

University of Minnesota

Agriculture and Extension Service Report

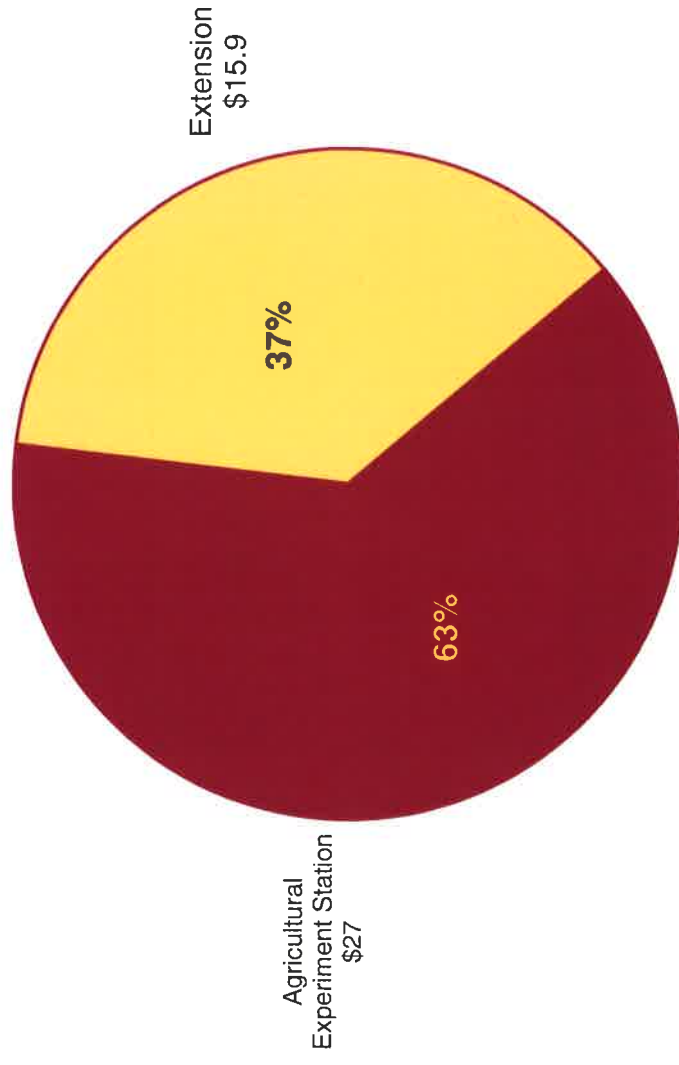
February 2015

1. Agricultural State Special Funding – FY 2015
2. MN Agricultural Experiment Station Funding – FY 2008-2015
3. U of M Extension Funding –FY 2008-2015
4. College of Food, Agricultural and Natural Resource Sciences (CFANS)
Funding –FY 2008-2015
5. College of Veterinary Medicine Funding – FY 2008-2015
6. Special Initiatives
 - a. Rapid Agricultural Response Fund
 - b. Rapid Agricultural Response Projects
 - c. Regional Sustainable Development Partnerships
7. Additional Information
8. Select Legislative Committees

