MSU COLLEGE OF NATURAL SCIENCE
connections

A newsletter serving College of Natural Science alumni and friends **Winter 2005**

From the Dean's Desk

George E. Leroi
Dean
College of Natural Science

This sesquicentennial year has been an exciting one for MSU and the College of Natural Science. Former Provost Lou Anna Simon has become our 20th President, and Kim Wilcox, an alumnus who began his undergraduate studies in Lyman Briggs, was recruited as our new Provost. In her "Boldness by Design," sesquicentennial address, President Simon charged us to be recognized worldwide as the premier land-grant research university for the 21st century (http://strategicpositioning-.msu.edu). This offers new challenges and opportunities for the College.

In order to help mitigate the continuing decline in state funding (a national phenomenon), MSU students reluctantly, and despite economic hardships, encouraged our Board of Trustees to protect the value of their education by raising tuition and fees. The new resources generated have established a competitive Quality Fund that supports initiatives that have a broad impact on the student academic experience.

This fund will help the College better connect and engage students by converting space in the Natural Science Building to consolidate our pre-professional advisors, life-science advisors, career and internship professional, and study abroad and outreach coordinator. They will be in close proximity with the Office of Research Services to form the CNS Center for Student Engagement. Research has shown that such learning communities are effective for student success and retention.

The Lyman Briggs School of Science (LBS) recently expanded enrollment by 25%. It will expand by another 25%, with a target of 625 matriculating students in Fall 2006. This necessitates the recruitment of additional faculty and the creation of new, as well as renovated, laboratories in Holmes Hall. The College is responsible for raising a significant portion of the $5.8M construction costs.

With the help of a bond initiative, an annex will be built on the Chemistry Building to house offices, instrumentation and seminar rooms. The undergraduate service laboratories will be consolidated on the first floor, and the vacated space will be converted for research use as private funds become available.

The College remains one of the largest at MSU with more than 6,000 students in our programs. The interdisciplinary involvement among departments and programs continues to benefit student learning, faculty interaction and scientific research.

The Department of Food Science and Human Nutrition joined the College during the year, bringing our complement to 25 departments and programs. Our scientists continue to collaborate across the campus and around the world; external research support over the past year (including the Cyclotron) rose to more than $75M.

This communication features exemplars of the ways the College continues to advance knowledge and transform lives. We look forward to hearing from you and wish everyone in the CNS family continued success in 2006.

SOAR Telescope provides opportunities to advance the 21st century land-grant mission of MSU

Tim Beers (center), professor of astronomy at MSU, discusses the SOAR Telescope to a group of Penn State University alumni as part of a campus tour. With most of the testing and adjustments finished, MSU astronomers will begin using the 4.1-meter telescope about 40 nights per year.

Researchers receive $4M grant to uncover gene functions

A collaboration of MSU researchers will use a $4 million grant from the National Science Foundation to uncover the functions of genes in a plant – research which may ultimately lead to improvements in human health and agriculture.

In a collaborative effort spanning several departments, MSU scientists will determine the functions of roughly 4,400 nuclear genes from the Arabidopsis plant. Arabidopsis is a flowering plant whose entire 29,000 gene sequence is known.

Scientists will focus on the genes which encode the chloroplast-targeted proteins that trigger photosynthesis. Understanding how these genes operate could yield significant breakthroughs in biotechnology and genomics worldwide, resulting in advances in human health and agriculture.

The chloroplast gives green plants their color and carries out photosynthesis and produces oxygen. It can be thought of as the world's life-support system. It is an attractive target for biotechnology because it produces many different molecules important to agriculture and human health, such as vegetable oils, starch for ethanol-based fuels, vitamin E and amino acids. Despite the many functions of a chloroplast, the MSU team estimates that it takes only around 4,000 genes to make a functional chloroplast, which is similar to a simple bacterium, rather than the tens of thousands of genes required to make a whole plant.

"If we completely understand the chloroplast, it should then be possible to engineer plants to be more productive harvesters of the sun's energy into biomass to decrease dependence on oil," said Robert Last, professor of biochemistry and molecular biology and plant biology at MSU. "We also will be able to more efficiently make nutrients important to human health. These include vitamins and heart-healthy oils."

Robert Last, professor of biochemistry and molecular biology and plant biology, holds an Arabidopsis plant that his team of researchers will be using to identify functions of genes.

MSU scientists will determine the functions of roughly 4,400 nuclear genes from the Arabidopsis plant - research which may ultimately lead to improvements in human health and agriculture.

The NSF's Arabidopsis 2010 project is a worldwide effort to catalogue the function of every gene in the plant – something never before accomplished with any plant or animal. The $4 million grant begins Dec. 1 and will continue for four years. The project will create eight full-time jobs for technicians, graduate students, post-doctoral students and fellowships. An additional 10 positions will be created for undergraduate students enabling them to receive valuable research experience.

"MSU plant scientists have been in the vanguard in using Arabidopsis as the best-understood plant model," said George Leroi, dean of the MSU College of Natural Science. "Importantly, the project will provide opportunities for MSU undergraduates, graduate students and visiting researchers to become educated in modern genomic and bioinformatic techniques that will be widely applicable in the future."

This functional genomics research is a collaborative effort spanning several departments in the College of Natural Science, including the departments of Biochemistry and Molecular Biology, Plant Biology, Physics and the MSU-DOE Plant Research Lab.

Last is the project's principal investigator. Co-investigators, all MSU faculty, are Christoph Benning, Dean DellaPenna, Ken Nadler, John Ohlrogge, Katherine Osteryoung, Yair Shachar-Hill, Andreas Weber, Bill Wedemeyer and Curt Wilkerson.

For additional information, visit the Plant Biochemistry research web site: http://www.bch.msu.edu/research/plant/plant.htm.

MSU researchers use genomics and rice to help reduce malnutrition in developing countries

A world-wide collaboration involving MSU researchers is using genomics to increase the nutritional value of rice in order to help address malnutrition in developing countries.

