



MICHIGAN STATE
UNIVERSITY

EMPOWER
EXTRAORDINARY

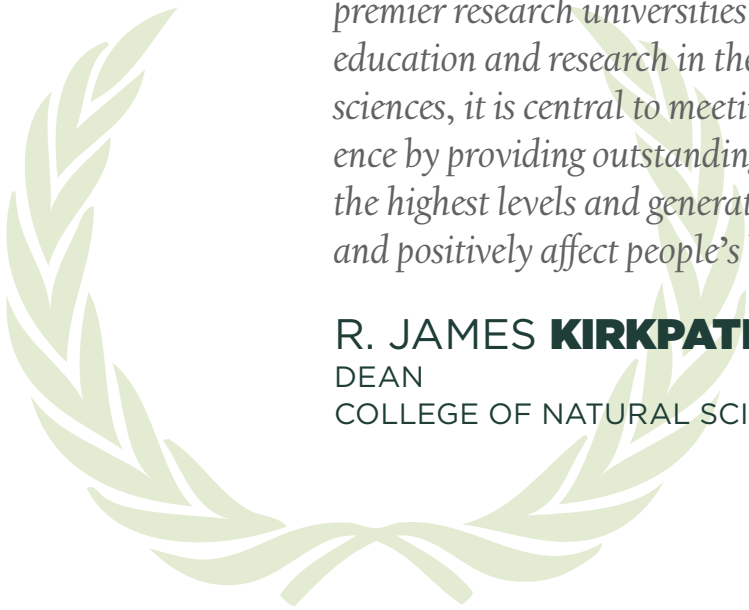
THE CAMPAIGN *for* MICHIGAN STATE UNIVERSITY

Supporting the
COLLEGE OF NATURAL SCIENCE

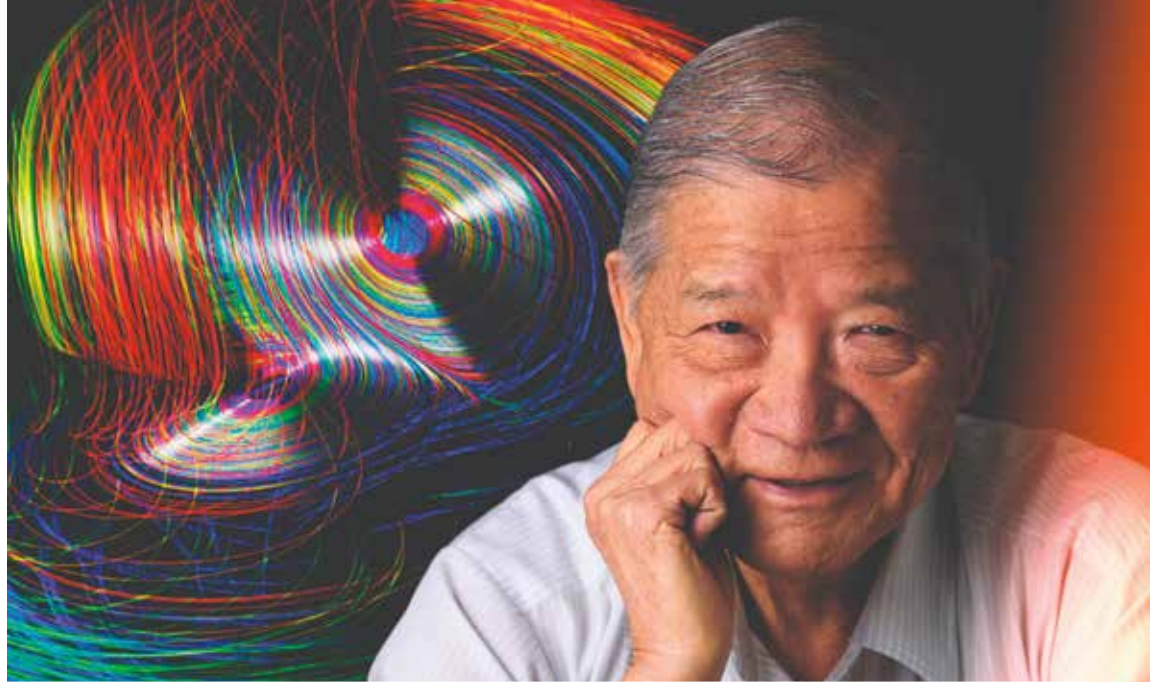
Bringing Scientific Solutions to the World's **Most Complex Problems**