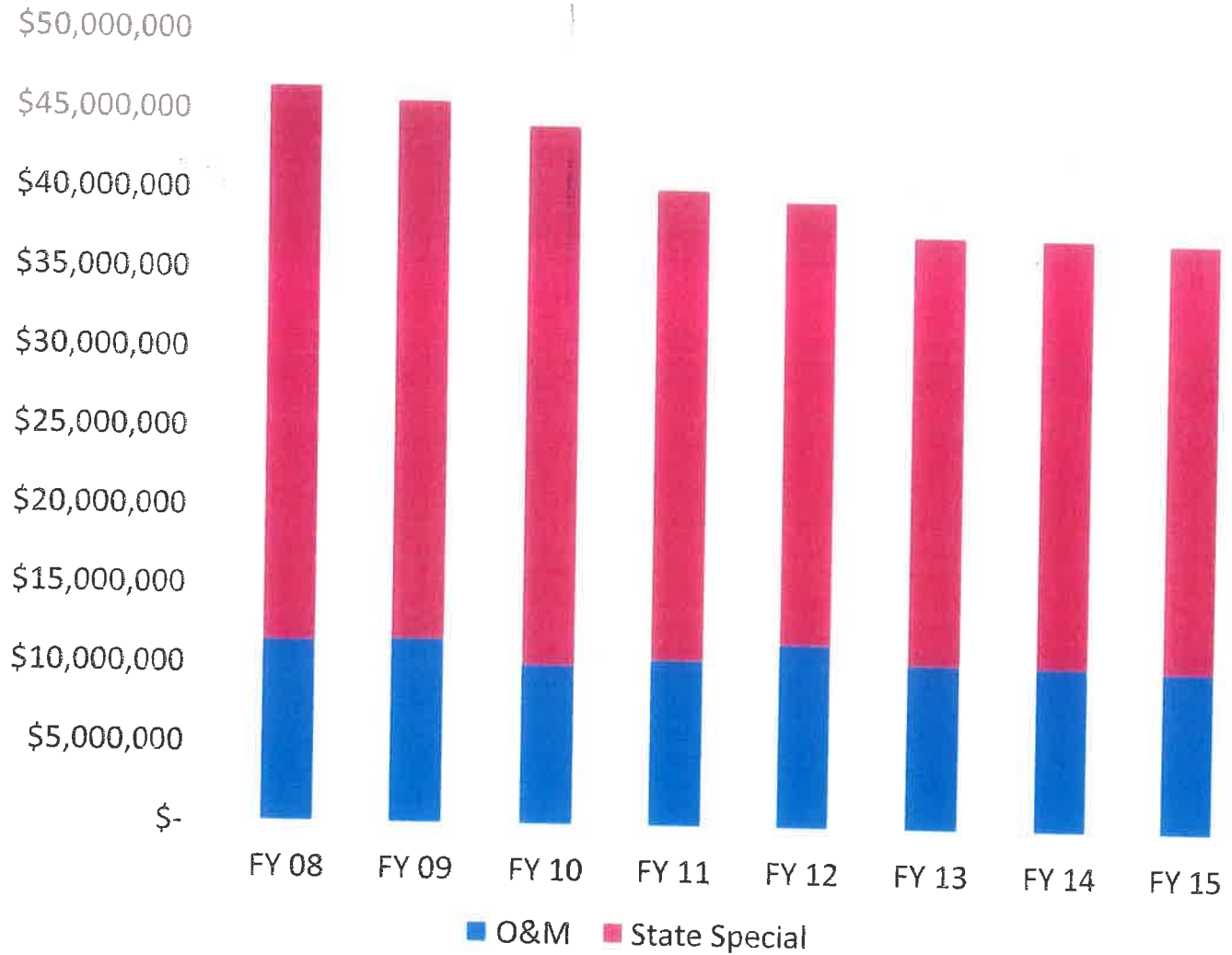
University of Minnesota

FY14 Agriculture State Special Appropriation \$42.9M

(Numbers in Millions)