Reliance on rice as a primary source of food causes malnutrition throughout much of the developing world since rice is a poor source of several essential micronutrients. As part of an $11.3 million project supported by the Grand Challenges in Global Health initiative, MSU scientists are collaborating to increase levels of provitamin A, vitamin E and other micronutrients in rice.

MSU scientists are collaborating to improve the nutritional value of rice to help reduce malnutrition.

"The rice genome was recently sequenced and found to encode genes necessary to synthesize essential vitamins," said Dean DellaPenna, professor of biochemistry and molecular biology at MSU. "Many of these genes in rice are not expressed sufficiently in the rice grain, therefore the vitamin levels are low. Our goal is to control essential nutrient production in the rice grain by increasing the expression of key genes in the processes."

DellaPenna has identified and studied key genes involved in the synthesis of vitamin E in a plant called Arabidopsis thaliana. This plant, a small relative of mustard, is commonly used in plant research and MSU is a leader in Arabidopsis genomic research.

"The rice genome is 95 percent similar to that of Arabidopsis, so the knowledge we have obtained in Arabidopsis can be directly transferred to work in rice," DellaPenna said.

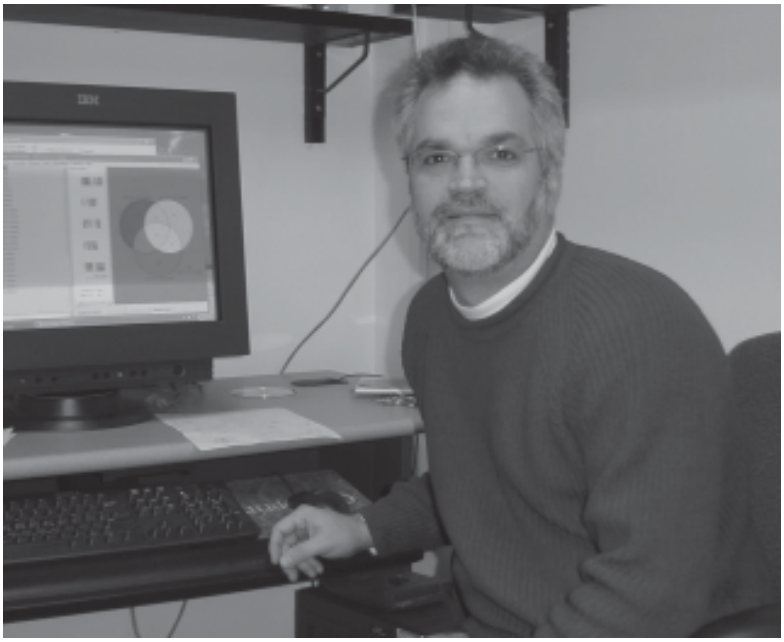
MSU scientists are focusing on the front-end of the research project where DellaPenna and his colleagues will continue fundamental work in identifying key genes for micronutrients in plants. The project's principal investigator, Peter Beyer at the University of Freiburg, will be working to apply all of the fundamental knowledge from research by the collaborators.

The project is an international collaboration among MSU, Baylor University, and the University of Freiburg in Germany as well as the Chinese University of Hong Kong, the International Rice Research Center in the Philippines, the National Rice Research Center of the Philippines, and The Cuu Long Delta Rice Research Institute in Vietnam.

"The role our scientists are playing in the improvement of nutrition in rice is well aligned with the 21st-century land-grant mission and philosophy of MSU," George Leroi, dean of the College of Natural Science, said. "This international collaboration that uses science to help alleviate malnutrition illustrates how many levels of research can come together to ensure a brighter future in all parts of the world."

The five-year project seeks to enhance beta-carotene (provitamin A), vitamin E, iron and zinc in rice. Once the nutritional value of rice is improved, it can be easily introduced into developing countries.

The project is part of the $436.6 million Grand Challenges in Global Health initiative, a major effort to achieve scientific breakthroughs through innovation in science and technology to solve the greatest health problems in the developing world. The Grand Challenges initiative is supported by the Bill & Melinda Gates Foundation, the Foundation for the National Institutes of Health, the Wellcome Trust, and the Canadian Institutes of Health Research. The goal is to create health tools that are affordable and practical for use in developing countries. Grants were awarded to research scientists in 33 countries.



Dean Della Penna, professor of biochemistry and molecular biology, is leading the MSU team of researchers in identifying key genes for micronutrients in plants. The project is part of a world-wide collaboration working to reduce malnutrition.

Grant forges math-life sciences links for MSU undergraduates

Life scientists today are as likely to be found crunching data at a computer keyboard as probing Petri dishes in a laboratory. And it's not uncommon to find a mathematician taking a break from equations to pore over a graduate-level genetics textbook.

To help its undergraduates prepare for these career-crossover demands, Michigan State University researchers will use a $905,000 grant from the National Science Foundation (NSF) to enhance undergraduate education at the intersection of biology and mathematics.

"With the growing need for scientists to work on fundamental biological problems using mathematical techniques, MSU stands to become the leader in producing such uniquely qualified individuals," said Peter Bates, professor and chairperson of the MSU Department of Mathematics and one of the five principal investigators of the NSF project.

Advances in molecular biology, genetic regulatory networks, cell signaling and other rapidly developing areas in the biosciences are producing vast quantities of raw data.

For example, a single lab investigating proteins and their functions, a field called proteomics, can generate 12 terabytes of data in one year. That's about the same amount of information stored in the Library of Congress.

The challenge for scientists is to sift through this information to understand highly complex processes, many of which become clear only after sophisticated statistical analysis and data mining.

It's work with a big potential payoff, especially in the area of customized drug development. In basic research, too, fundamental processes in biology are often best described by mathematical formulas.

"Discovering and analyzing these formulas is at the core of many new developments in biomedical sciences," Bates said.

The problem, said Bates, is that mathematical modeling and analysis, computation and higher level statistical techniques traditionally are not part of biologists' training. Likewise, mathematicians, statisticians and computer scientists often are unfamiliar with even the basics of biology.