“The College of Natural Science is at the core of one of the world’s premier research universities. With a clear focus on excellence in education and research in the physical, biological and mathematical sciences, it is central to meeting MSU’s objectives of making a difference by providing outstanding instruction, advancing knowledge at the highest levels and generating real-world solutions that directly and positively affect people’s lives.”

R. JAMES KIRKPATRICK
DEAN
COLLEGE OF NATURAL SCIENCE



*Tein-Yien Li, University
Distinguished Professor,
was the first to introduce the
word “chaos” in the field of
mathematics.*

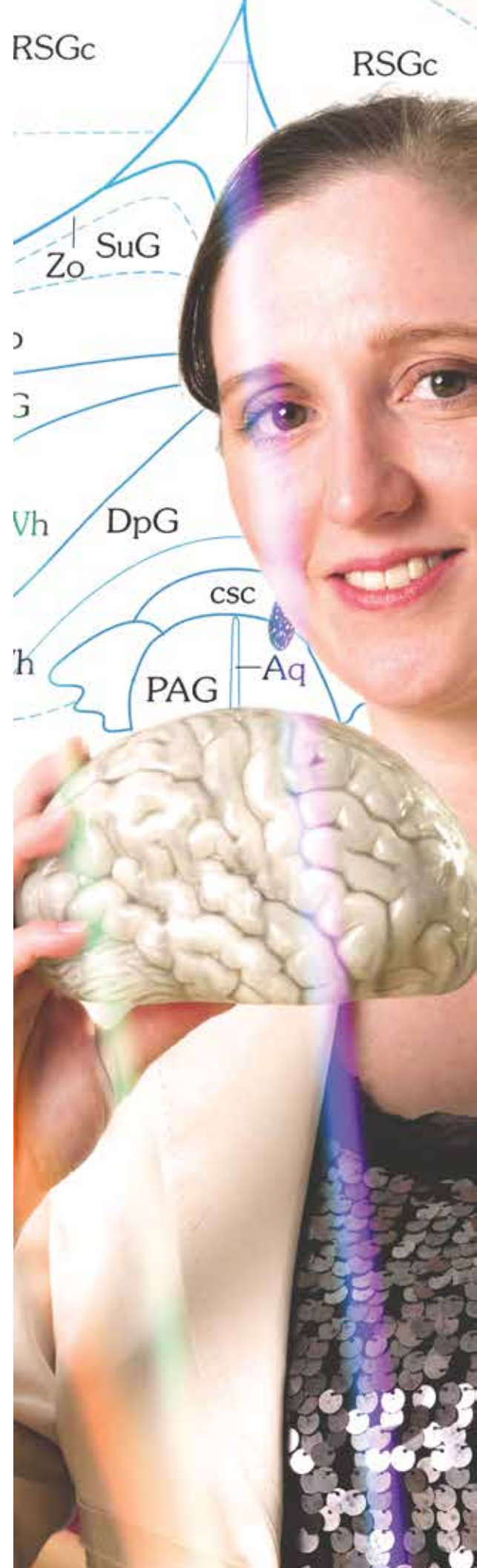


Envisioning **Extraordinary**

In keeping with MSU President Lou Anna K. Simon’s vision for a university that “expands the horizons of possibility for humanity through the pursuit of knowledge, engagement and opportunities to apply knowledge to improve the world,” the College of Natural Science (NatSci) vision is to be a scientific enterprise of the highest academic caliber. Our mission is to undertake innovative, leading-edge research in the physical, biological and mathematical sciences, and to provide outstanding undergraduate and graduate education in the context of a great research university.