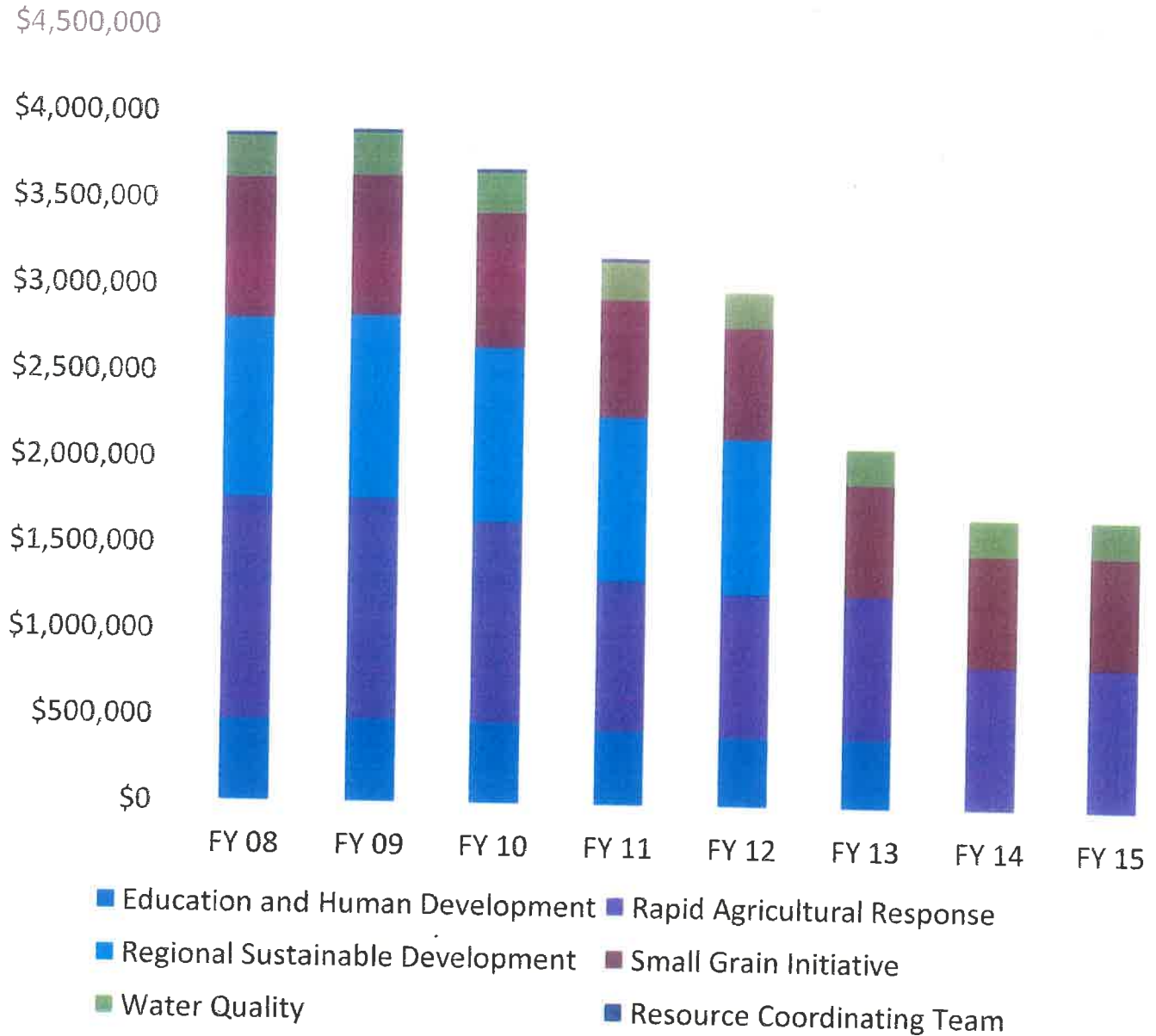
Agricultural Experiment Station Funding State Special and O&M FY06-FY15