The five-year project, "Integrated Analysis of Genetic and Cellular Networks," will provide undergraduate students with research experiences in both mathematical and biological sciences.

Eight juniors and eight seniors will be selected annually to participate. The students will work together to solve biological problems – understanding molecular structures and mechanisms, gene expression, metabolism and cell signaling – using quantitative skills and software.

"These students, I am sure, will find personal satisfaction in being prepared to address problems that have a significant and direct impact on life," Bates said.

Along with Bates, the other principal investigators, all MSU faculty, are: Chichia Chiu, associate professor, and Moxun Tang, assistant professor, Department of Mathematics; Donna Koslowsky, associate professor, Department of Microbiology & Molecular Genetics; and Kathleen Gallo, associate professor, Department of Physiology.

This project is part of the NSF Undergraduate Biology and Mathematics activity to enhance undergraduate education and training at the intersection of the biological and mathematical sciences and to better prepare undergraduate biology or mathematics students to pursue graduate study and careers in fields that integrate the mathematical and biological sciences.

For more information on the MSU Department of Mathematics, visit the Web at www.mth.msu.edu.

New Center Provides High-Performance Power for Researchers

College of Natural Science researchers have a new tool for facilitating discovery: the High Performance Computing Center (HPCC) at MSU. The HPCC began operation in October and is a joint venture between CNS, the College of Engineering, the National Superconducting Cyclotron Laboratory and other university partners.

The HPCC began as a initiative by faculty to increase the research enterprise at MSU and capture research opportunities that would otherwise not be possible. The HPCC also provides a forum for cross-disciplinary collaboration. Computation has emerged as the third leg of scientific discovery, and this facility provides students and faculty easy access to a powerful tool to assist their research.

"Having the HPCC here at MSU is critical in increasing our research efficiency and interdisciplinary collaboration" said Estelle McGroarty, senior associate dean of the College of Natural Science. "The HPCC allows us to more aggressively pursue new avenues of research and funding that demand high-end computing, since we previously had to rely on facilities at other institutions."

The HPCC will allow researchers to create simulation tools for new discoveries and manufacturing. Some of the areas of CNS researchers will work utilize the HPCC for include designing of nanoporous materials, exploring new isotopes, interactions of virus/host cell, predictions of chemical structures and reactivity, and much more.

There are two main computational assets: the SGI Altix 3700 Bx2 provides 333 GFlops of power and the Western Scientific AMD Infiniband Cluster provides 2.4 TFlops of distributed compute power. After a two-year building process, the HPCC was dedicated in October. The facility occupies 2100 square feet on the 3rd floor of the Engineering Building.

On-line class blends Entomology with CSI

Insects may not be glamorous crime fighters or have leading roles in crime scene investigation television shows, but thanks to advances in forensic science, the insect world can play an important role as evidence that puts the bad guys behind bars.

In January, a new course offered by MSU Department of Entomology will show how the use of insects assists legal investigations and in solving crimes. The course, Forensic Entomology: The Role of Insects in Crime Scene Investigation, will use actual cases where insects tipped the evidentiary scales.

"The forensic entomology course is designed to accommodate undergraduate and graduate students as well as law enforcement professionals and anybody who simply has an interest in entomology or CSI," said Richard Merritt, entomology professor and department chairperson. "By offering the class online to degree program students and lifelong education students, we feel there will be a great opportunity for increased involvement and interaction within the class."

One of the cases covered in the course will explore how forensic entomologists collected insects from a windshield of a car found at the bottom of a Michigan river. These insects were then used to link a husband to his wife's murder. Another case in the course will explore how live insects on the remains of a murder victim exhumed from her grave after 37 years helped solve a crime.

Merritt will partner with Ryan Kimbirauskas, an MSU entomology doctoral student, to teach the class. They are two of only 11 board-certified forensic entomologists in North America and both have appeared in court as expert witnesses. Additionally, Merritt's work has been featured on Court TV, The New Detectives and in crime novels.

Richard Merritt, professor of entomolgy, looks for insect casings as part of an investigation for a cold case trial in Michigan.

The course will cover many different aspects of forensic entomology, from laws governing evidence collection to insect development and human decomposition. One specific course focus will be using insects to determine postmortem intervals and time of death.

The MSU Department of Entomology is one of the oldest and largest in the country. The department offers bachelors, masters and doctoral degree options through the College of Natural Science and the College of Agriculture and Natural Resources. The MSU Department of Entomology is home to the Albert J. Cook Arthropod Research Collection and the Bug House - a facility introducing kindergarten through sixth-grade children to insects.

The forensic entomology course begins in January and is available as both a credit and non-credit course. For more information, contact Richard Merritt at forensic@msu.edu.

Math and science improvement initative begins second phase

MSU and school districts in Michigan and Ohio recently marked the halfway point in a collaborative project to improve math and science education. Promoting Rigorous Outcomes in Mathematics and Science Education (PROM/SE) is a comprehensive research and development effort to improve mathematics and science teaching and learning in grades K-12.

The project began in 2003 and has largely focused on data gathering, awareness and community building. The program now shifts focuses on design strategies and implementing solutions to address the problems and issues.

The National Science Foundation-funded partnership involves CNS and the College of Education along with 62 school districts that account for more than 7,000 teachers and 350,000 students ranging from Kindergarten to grade 12.

PROM/SE recently hosted two-day workshops at locations in Michigan and Ohio to help educators with important scientific concepts and how to organize instruction to promote greater understanding. Assessments indicated that teachers began the workshop with a diverse set of understandings about these relationships. Activities were designed to challenge those understandings and deepen the knowledge of teachers across all grade levels.

The five-year PROM/SE project is funded through a $35 million partnership agreement from the National Science Foundation. The project involves six partners including MSU and five consortia of school districts in St. Clair County, Michigan; Ingham County, Michigan; Calhoun County, Michigan; Cleveland, Ohio; and Cincinnati, Ohio. More information is available at http://promse.msu.edu/.