We remain focused on enhancing student experience; enriching community, economic and family life; expanding our research and teaching excellence; and advancing a culture of high performance. The college’s campaign priorities reflect Michigan State University’s broad capital campaign themes—An Engine of Opportunity; A Force for Creativity, Discovery, and Learning; A Global Problem Solver; and A Vibrant Community. Within this context, we invite you to review our goals and discover why they are so relevant to today’s challenges.

THE COLLEGE OF
NATURAL SCIENCE
IS AWARDED AN
AVERAGE OF
**\$28 MILLION IN
RESEARCH GRANTS
ANNUALLY.**



MSU is a hotbed of scientific inquiry and NatSci plays a key role in that standing as a national and international leader in science and math education and research.

- More than 800 faculty and staff members undertake leading-edge research and offer a world-class education in our 27 departments and programs.
- NatSci is awarded an average of \$28 million in research grants annually.
- Each year, the college provides extraordinary educational opportunities to 5,000 undergraduate students and 1,000 graduate students.
- NatSci boasts more than 45,000 alumni worldwide.



**MSU IS
AMONG THE
TOP 100
RESEARCH
UNIVERSITIES
WORLDWIDE.**



FOSTERING A PASSION *for* **SCIENCE**

The challenges facing society in the 21st century are complex. Solutions require extraordinary people and a steady stream of new knowledge. In NatSci, the passion for science germinates before students first arrive as freshmen, takes root as study and research stimulate further discovery, and flourishes throughout the uppermost levels of scientific research carried out by our faculty, postdoctoral fellows and students.

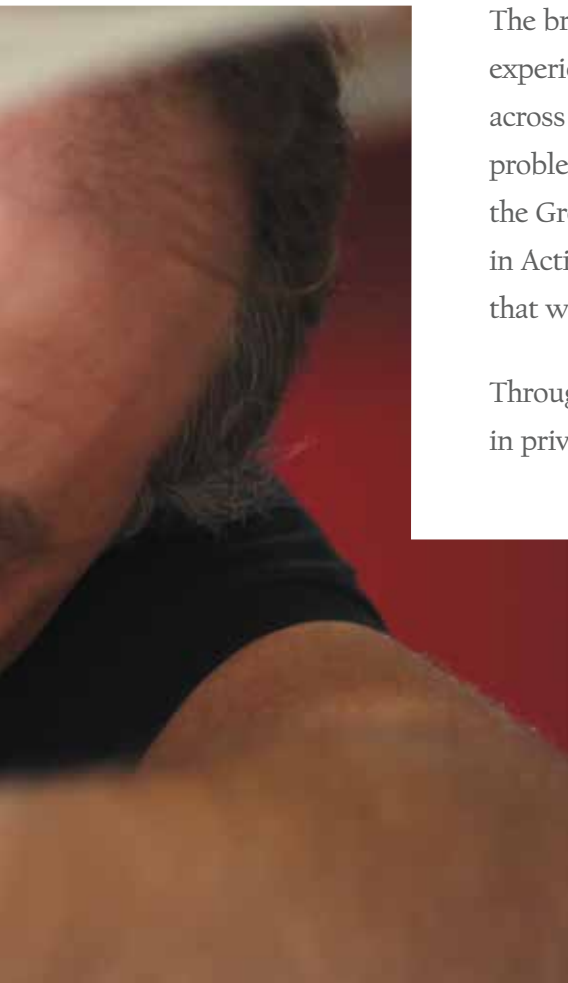


OUR CAMPAIGN **VISION**

The breadth and scale of NatSci gives us a unique advantage to integrate the experience of our students at the highest levels. A collaborative environment across disciplines enhances our ability to define and solve fundamental problems. World-leading resources such as the Facility for Rare Isotope Beams, the Great Lakes Bioenergy Research Center, the BEACON Center for Evolution in Action, and the MSU-DOE Plant Research Laboratory add to the capabilities that we offer our students and the world.

Through the campaign for Michigan State University, we seek to raise \$74 million in private support to galvanize our strategies to design a bolder future.

Associate Professor Bruno Basso works on a drone that he uses for his research in the Department of Geological Sciences. His research deals mainly with water, carbon, nitrogen cycling and modeling in agro-ecosystems, and spatial analysis of crop yield.