College of Food, Agricultural
and Natural Resource Sciences

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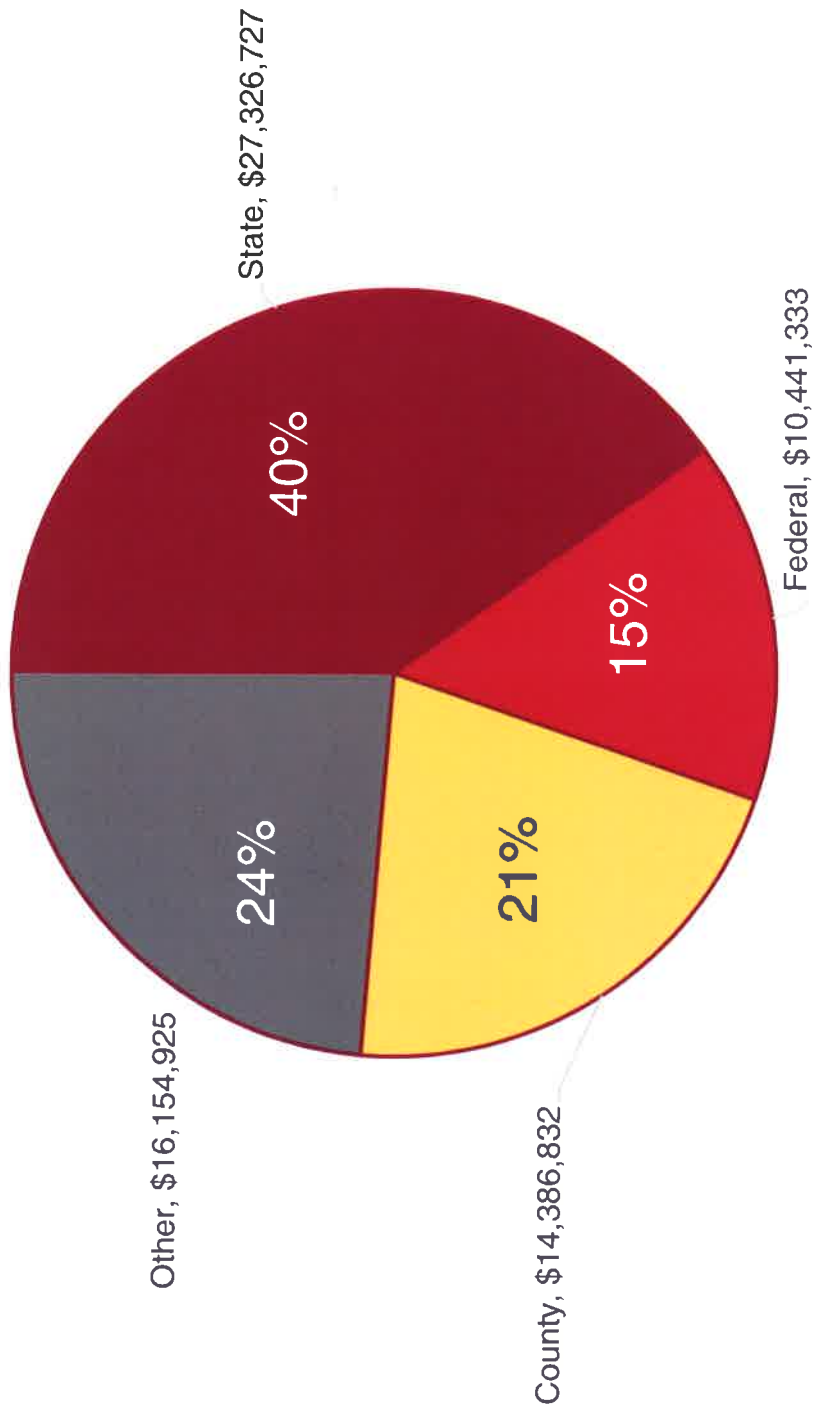
Agricultural Experiment Station Funding Special Projects: FY08-FY15



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and Natural Resource Sciences

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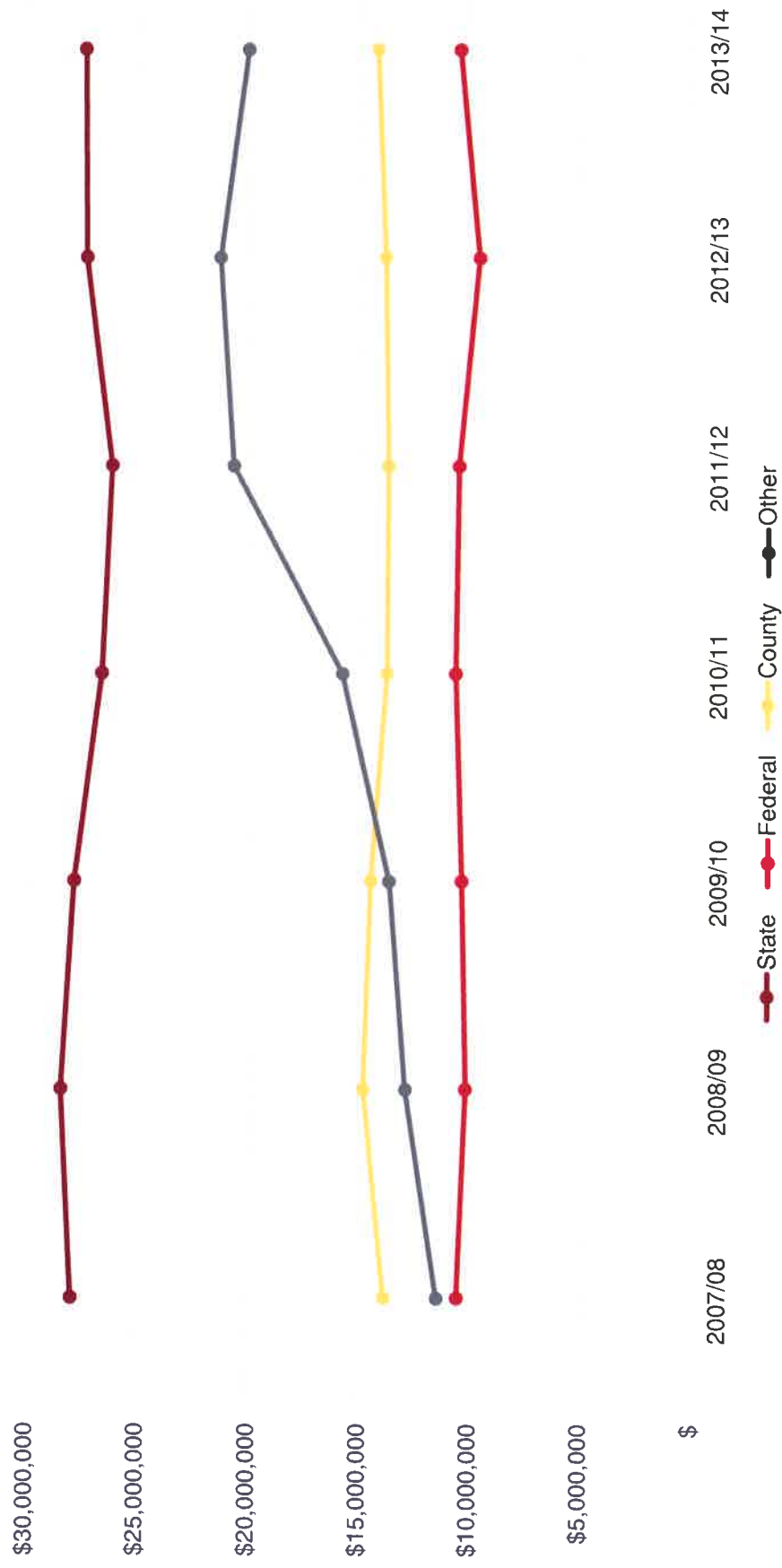
EXTENSION 2014-15 BUDGET: \$68.3M