CNS Alumni
Class notes

1940s

Mary (Mackie) McVicker (BS Biological Science '49) of Jackson, Michigan, is on the Board of Directors of the Jackson Symphony Guild and the MSU Alumni Club of Jackson.

Richard S. Johnson, MD (BS Zoology '49) of East Lansing, Michigan, has retired from practice as an OB-GYN and is an emeritus professor of human medicine.

1950s

Wayne Wolsey, PhD (BS Chemistry '58) of St. Paul, Minnesota, is a professor of chemistry at Macalester College and has received the 2005 Robert Brasted Award for Contributions to Chemistry Teaching at the College Level from the Minnesota Section of the American Chemical Society.

1960s

James Van Hare, MD (BS Mathematics '61) of Portage, Michigan, has closed his family practice office and entered semi-retirement making a limited number of house calls.

Raymond Gedman (BS Biological Science '64) of Concord, Michigan, is a retired elementary school principal and volunteers for Habitat for Humanity in Albion and the MSU Horticulture Gardens.

Henry Edelhauser, PhD (MS Physiology '64) of Dunwoody, Georgia, is director of research for Emory Eye Center and has received the Proctor Medal from the Association for Research in Vision and Opthalmology in recognition of his groundbreaking work on the physiology of the corneal endothelium and for elegant translation research from basic science to clinical applications.

Ed Sedor, PhD (PhD Chemistry '66) of Marinette, Wisconsin, has been named chairperson of the Town of Peshtigo Board of Supervisors.

Bill Sonsin (BS Mathematics '67) of Prescott, Arizona, retired from two different careers in computer services and financial planning and is a volunteer for the Service Corps of Retired Executives.

1970s

William Falk (BA Mathematics '70) of Arlington Heights, Illinois, is a principal in the Chicago office of Towers Perrin and is serving as 2005-06 chairperson of the Actuarial Board for Counseling and Discipline which serves five US-based organizations representing actuaries.

Robert McCullough (BA Mathematics '70, MA '71) of Big Rapids, Michigan, is a professor of mathematics at Ferris State University and recently received the Distinguished Teacher Award for dedication and excellence.

1980s

Jane Kaminski, DDS (BS Lyman Briggs – Zoology '82) of Detroit, Michigan, received a US patent for a forensic imaging guide.

Margaret Szpek (BS Medical Technology '84) of Livonia, Michigan, has joined the staff of Jockey Person to Person.

John Byrne, MD (BS Chemistry '88) of Troy, Michigan, is in private practice at Michigan Adult and Child Medicine. He is board certified in internal medicine and pediatrics and a fellow of the American Academy of Pediatrics.

1990s

Margaret Readdy, PhD (PhD Mathematics '93) of Lexington, Kentucky, was the keynote speaker for the Graduate Student Combinatorics Conference at the Univ. of Minnesota.

Jorge Santo Domingo (PhD Microbiology and Molecular Genetics '94) of Cincinnati, Ohio, is with the Environmental Protection Agency and recently received an agency-wide award for a paper on microbial source tracking.

Robert Ellis (BS Geological Sciences '95, MS Environmental Geoscience '99) of Canton, Michigan, has been promoted to Senior Scientist with ARCADIS.

Danielle (Diehl) Kopper (BS Lyman Briggs – Medical Technology '95) of Clayton, North Carolina, has joined LipoScience Inc. in Raleigh as Senior Client Service Specialist.

Deborah Hogan, PhD (PhD Microbiology and Molecular Genetics '99) of Boston, Massachusetts, is assistant professor of microbiology and immunology at Dartmouth Medical School and has been selected as one of 15 Pew Scholars in the Biological Sciences.

2000s

Keith Reynolds (BS Clinical Laboratory Sciences '00) of Fenton, Michigan, has been promoted to Chemistry Assistant Supervisor/ Clinical Instructor at Beaumont Hospital.

Corey Allen, DDS (BS Human Biology '01) of Gladwin, Michigan, has joined the dental practice of Ronald J. Kruske, DDS and Associates in Gladwin County.

Amy Spray (BS Lyman Briggs – Environmental Science and Management '02) of East Lansing, Michigan, is a consultant for natural resources at Public Sector Consultants and recently completed the Natural Resource Leadership Project through MSU's Department of Fisheries and Wildlife.

Abass Fahs (BS Astrophysics '03) of Herndon, Virginia, has joined Orbital Sciences Corporation as Systems Engineer in the Advanced Systems Group.

We want to hear from you! Send your alumni news to natsci4u@msu.edu or go to www.ns.msu.edu/alumni.

Donoghue honored by MSU and CNS

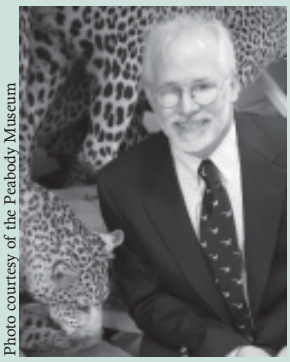


Photo courtesy of the Peabody Museum

Michael Donoghue

Biodiversity expert Michael J. Donoghue was recipient of the 2005 MSU Distinguished Alumni Award. Donoghue is a 1975 botany and plant pathology alumnus and he also received the CNS Outstanding Alumni Award earlier in the year.

The Distinguished Alumni Award recognizes MSU alumni who have distinguished themselves by obtaining the highest level of professional accomplishments and who posses the highest standards of integrity and character. The award was presented during the MSU Grand Awards Ceremony in October.

Donoghue is Director of the Peabody Museum of Natural History and the G. Evelyn Hutchinson Professor of Ecology and Evolutionary Biology at Yale University. His research combines particular groups of organisms, especially flowering plants and fungi, with theoretical work on the principles of systematics. He has played an important role in building Yale's Department of Ecology and Evolutionary Biology, created in 1998, and he is a past chair of the department. Donoghue is a member of the National Academy of Sciences and has a Ph.D. in biology from Harvard.

