.

Nathan Dikes, DPM, chemistry '88 - lives in Spokane, Wash., where he works in private practice in podiatric medicine. He and Jennifer have two children, Craig and Olivia.

Dawn Gertson, MD, bio/chem '88 - is an emergency room attending physician in Stafford Springs, Conn., and has a private internal medicine practice. Dawn married Craig Sooter in August of 2003.

90s **Crystal (Clough) Lorch, mathematics '90** - lives in Muncie, Ind., with her husband, John, and their two children, Carolyn and Rob. John teaches in the mathematics department at Ball State University.

Preston Crow, computer science '91 - received his master's degree from Dartmouth College in New Hampshire. Preston and his wife, Catherine, now reside in Ashland, Mass. Preston, who works with EMC, develops the embedded software that powers our high-end symmetrix storage systems.

Joe Kronz, MD, biology '90 - is currently a pathologist at Mercy Medical Center in Nampa, Idaho. Joe has authored over 20 research articles and currently directs research with biology students at NNU. He and Kristi ('91) have three children, Josiah, Isaac, and Isabelle.

90s **Scott Schimanski, computer science '90** - works as a project manager for Health Cast in Meridian, Idaho. Scott and Judy ('92) have three children, Megan, Christopher, and Abigail.

Kevin Mowry, computer science '93 - works with Texas Instruments as an OMAP software program manager. OMAP is an applications processor that comprises the brains of many smart phones in the market today. "I owe my success in large part to the education I received at NNC and to Professor Lloyd Thorpe who did a great job of training us to think like computer scientists," he said.

Emi (Baca) Baumgartner, pre-physical therapy '94 - lives in Simi Valley, Calif., where she is an occupational therapist at Simi Valley Child Developmental Center. She has received certification as an infant mental health specialist.

Deanna (Murray) Cusic, computer science '94 - has been keeping busy with raising three girls, Debra, Rebecca, and Amanda, as well as taking care of her husband, Scott. Deanna has also been substitute teaching in the Nampa School District in Nampa, Idaho, and is working towards teaching in special education.

Dan Mahon, chemistry '95 - during graduate work at the University of Southern California, Dan experienced a call to ministry. He is currently administrative pastor at the Anaheim Vineyard Church. He and Sarah have two children, Katie and Lorien.

Mark, computer science '95, and Debi (Carter) Schmelzenbach, chemistry education '96 - have lived in Salt Lake City, Utah for seven years. Mark works at Attensity, an organization that does natural language processing. Debi taught science for six years and now works in children's ministries.

Steve Fairbanks, mathematics education '95 - attended Asia-Pacific Nazarene Theological Seminary in Manila, the Philippines in preparation for career missionary service with his wife, Tamara. Steve is also ministering in orphanages and children's homes while studying. Steve is worship pastor of the seminary campus church, International Nazarene Fellowship. Steve, Tamara and their daughter, Indah Grace, are planning on coming home (U.S.) in late October.

Matt Goff, mathematics '96 - received a MS in mathematics ('98) and a MS in statistics ('02) from Washington State University where he continues to work on a Ph.D. in mathematics. Matt is currently assistant professor of mathematics at Sheldon Jackson College in Sitka, Alaska.

Waylon Brown, biology '96 - received his Doctor of Pharmacy degree in 2001 from the University of Montana. Waylon is a pharmacist in the Missoula area and is minister of music in Hamilton, Mont., at the Riverside Christian Center.

Bryan Wick, biology '96 - spent three years in microbiology at the University of Kansas before entering medical school at the University of Kansas where he graduated this spring. He went to Loma Linda University this fall for a residency in internal medicine.

Tracey (Bryan) Osso, pre-physical therapy '97 - received a master's in business administration from Gonzaga University in May of 2002. Tracey married in May of 2001 and she and her husband had their first baby, Joshua. Tracey is now the development director for the Lilac Blind Foundation.

Mandy (Boorman) Moore, PA, biology '98 - graduated with a physician assistant degree in 2000 and worked in general surgery two years before opting to stay at home full-time with her children, Grant and Chloe. Mandy and her husband, James, live in Newman Lake, Wash.

Loren Fairbanks, mathematics education, computer science emphasis '99 - lives in Tillamook, Oreg., with his wife, Heidi. Loren is a computer technician for Tillamook County and recently obtained CISCO certification.