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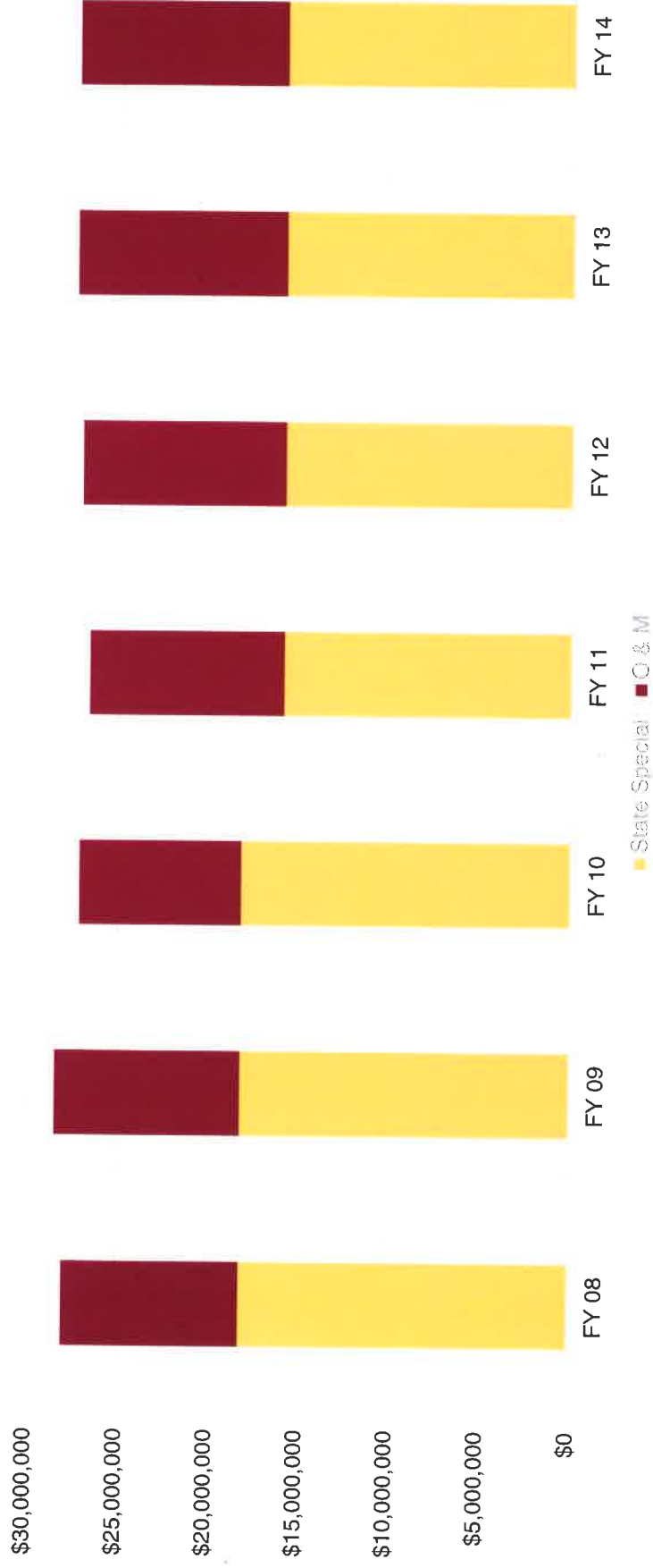
EXTENSION FUNDING TRENDS