Nobel Prize co-recipient began his academic career at MSU

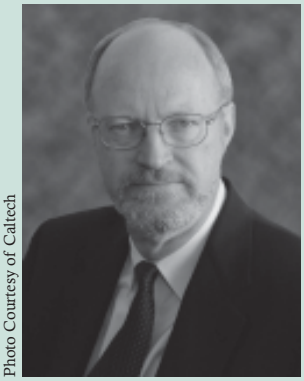


Photo Courtesy of Caltech

Robert Grubbs

Robert H. Grubbs, a co-recipient of the 2005 Nobel Prize in Chemistry, began his academic career as a faculty member in the MSU Department of Chemistry.

Dr. Grubbs was recruited to MSU as Assistant Professor of Chemistry in 1969, and promoted to Associate Professor with tenure in 1973. In addition to his fine teaching and student mentoring, Bob Grubbs initiated his fundamental research on metathesis – an organic reaction where parts of two reacting structures swap places – at MSU. Professor Grubbs moved to the California Institute of Technology in 1978, where his group has developed new catalysts for metathesis in organic synthesis, which led to this year's Nobel Prize in Chemistry.

Dr. Grubbs returned to MSU in 2003 and 1987 as a lecturer in the Dow/Karabatsos Lecture Series in Chemistry, and he remains close to his former colleagues.

"The lifetime of work Dr. Grubbs has put into metathesis benefits many aspects of science and MSU is privileged to have had him begin his career in the Department of Chemistry," said George Leroi, dean of the College of Natural Science.

Dr. Grubbs is the Victor and Elizabeth Atkins Professor of Chemistry in the Division of Chemistry and Chemical Engineering at Caltech. The Grubbs laboratory has pioneered advances olefin metathesis, an organic reaction involving redistribution of carbon-carbon double bonds. The reaction has many practical applications, and is used in synthesis of medicines, polymers and fuels.

Faculty elected fellows of the American Physical Society

Thomas Glasmacher and Michael Thoennessen were recently named fellows of the American Physical Society, one of the world's largest and most respected physics organizations.

Thomas Glasmacher is professor of physics and associate director for operations at the MSU National Superconducting Cyclotron Laboratory.

Michael Thoennessen is a professor of physics and associate director for nuclear science at the cyclotron.

Both Glasmacher and Thoennessen were recognized for their work studying atomic nuclei.

With the addition of Glasmacher and Thoennessen, more than half of the physicists at the cyclotron laboratory have been designated as fellows. The selection as a society fellow is considered one of the highest honors a physicist can receive because it demonstrates accomplishments and contributions to physics that are judged exceptional by colleagues who are best able to judge their value.

Four CNS faculty recognized with university's highest honor

Four College of Natural Science faculty members were among the 10 named University Distinguished Professors (UDP) by MSU in 2005. The UDP designation is in recognition of achievements in the classroom, laboratory and community.

Joan Ferrini-Mundy is associate dean for Science and Mathematics Education in the College of Natural Science. She is director of the Division of Science and Mathematics Education and co-director of the Center for Research in Mathematics and Science Education and co-director of TNE and PROM/SE. Her interests include the teaching and learning of calculus, the nature and characteristics of reform in K-12 mathematics education, and mathematics teacher education.

John Frost is Professor of Chemistry and Director of the Center for Plant Products and Technologies at MSU. Frost's research group genetically engineers microbes for use as synthetic catalysts and interfaces these biocatalysts with traditional chemical catalysis. The Frost group is internationally recognized for its research in the field of green chemistry, where group research is directed toward creation of sustainable, environmentally benign syntheses of a variety of chemicals.

Katherine Gross is Director of MSU's Kellogg Biological Station and a Professor of Plant Biology. Gross is one of the leading plant ecologists in the United States and her research integrates population, community and ecosystem ecology. Gross focuses on causes and consequences of species diversity in plant communities, particularly grasslands.

David Morrissey is a Professor of Chemistry and a faculty member of the National Superconducting Cyclotron Laboratory. He has served as Associate Director for Nuclear Science at the NSCL and recently as Chair of the Division of Nuclear Chemistry & Technology of the American Chemical Society.

The UDP designation is among the highest honors bestowed on faculty members. There are 94 faculty members who have received this designation since it was established in 1989.

Endowment to Connect Students with Leaders

An endowment establishing a lecture series on science and mathematics education in the Lyman Briggs School of Science was recently established by microbiology alumnus Mary Schroth.

The Carl and Frances B. Schroth Lecture Series will provide an opportunity for Lyman Briggs and Honors College students to learn from leaders in the field of science and mathematics education.

"Both Lyman Briggs and the Honors College presented me with many unique and valuable opportunities while I was a student at MSU," Mary Schroth said. "The lecture series will provide an enhanced experience for MSU students by providing them exposure to individuals who are working in various scientific fields."

Mary Schroth graduated in 1981 with a degree in microbiology from Lyman Briggs School and Honors College. She received a masters degree form MSU in applied mathematics in 1985. She is actively involved with the CNS Alumni Association and serves on the CNSAA Board of Directors.

She named the lecture series in honor of her parents in recognition of their many years of encouragement and sacrifice. Mary Schroth and her two sisters all graduated from MSU.

Marik Fund Connects MSU and Czech Republic

Attracting mathematics graduate students and visiting faculty from the Czech Republic is the goal of the Jan and Jirina Marik Fund for Mathematics.

Petr Honzik

Petr Honzik was chosen by the MSU Department of Mathematics to serve as a visiting instructor in mathematics. The support for his travel expenses is from the Marik Fund.

Honzik received his Ph.D. in May from a joint program between the University of Missouri and Charles University in Prague. His academic studies have focused on estimates of norms of operators on function spaces and Maximal Fourier multipliers.

Established to honor the late Jan Marik, the fund encourages continued education and research opportunities in the area of real variables and functional analysis mathematics. In addition to enabling the Department of Mathematics to host a visiting faculty position, the fund also provides travel expenses of a Czech graduate student to come to MSU to obtain a Ph.D. and it supports research-related travel for a graduate student or junior faculty member.

