MSU’s Empower Extraordinary Capital Campaign

• October 24 – Launch of “public phase” of campaign.
• Multi-year project – Began in 2011 and will continue until 2018.
• Overall campaign goal: $1.5 billion
NatSci goal: $74 million
$29 million raised to date
Four main campaign priorities/targets
An Engine of Opportunity

Student scholarships and fellowships

Goal: $29 million

• $16.25 million to provide 25 additional graduate fellowships.

• $12.75 million to provide 250 undergraduate research scholarships annually.
A Force for Creativity, Discovery and Learning

Endowed faculty positions

Goal: $33.5 million

• Nat Sci currently has 15 endowed chairs and professors.

• Plan to add 15 more of these positions over the next 5 years.
Christopher Benning, MSU Foundation Professor
Marc Breedlove, Barnett Rosenberg Chair
Robin Buell, MSU Foundation Professor
Andrew Christlieb, MSU Foundation Professor
Matthew Comstock, Jerry Cowen Chair
Melanie Cooper, Lappan-Phillips Professor
Dean DellaPenna, MSU Foundation Professor
Thomas Hamann, James L. Dye Chair

Cheryl Kerfeld, Hannah Distinguished Professor
David Kramer, Hannah Distinguished Professor
Chih-Wei Lai, Jerry Cowen Chair
Robert Last, Barnett Rosenberg Chair
Richard Lenski, Hannah Distinguished Professor
Kenneth Merz, Joseph Zichis Endowed Chair
Douglas Schemske, Hannah Distinguished Professor
A Global Problem Solver

Research support
Goal: $5.5 million
• Discretionary dollars at the college and department level.
• Endowed funds to support research activities.
A Vibrant Community

Infrastructure/facility improvement
Goal: $6 million

• Discretionary funds to enhance core facilities and new labs.
• Strategic funds for college leadership to make seed investments.
NatSci Fall 2014 undergraduate majors: 4,926; 868 LBC coordinate majors
NatSci Fall 2014 incoming freshmen: 1,378
NatSci Fall 2014 graduate students: 955

MSU overall: 50,085 students

MSU freshman class: 9,496
- Michigan: 6,565 (69.1%)
- Out-of-state: 1,170 (12.3%)
- U.S. Possessions: 4 (~.1%)
- International: 1,757 (18.5%)
NatSci 2014-2015 Budget

Total Recurring Budget: $62.6M – up 3.8%
- $647k University allocation
- $1.65M Salary increases
- 1% Efficiency reduction

Total Non-Recurring Budget: $7.5M – down $200k
- $304k Program allocations
- $4.2M Off-campus & online instruction ($300k increase)
- $3.0M F&A (~same as last year)

Additional University Support -- $6.42M total
- $4.07M Faculty start-up and retention
- $1.53M Research support
- $400k Biology Initiative
- $1.2M TLE and A+I
F&A Generated
00/01 through 13/14

(By NatSci Departments under all MAUs)
Department Leadership Changes

- **Keith Promislow**, Mathematics (outgoing chair: Yang Wang)
- **Victor DeRita**, Microbiology and Molecular Genetics (outgoing interim chair: Robert Hausinger)
Dean’s Office Changes

- **Cori Fata-Hartley**, NatSci assistant dean for curriculum coordination
- **Corey Longley**, senior director of development, Advancement Office
- **Elizabeth Soules**, research administrator, Office of Research Support
New NatSci Faculty Members

Biomedical and Laboratory Diagnostics
- Rachel Morris, specialist (teacher – fixed-term)

Biochemistry and Molecular Biology
- George Mias, assistant professor (medical genomics)
- Amy Ralston, assistant professor (stem cells/regenerative medicine)

Entomology/LBC
- Peter White, assistant professor (ecology and science education)

Kellogg Biological Station/Zoology
- Sarah Evans, assistant professor (microbiology)
New NatSci Faculty Members (con’t.)