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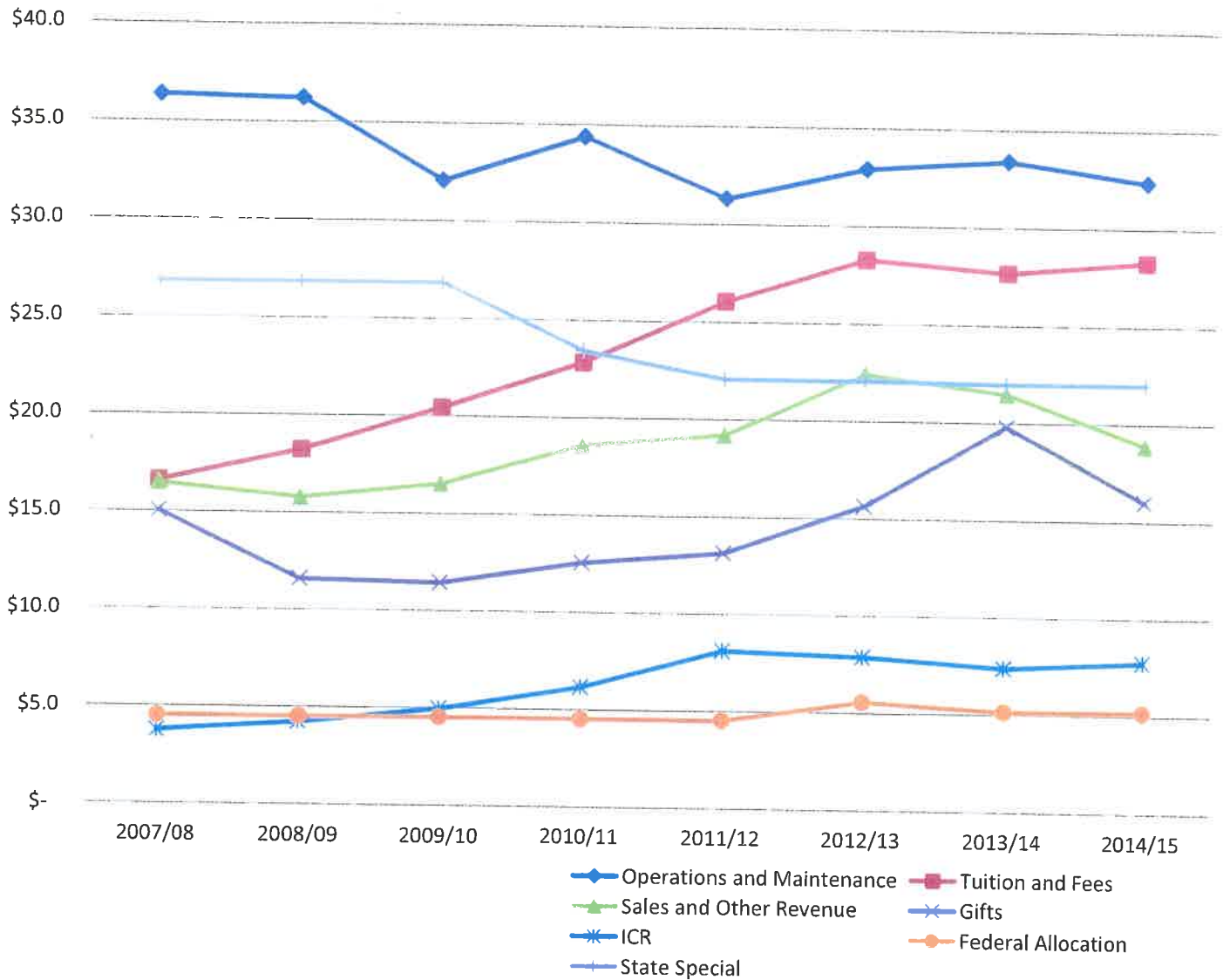
MN EXTENSION