The endowed fund established by Jirina Marik, commemorates the ties Jan Marik had between MSU and Charles University in Prague. Marik joined the faculty of Charles University in 1953 and became a full professor in 1960. Marik was one of the premier mathematicians in Czechoslovakia.

Soon after arriving at MSU in 1969, the communist government asked to revoke his visa. Marik was offered a permanent position at MSU where he remained until retirement in 1991. While at MSU, he helped develop *Real Analysis Exchange* – a biannual refereed mathematics journal. Professor Marik had strong ties with both Charles University and MSU, and the Marik Fund ensures those connections will forever remain and benefit scholarship at both institutions.

New Endowments Established in CNS

The following list of endowments have been established since January 15, 2005 to benefit students and faculty within the College of Natural Science:

Actuarial Science Endowed Scholarship
Dr. Aureal T. Cross Endowed Graduate Fellowship in Geological Sciences
Darwin Endowed Scientific Literacy Fellowship
James L. Dye Endowed Chair in Materials Chemistry
Larry D. Fowler Endowment in the College of Natural Science
Haenni Family Scholarship in the College of Natural Science
Professor Rudolph Hugh Endowed Chair in the Department of Microbiology and Molecular Genetics
Keith R. and Sue B. Knapp College of Natural Science Enhancement Endowment Fund
Keith R. and Sue B. Knapp Endowed Scholarship in the College of Natural Science
Otto F. and Jenny H. Krauss Charitable Foundation Distinguished Fellowship
George E. Leroi - College of Natural Science Strategic Visioning Fund
MPI Research Inc. Undergraduate Research Grants
Carl and Frances B. Schroth Lectureship in LBS and Honors College
Margaret E. Smith Medical Technology Program Endowed Student Award
Arnold D. and Helen E. Suomi Endowed Scholarship
Taita Chemical Company and Otto Cheng Endowed Fellowship
Richard and Patricia Wagner Endowed Distinguished Lectureship
Richard and Patricia Wagner Endowed Graduate Fellowship(s)
Richard and Patricia Wagner Endowed Professorship
Richard and Patricia Wagner Endowed Undergraduate Research Scholarship
Richard and Patricia Wagner Research Endowment
Wedemeyer Family Endowed Undergraduate Research Scholarship

Lab renovations and expansion continues at Lyman Briggs School in Holmes Hall

The first phase of renovations at the Lyman Briggs School of Science (LBS) was completed shortly before the start of fall semester. With approximately 1600 undergraduate students, Briggs offers the benefits of a small, liberal arts college with the resources of a great research university. This residential learning community, located in Holmes Hall, is devoted to studying the natural sciences and their societal context.

As part of a $5.8 Million dollar renovation, LBS is updating the 38-year-old laboratories in Holmes Hall in order to provide students with the latest technology while accommodating an increase in the number of LBS students. Students have started using the new physics, chemistry and preparation labs this semester.

"The response in supporting the renovation project that will dramatically modernize the existing facilities and create additional laboratories has been tremendous," said Elizabeth Simmons, director of the Lyman Briggs School of Science. "The new lab classrooms will allow 25 percent more undergraduates to enroll in Briggs, where students enjoy smaller class sizes, do research with teams of fellow students, study the societal context of science and have more interaction with professors."

Photo by Harley Seeley

Steven Spees (center), associate director of the Lyman Briggs School of Science, gives a tour of the renovated facilities to board members from the Rollin M. Gerstacker Foundation. The Foundation provided a $1.5 million gift toward the renovations.

Freshman enrollment in LBS is increasing from 500 students to 625 by fall 2006.

The second phase of construction will renovate the remaining chemistry, biology and preparation labs in time for the arrival of the larger student cohort.. The redesigned facilities will provide contemporary and safe teaching laboratories for emerging scientific fields; flexible and technologically advanced classrooms; modernized ventilation, electrical, disposal and gas systems; and improved student/faculty research space.

The Rollin M. Gerstacker Foundation provided a grant that funded $1.5 million of the renovations. The Gerstacker grant supports the renovation of two chemistry and two biology laboratories and associated supply and preparation rooms. The supported labs will be named the Rollin M. Gerstacker Foundation Teaching Laboratories.

The Lyman Briggs School of Science is an undergraduate, residential learning community devoted to studying the natural sciences and their impact on society. LBS offers the benefits of a small, liberal arts college with the resources of a great research university. For more information on the expansion or the Lyman Briggs School, visit the website at: http://www.lbs.msu.edu/.

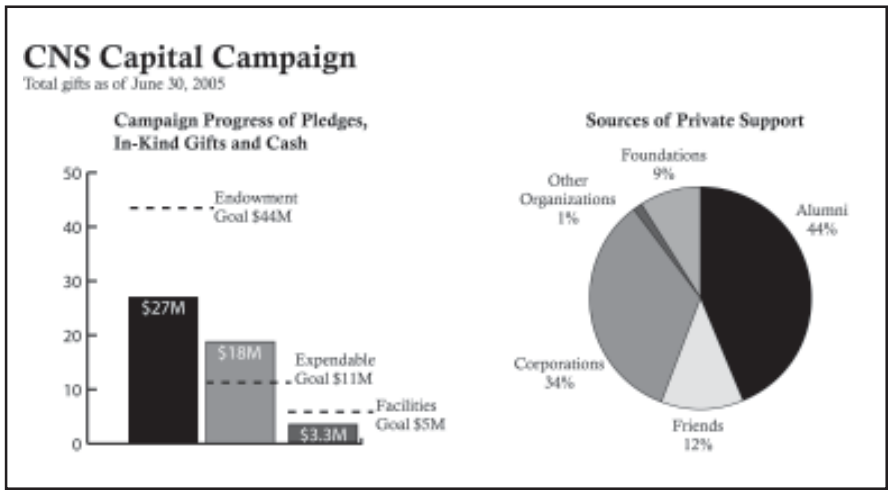
Waiting to be renovated:

Recently renovated:

These recent photographs show the difference between two Lyman Briggs School chemistry labs in Holmes Hall. The lab on the left will be renovated in the second phase of construction. It will look familiar to LBS alumni since not much has been updated since it opened 38 years ago. The lab on the right was renovated and opened to students in September 2005.