Microbiology and Molecular Genetics
- Yann Dufour, assistant professor (microbial ecology)
- Ashley Shade, assistant professor (microbial ecology)

Physics and Astronomy
- Tyce DeYoung, associate professor (particle astrophysics-neutrinos)
- Kendall Mahn, assistant professor (high energy physics – experimental)
- Witek Nazarewicz, FRIB Hannah Professor (nuclear physics)
- Vashti Sawtelle, assistant professor (physics education)
New NatSci Faculty Members (con’t.)

Plant Biology
- David Lowry, assistant professor (integrative plant biologist)
- Shi-You Ding, associate professor (photosynthesis)

Physiology
- Kurt Hankenson, associate professor (bone physiology)
Early CAREER Award Winners

Aaron Levin – Mathematics, 2014
Chris Waters – Microbiology, 2013
Matt Hedden – Math, 2012
John McGuire – Physics, 2012
Teena Gerhardt – Math, 2012
Thomas Hamann – Chemistry, 2011
Pengpeng Zhang – Physics, 2011
Ignacio Uriarte-Tuero – Math, 2011
Dapeng Zhan – Math, 2011
Eva Farre – Plant Biology, 2011
Reinhard Schwienhorst – Physics, 2010
Chih-Wei Lai – Physics, 2010
Janette Boughman – Zoology, 2010
National/International Award Winners

**National Academy of Sciences:**

Kenneth Keegstra, Plant Biology and Biochemistry & Molecular Biology

**American Chemical Society Fellow:**

Robert Maleczka, Chemistry

**Optical Society Fellow:**

Marcos Dantus, Chemistry

**John Simon Guggenheim Fellowship:**

Nathan Swenson, Plant Biology
William J. Beal Outstanding Faculty Award:
Megan Donahue, Physics & Astronomy

MSU Teacher-Scholar Award:
Teena Gerhardt, Mathematics
Benjamin Schmidt, Mathematics

Distinguished Academic Staff Award:
Richard Hensh, Mathematics

Excellence-in-Teaching-Citation:
Hovig Kouyoumdjian, Chemistry
Undergraduate Research Faculty Mentor of the Year Award:

Chris Waters, Microbiology & Molecular Genetics

MSU Innovation of the Year:

Robert Abramovitch, Microbiology & Molecular Genetics – TB anti-virulence chemical compounds

AT&T/MSU Award:

Stephen Thomas, Zoology – Best Fully Online Course Award
Louise Mead, Zoology – Technology Enhanced Category

2013-14 Service-Learning and Civic Engagement Award:

Stephen Hamilton, Zoology/KBS
Chrysoula Vasileiou, Chemistry
Key Initiatives
Academic Competitiveness

Creation of an Academic Competitiveness Fund

- Up to $8.7 M in new recurring support beginning in 2014-15
- Up to an additional $6.3 M recurring to begin in 2015-16

**Purpose:** Hiring tenured faculty that enhance the national and international excellence and competitiveness of MSU as a research university.

**Position assignments:** Will depend upon proposals received from colleges and approved by the Provost.

- Most of funds split among priority investment areas.
- ~10-15% targeted to senior hires.
- 10-15% for opportunistic interventions.
Biology Initiative

**Goal:** To improve biology education and establish a continuous improvement model focused on student success.

**Key points:**

- Align curriculum to focus on science practices and big ideas in the field, from gateway courses to capstone experiences.
- Joint oversight of core life science curriculum that serves multiple majors.
- Addition of graduate TAs and undergraduate LAs to facilitate active learning in core courses.
- Future investments to support research-based teaching practices, including tenure-stream hires, and to lower student-to faculty ratios in core courses.
Key accomplishments:

- MSU is one of eight project sites for an AAU undergraduate STEM initiative project.

- Two major additional pieces of funding have been received to assist in this effort:
  - A $1.5M, 5-year, Howard Hughes Medical Institute research award to help transform introductory laboratories and mathematics.
  - A $5M, 3-year award from the Herbert H. and Grace A. Dow Foundation to launch a new program – STEM Success.

- The MSU STEM Alliance, composed of the MSU colleges, institutes, and research groups engaged together in an effort to make Michigan State the premier public university for undergraduate STEM learning and research, is entering its second full year.
Computational Mathematics, Science and Engineering

Goal: To transform MSU into the world leader in scientific discovery in scientific discovery through large-scale computation.