An Engine of **OPPORTUNITY**

Support for undergraduate and graduate students is essential to MSU's ability to support student success and to attract and retain the best students. Thus, endowment funds to support graduate fellowships and undergraduate research scholarships are a high priority.

Competition for the best graduate students is intense, and fellowships are essential to attract and retain them. Such fellowships will be even more important in the future as worldwide scientific competition increases. Our goal in this campaign is to raise \$16.25 million in fellowship endowment so that we can provide 25 additional graduate fellowships.

For undergraduate students, opportunities to undertake research and engage in independent projects are critical to their future success. The number and diversity of research opportunities available to students at MSU are unparalleled, and the objective of NatSci is to provide these opportunities to all students who want one. In this campaign, our goal is to expand endowed funding so that 80-90 percent of our undergraduates will be able to benefit in this way. To do this, we are looking to raise \$12.75 million, which will provide 250 undergraduate research scholarships on an annual basis.

**OUR FUNDING GOAL
TO INVEST IN STUDENTS'
SUCCESS AMIDST A
CHANGING ECONOMIC
LANDSCAPE IS
\$29 MILLION.**

“The fellowship support that I received from the College of Natural Science allowed me to turn a graduate course project into a full-blown study of the proof opportunities in high school geometry textbooks. I used the work from this study as a writing sample in my job search, which ultimately landed me a faculty position that I love. I am optimistic that this NatSci-supported research will have a major impact in mathematics textbooks and classrooms, and I know for a fact that it made a significant difference in my professional trajectory.”