CNS students and programs benefit from endowments

By Suzette Hittner
Senior Director of Development



Michigan State University recently announced that The Campaign for MSU, a fundraising project that was publicly announced three years ago, has surpassed the $1 billion mark. The ultimate goal for the College of Natural Science is to reach $60 million by June 30, 2007, of which, over 70 percent is to substantially increase endowment assets. We are thrilled to report that 22 additional new endowments were established within the College – an increase of 12 percent *(a listing is on page 8)*.

Private giving helps make it possible for the College to transform the lives of those who are touched by its teaching, research and public service. Student scholarships, money for creative faculty endeavors, research and development, and funds for instructional equipment, technology enhancements and state of the art classrooms are a few of the ways private dollars are used on campus.

CNS continues to benefit from the generosity of thousands of contributors. Reasons for giving vary as widely as their interests and their financial circumstances. What they all have in common is the desire to help make a great college even greater and to help students change their lives. If you share that desire, you might be surprised to learn how many options are available.

This fall eight students were recipients of the William A. Sells, Jr. Endowed Scholarship receiving partial tuition awards. Established in 1989 in honor of William Sells Jr., a 1937 Microbiology graduate, this scholarship benefits outstanding premedical students, like Salem Kamalay, with financial need who are majoring in one of the biological science programs of the College. Here is what Salem E. Kamalay wrote in a letter to the College:

"I cannot begin to express the gratitude I feel towards this investment in my future. The award enabled me to quit the maintenance job I have been working in the evenings during school. It allows me more time for volunteer work at the hospital, research, and studying for my impending MCAT. These activities are critical in my preparation for medical school. This is the first scholarship I have ever received and I will remember it forever. It inspires me to keep working." - Salem E. Kamalay

While all gifts to the College contribute to the high quality of education, research, and service, endowments are particularly meaningful as they offer a dependable, long-term source of funding. Endowed funds differ from others in that the total amount of the gift is invested. Each year, only a portion of the interest earned is spent while the remainder reverts to principal. In this respect, an endowment is a perpetual gift and is part of MSU's heritage and tradition… forever.

Making a charitable gift is a demonstration of trust by the thousands of alumni and friends who generously make commitments to the college's future. We can only earn this trust by being good stewards of your gifts. We take this responsibility seriously.

These are exciting times for our faculty and students. Thank you for helping to ensure a bright future.

Ways of giving to MSU and the College of Natural Science

Gifts to Michigan State University advance the institution's mission while providing donors with many advantages.

Outright gifts
The simplest way to contribute is an outright cash gift. Gifts of cash provide donors who itemize on their tax returns a deduction to the fullest extent of the law.

Securities and real estate
These popular alternatives to cash generate a possible double tax benefit with income tax and potential tax on capital gains.

Matching gifts
More than a thousand companies throughout the country match employee gifts. Forms are available form personnel offices at these companies.

Bequests
Wills offer another avenue for giving to MSU and can take many different forms depending on the intention.

Life income plans
A life payment plan allows a donor to make a substantial gift and receive income in return. There are several different types which offer substantial tax benefits.

Retirement plans
Careful structuring and gifting of retirement assets can often preserve more assets for heirs while providing a gift to MSU.

For exact details or more information on supporting the College, contact Suzette Hittner in the CNS Development Office at (517) 353-9855.

College of Natural Science

Honor Roll of Donors

The many alumni and friends whose names appear on the following pages have helped lay the financial foundation for the College of Natural Science. Their support allows the college to provide scholarships to promising students, assist faculty with research and academic pursuits and enhance the natural science community at MSU through special projects and activities.

Recognition on these pages represents contributions made between July 1, 2004 and June 30, 2005. While we have carefully reviewed the names listed, we apologize for any errors or omissions and encourage you to contact the CNS Development Office at (517) 353-9855.

Linda E. Landon Society

Named in honor of the first female faculty member at Michigan agricultural College, the Linda E. Langdon Society recognizes the supporters who have named the college as a beneficiary of their estate or planned giving arrangement.

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Mr. William N. Hurja
Mr. Matthew T. Jeska
Deane and Jeanne Kilbourne
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Roger and Gail Kolasinski
Mrs. Dorothy I. Krentel
George H. Lauff, Ph.D.
Thomas Mall
Dr. Leland G. Merrill, Jr.
Drs. G. Thomas and Robin L. Morgan
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Dr. and Mrs. Sigurd O. Nelson
Leo V. and Rebecca Nothstine
Mr. Jay P. O'Brien
Emory James and Mary Kathryn Patmos
Mrs. Shirley G. Pendell
Mr. Raymond C. Perry, Jr.
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David E. Randolph, M.D.
Marvis A. Richardson, Ph.D.
Ms. Mary M. Schroth
Mark and Kathleen Scriber
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Dr. Duncan F. Sibley and Margaret C. Sibley
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Ms. Margaret E. Smith
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Mrs. Helen M. Snider
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Brad and Jane Thompson
Mr. Harold F. Tolles
Karl and Nancy Vorres
Richard and Patricia Wagner
Dr. Marvin J. Whalls
Warren and Anneliese Wood
Mr. Keith L. Younger
Matt and Mary Ellen Zabik

Donor Clubs

This section lists the members of university-wide donor clubs whose gifts are designated in whole or more than ten percent to the College of Natural Science. Donor club memberships are based on cumulative giving to all MSU program.

Kedzie Society

Named for the eighth president of Michigan State University, the Kedzie Society recognizes individuals who make a commitment between $1,000,000 and $4,999,999 or a documented planned gift of at least $1,500,000.