Metrics for Success Over Next 5 Years:
- Creation of a coherent set of undergraduate and graduate degrees, with accompanying courses.
- Creation of a robust community of scholars.
- Creation of a full-blown department.

Coordination:
Partnership between Colleges of Natural Science and Engineering
Key Grants
Herbert H. and Grace A. Dow Foundation:
$5M to support the launch of a new MSU program – STEM Success

Howard Hughes Medical Institute:
$1.5M to implement changes to core STEM courses (biology, chemistry, physics and mathematics)

National Science Foundation:
$2.9M to develop a system to measure student performance for a new set of K-12 science standards.

National Science Foundation:
$11.4M to investigate how the elements of the universe evolved. (JINA)
Key Grants

**DOE/Department of Agriculture:**
$1M to accelerate breeding programs to improve feedstock for biofuels, bio-power and bio-based products.

**Bill and Melinda Gates Foundation:**
$750k to develop genomic, genetic and bioinformatics tools to improve sweet potato.

**Bill and Melinda Gates Foundation:**
$820k to elucidate ways to help shorten the course of TB therapy.

**National Institutes of Health:**
$812,412 to establish a Plant Biotechnology for Health and Sustainability Graduate Training Program.
College of Natural Science

Awards Presentation

2014-15
NatSci Outstanding Faculty Award
2014-15

David Arnosti
Biochemistry and Molecular Biology
NatSci Outstanding Faculty Award 2014-15

Merlin Bruening
Chemistry
NatSci Outstanding Faculty Award
2014-15

Thomas Sharkey
Biochemistry and Molecular Biology
NatSci Outstanding Faculty Award
2014-15

Edward “Ned” Walker
Microbiology and Molecular Genetics
NatSci Teacher-Scholar Award
2014-15

Wade Fisher
Physics and Astronomy
NatSci Undergraduate Teaching Award
2014-15

Robert LaDuca
Chemistry/LBC
NatSci Undergraduate Teaching Award 2014-15

Stuart Tessmer
Physics and Astronomy
NatSci Junior Faculty Mentoring Award
2014-15

Stephen Zepf
Physics and Astronomy
NatSci Postdoctoral Mentoring Award
2014-15

Oleksandr “Alex” Levchenko
Physics and Astronomy
NatSci Distinguished Academic Staff Award
2014-15

Steven Poulilos
Chemistry
Undergraduate Academic Advisor Award
2014-15

Leslie Thompson
Biomedical Laboratory Diagnostics
Graduate Academic Advisor Award
2014-15

Christoph Benning
Biochemistry and Molecular Biology
NatSci Support Staff Award
2014-15

Reza Loloee
Physics and Astronomy
NatSci Support Staff Award
2014-15

Coreena Spitzley
Microbiology and Molecular Genetics
NatSci Excellence-in-Teaching Citation
2014-15

Emily Weigel
Zoology
Lorena V. Blinn Endowed Teaching Award 2014-15

Ryan Kimbirauskas
Center for Integrative Studies in General Science
James D. Hoeschele Endowed Teaching Award 2014-15

April Cognato
Zoology
Ronald W. Wilson Endowed Teaching Award
2014-15

Merle Heidemann
Geological Sciences
Harlo M. Mork Memorial Excellence in Teaching Award
2014-15

Amanda Lorenz
Entomology
NatSci Faculty
Teaching Prize Recipients
2014-15
NatSci Faculty Teaching Prize

2014-15

- Lars Brudvig, Plant Biology
- Julie Cioni, Mathematics
- Albert Cohen, Mathematics
- Terence Marsh, Microbiology & Molecular Genetics
- Susan McQuiston, Biomedical Laboratory Diagnostics
- Vincent Melfi, Statistics & Probability/PRIME
- Carl Schmidt, Physics & Astronomy
- Kathryn Severin, Chemistry
- Stuart Tessmer, Physics & Astronomy
- Erica Wehrwein, Physiology
State of the College
Dean R. James Kirkpatrick
November 14, 2014