SAMUEL OTTEN

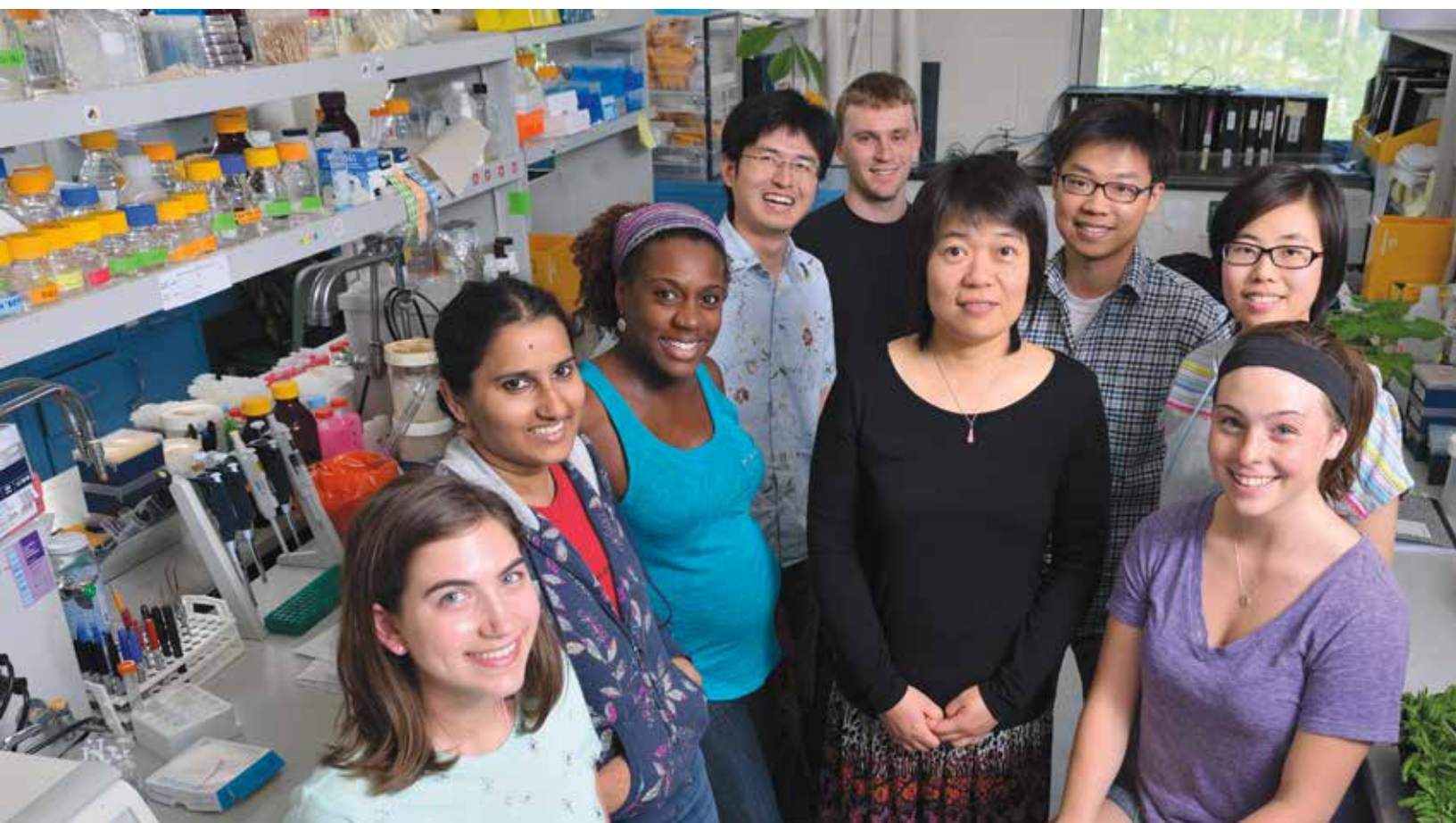
Physics, '12

ASSISTANT PROFESSOR
UNIVERSITY OF MISSOURI

“MSU is an R-1 university, so that means that we’re getting the chance to be involved in some of the top research in the world as an undergraduate. Being one of the few geologists to look at and study the rocks and formations in Alaska, and to do it in such detail with the high-precision lasers and microscopes available to us—that’s an amazing feeling!”

KRAIG KOROLESKI

Geological Sciences, '13





A Force for

CREATIVITY, DISCOVERY, AND LEARNING

Endowments are the hallmark of great universities. Because of their permanence, endowments assure excellence by making certain that quality teaching, research and engagement can be conducted in perpetuity. In spite of the ebb and flow of the economy and other resource challenges, our work must endure and continue. Endowed faculty positions allow us to compete nationally and internationally to attract the most outstanding educators and researchers, and to think long term about making investments in intellectual directions that will have an impact throughout the 21st century.

Equally important, great faculty members attract great graduate students, who work side-by-side to accomplish our ambitious research and educational agenda. Great faculty members also attract grant funding that further sustains our research. The competition for federal research dollars is increasing, and in this new funding environment, the institutions that will survive and make a difference are those with endowed chairs and professorships. We intend to be among those institutions. In this capital campaign, we plan to grow from our current pool of 15 endowed chairs and professorships to 30.

Melanie M. Cooper receives the Lappan-Phillips professorship medallion from MSU Provost June Pierce Youatt during her investiture ceremony.



OUR FUNDING GOAL TO CREATE ENDOWED CHAIRS AND PROFESSORSHIPS IS **\$33.5 MILLION.**

“The recognition that comes with this professorship means a lot to me, both as a researcher and for what it will add to the field as a whole. The fact that a major research university has endowed a professorship with an emphasis on discipline-based education research means that this emerging field is being acknowledged as an important part of academic excellence and that it has a vital role to play in ensuring student success.”

MELANIE M. COOPER
LAPPAN-PHILLIPS PROFESSOR OF SCIENCE EDUCATION
COLLEGE OF NATURAL SCIENCE

A Global

PROBLEM SOLVER

In NatSci, our faculty members and students are hard at work, tackling some of the world's most challenging problems. Our advances in the physical, mathematical and biological sciences are leading to advanced applications in such fields as nuclear and high energy physics, evolution, ecology, advanced mathematics, plant science, and the basic science of human disease. We are making extraordinary advances in bioenergy and alternative fuels, water research, materials for energy capture and storage, environmentally friendly methods for chemical production, and metabolic diseases such as diabetes and obesity.

OUR FUNDING GOAL
TO FORGE CREATIVE
SOLUTIONS TO THE
WORLD'S GRAND
CHALLENGES IS
\$5.5 MILLION.