Andrew and Sandra (Dosser) Conner
Randolph L. Cowen
Dr. and Mrs. Kirkwood E. Faber
Gregory F. Hauser
Mr. Harley N. Hotchkiss
William N. Hurja
Henry and Lois Blosser
Drs. G. Thomas and Robin L. Morgan
Dr. Milton E. Muelder
Marvis Richardson
Barnett and Ritta Rosenberg
Richard and Patricia Wagner

Shaw Society

Named for the eleventh president of MSU, the Robert S. Shaw Society recognizes the generosity of individuals who make a commitment between $500,000 and $999,999 to MSU or a documented planned gift of at least $1,000,000.

Keith and Sue Knapp
Glenda and Peter Lappan
Dr. George H. Lauff
Elizabeth Difanis Phillips
Helen M. Snider
Jean and Jim Valrance

Abbot Society
Named for the third president of MSU, the Theophilus C. Abbot Society recognizes the generosity of individuals who make a commitment between $250,000 and $499,999 to MSU or a documented planned gift of at least $500,000.

Pam and Bill Costabile
Mark and Sandy Ehlert
Richard and Claire Gantos
Dr. Ronald E. Goldsberry
Drs. Mark & Toula Guilfoyle Anastasia & Dorothea Guilfoyle
Dr. and Mrs. James D. Hoeschele
Thomas and Mary Krigas
Leo V. and Rebecca Nothstine
Drs. Richard and Renate Snider

Snyder Society
Named for the seventh president of MSU, the Jonathan L. Snyder Society recognizes the generosity of individuals who make a commitment between $100,000 and $249,999 to MSU or a documented planned gift of at least $200,000.

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Ralph and Dorothy Bertolacini
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Cec and Don Borgeson
Elwood and Linda Collins
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Linda Petro Ulrey and Laurence Ulrey
Loretta L. VanCamp
Dr. Berttina B. Wentworth
Warren and Anneliese Wood
Mr. and Mrs. Kenneth B. Yerrick

Hannah Society
Named for the twelfth president of MSU who served for 28 years, the John A. Hannah Society recognizes the generosity of individuals who make a commitment between $50,000 and $99,999 to MSU or a documented planned gift of at least $100,000.

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Mr. Gordon Smale
William L. and Andrea K. Smith
Clarence and Loretta Suelter
Russell and Laura Whalls
Dr. Daniel Williams

Beaumont Tower
Chartered during the University's first capital campaign, the Beaumont Tower Society is named after the one landmark that symbolizes MSU. This society recognizes the individuals who make a commitment between $25,000 and $49,999 to MSU.

Brian Andress (LBC '82) and Linda Aulicino (LBC '83)
Art and Mary Apkarian
Walter Blinn
Pat Merry and Don Borseth
Tom and Sally Crawford
Douglas and Marjorie Deline
Dave and Shari Devendorf
Larry and Lois Dimmitt
Jerry and Carole Dodgson
Scott Essex and Brooke Corley
The Carl Foiles Family
Donna Gibson
Mrs. Leona C. Good
Gary and Terese Grondin
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Gloria and F.R. (Pete) Lehman
Ellen and George Leroi
Joseph and Marjorie Longo
Dr. Sam and Susie Mallory
Mrs. Jirina Marik and the late Dr. Jan Marik
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John L. Wang and Lucille D. Fallon
P.K. and Vivian Wong
Mrs. Dorothy J. Young
Matt and Mary Ellen Zabik

Presidents Club
Named in honor of the presidents who guided the University to its present eminence, the Presidents Club recognizes individuals who make a commitment between $10,000 and $24,999 to MSU.

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Mr. Thomas E. Ayres
George Ball
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1855 Club

This club recognizes faculty, staff and retirees who demonstrate leadership by making a minimum $5,000 pledge with a minimal annual contirbution of $1,000.

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R. and Saleela Hollingsworth
Ruth Matthews

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Juanita Warner
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Barbara Wilson

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Steven and Laura Triezenberg
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Ralph and Lyn Wisner
Lynda and John Woodson
Beth Worden

Grandparents University Planned for Summer

Grandparents and grandchildren are invited to join the CNS Alumni Association and the College of Agriculture and Natural Resources Alumni Association for the inaugural Grandparents University.

This three-day workshop is a chance for children (recommended ages 7-12) and their grandparents to come together and learn from each other in a dynamic atmosphere at the MSU campus.

This will be an intergenerational educational experience in which a grandparent may "enroll" with a grandchild for the special event. Pairs will be housed and fed in university housing suites, taught in MSU classrooms and facilities, and after completing the curriculum, will "graduate" at a special ceremony for the children.

Participants will have more than 20 different programs to choose from, and each program will be an interactive and fun opportunity to explore science and agriculture at MSU. For more details, go to www.ns.msu.edu or e-mail natsci4u@msu.edu.

CNS alumni help celebrate MSU's sesquicentennial

CNS alumni and family members dressed in lab coats, goggles and gloves to form the "Beaker Brigade" and represent the College of Natural Science in MSU's Sesquicentennial Parade in October.

CNSAA seeks nominations of alumni and faculty

The CNS Alumni Associations is seeking nominations for several awards honoring alumni and faculty of the College of Natural Science. These awards are a wonderful way for alumni to honor a classmate, colleague, mentor or professor.

CNS Outstanding Alumni Award: recognizes CNS alumni for professional achievement. Award recipients exemplify the MSU commitment to the land-grant mission through their dedication to professional, community and MSU service.

CNS Recent Alumni Award: recognizes a CNS alumnus who has graduated within the last 15 years and shown outstanding professional growth.

CNS Meritorious Faculty Award: recognizes a faculty member (active or retired) who has demonstrated excellence in the areas of teaching and research.

The deadline for nominations is January 15, 2006 and everyone is welcome to submit a nomination. For more details or nomination forms, contact Mike Steger at (517) 432-4561 or e-mail natsci4u@msu.edu.

MICHIGAN STATE UNIVERSITY

College of Natural Science
103 Natural Science Building
East Lansing, MI 48824-1115

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Michael Steger, editor
(517) 432-4561 | natsci4u@msu.edu
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