00s **Ryan Comingdeer, computer science '00** - after hiking the Pacific Crest Trail for three months with his wife, Ryan took up residence in Bend, Oreg., working for a company called IntelliChem. Ryan writes software for pharmaceutical companies such as Merck, J&J, Pfizer, etc.

Jill (Mosely) Gile, biology '00 - is working for a pathology lab at Evergreen Medical Hospital in Seattle, Wash.

Aaron Bynum, computer science '01 - is a software test engineer at Adecco which is a part of Hewlett-Packard (HP) in Nampa, Idaho. Alysa Renee joins her twin sisters, Caitlin Maija and Hannah Sage.

Patrick LeBow, biology '02 - is technical lead, associate scientists with North Wind, Inc., for a groundwater cleanup site in Louisville, Ky. Patrick and his family reside in Idaho Falls, Idaho.

Rebecca Weikel, chemistry '02 - is a graduate student at Texas A&M Univ. and is working on a doctorate in physical organic chemistry.

Wava Weikel, chemistry '02 - is working at Analytical Labs in Boise, Idaho.

Micah Parrish, computer science '03 - works for Hewlett-Packard's (HP) Linux and Open Source laboratory in Ft. Collins, Colo. Micah does quality assurance for HP's Integrity 64-bit servers on several linux distributions, including Red Hat, SuSE and Debian.

Randy Seals, computer science '03 - immediately after graduation, Randy took a job with the Caldwell School District in Caldwell, Idaho, as their Web administrator. Randy married Katrin the same year.

Kendra Thoren, bio/chem '03 - was accepted into osteopathic medical school at The University of Health Sciences in Kansas City, Mo.

Shelly Eckstrom, engineering/mathematics '04 - is an office manager at a consulting company called Lifequest in Nampa, Idaho.

Shelley (DeBoer) Eilers, mathematics education '04 - married Erik Eilers after graduation. Shelley is teaching 9th-grade math at Sacajewea Jr. High in Lewiston, Idaho.

Marcie (Ward) Ellis, biology '04 - married Hans Ellis this fall and works in Admissions at NNU.

Emily Mace, physics '04 - is in her first year at Purdue University, pursuing a Ph.D. in physics.

Erica Madison, bio/chem '04 - is working for the U.S. Fish & Wildlife near Gustavus, Alaska, conducting a variety of studies like nesting shorebirds, Dungeness Crabs, and physical oceanography. All this has kindled her interest in physical oceanography and hydrodynamics related water studies.

Jerad Shoemaker, bio/chem '04 - was accepted at Loma Linda University Medical School and is attending his first year.

Jeff Wilson, bio/chem '04 - has been accepted into an osteopathic medical school in Kirksville, Mo.

Science Math Associates

Annual SMA Homecoming Breakfast

The annual SMA Homecoming Breakfast this year will be on Saturday, November 27, 2004, of Homecoming week starting at 8 AM. If you are a science, mathematics, computer science, or nursing alumni we would like to invite you and your friends to join us. We will be meeting in the Ferdinand Suite in the new Johnson Sports Center. The program and cost will be announced in a letter you will receive the last week in October.

Reunion classes this year are: 1959, 1964, 1969, 1974, 1979, 1984, 1989, 1994, and 1999.

Please note the change of location for the SMA Breakfast from Wordsworth Meeting Room to Ferdinand Suite.

Science Math Associates

Purpose - SMA exists to promote the quality of programs and majors in the School of Health and Science through scholarships, donations, assistance in recruiting prospective students, and interaction with current students concerning careers and employment. SMA also acts to facilitate communication of news and information between the School of Health and Science and SMA members.

Membership - 1) Graduates of NNC/NNU in science, math, nursing, or computer science. 2) Students who spent at least one year at NNC/NNU in pre-professional science related areas. 3) Friends who want to be involved in the support of the School of Health and Science.

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**DATE: Saturday,
November 27, 2004**
PLACE:
**Ferdinand Suite, Johnson
Sports Center**
TIME: 8 AM
COST: \$7.00 per person

**Science
Math
Associates
(SMA) is:**



Great minds
Great hearts
Great futures

623 Holly Street
Nampa, ID 83686-5897

Phone: 208-467-8361
Email: sma@nnu.edu