“To supply food and fuel for the next century, there is a need to increase the efficiency with which photosynthesis captures solar energy. It is also important to deal with the impact of climate change, because photosynthesis is particularly sensitive to fluctuations in environmental conditions. MSU provides and nurtures an environment of strong interdisciplinary collaborations, which is critical to successfully addressing major issues in energy and food productivity.”

DAVID KRAMER

HANNAH DISTINGUISHED PROFESSOR IN PHOTOSYNTHESIS AND
BIOENERGETICS AND INTERNATIONALLY RECOGNIZED LEADER
IN PHOTOSYNTHESIS
COLLEGE OF NATURAL SCIENCE

“MSU and the College of Natural Science have provided a wonderful environment to develop a scientific career in plant and microbial sciences. I am indebted to my former and current lab members for their many contributions and to my colleagues at MSU for their guidance and memorable collaborations.”

SHENG YANG HE

MSU UNIVERSITY DISTINGUISHED PROFESSOR, AAAS FELLOW,
HOWARD HUGHES MEDICAL INSTITUTE
INVESTIGATOR AND INTERNATIONALLY RECOGNIZED LEADER
ON PLANT-PATHOGEN INTERACTIONS
COLLEGE OF NATURAL SCIENCE



A Vibrant **COMMUNITY**

World-class research and teaching requires first-rate facilities to allow for the very best teaching, learning and science to occur. Continued and increased funding is needed to purchase state-of-the-art equipment and revitalize laboratories to ensure that we maintain a world-class level of scientific inquiry. Funding priorities in this area include:

- Significant support for a new, state-of-the-art interdisciplinary science building.
- Enhanced core facilities and new laboratories to support interdisciplinary research.

Further, a vibrant, world-class academic community also requires that strategic funds be made available to college leadership so that seed investments can be made to programs and initiatives that hold great promise for the college.

**OUR FUNDING GOAL
FOR STRATEGIC
INVESTMENT AND FACILITY
ENHANCEMENT IS
\$6 MILLION.**

“Many of our college facilities are excellent, but other laboratories, buildings and equipment are inadequate to keep pace with the caliber of faculty members and students who use them. As our program continues to grow, it will be critical for our facilities to be as current and advanced as the research occurring within them.”

DAVID DEWITT
ASSOCIATE DEAN OF RESEARCH
COLLEGE OF NATURAL SCIENCE

Your Gift

Makes a **Broad and Lasting Impact**

The College of Natural Science is at the forefront of innovations and discoveries that have solved some of our most challenging problems and have improved quality of life. From the discovery of the cancer chemotherapy treatment, Cisplatin, to the engineering of oil-rich plants for biofuels to more nutritional food products and the development of leading-edge “green” chemistry for drug-synthesis, the college has placed itself at the vanguard of scientific knowledge.

The success of this campaign will enable us to strengthen the college and position it for opportunities and challenges yet to come, and will ensure that future alumni have the education they need to compete for jobs and to lead the nation in maintaining and building its scientific competitiveness and leadership. We'll only be able to do this with your help.

Your support of NatSci will have a broad and lasting impact. Your personal involvement and support will ensure that the outstanding students, staff and faculty members will have the critical resources and training they need to lead the world in education and research in the 21st century and beyond.

I hope you will consider joining us in making a difference for the future of natural science, from astronomy to zoology and beyond!

R. JAMES KIRKPATRICK
DEAN
COLLEGE OF NATURAL SCIENCE



Every day, NatSci faculty, staff and students are hard at work, undertaking leading-edge research to discover the next great thing.



COLLEGE OF NATURAL SCIENCE

ADVANCEMENT OFFICE

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SPARTANS WILL.

MAKE A DIFFERENCE *and*
EMPOWER EXTRAORDINARY TODAY.

EMPOWER.MSU.EDU

#EmpowerMSU

COVER IMAGE:

The National Superconducting Cyclotron Laboratory (NSCL) at MSU is one of the leading rare isotope research facilities in the world. In addition, MSU awards approximately 10 percent of the nation's nuclear science doctorates and, according to U.S. News & World Report, is the best program in the nation for nuclear physics graduate education.