State Special and O&M FY08-FY14



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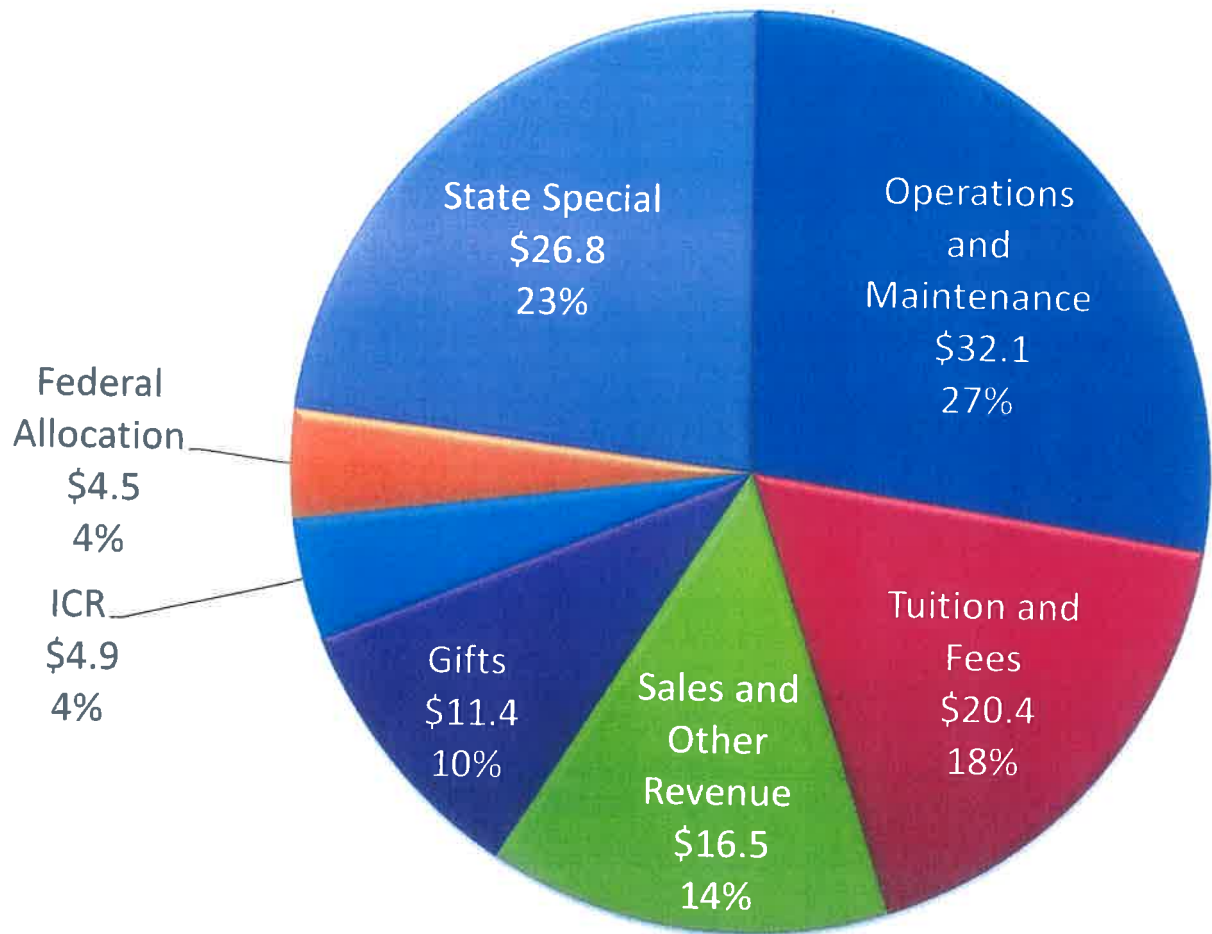
College of Food, Agricultural, and Natural Resource Sciences Major Fund Area Trends (Millions)



College of Food, Agricultural
and Natural Resource Sciences

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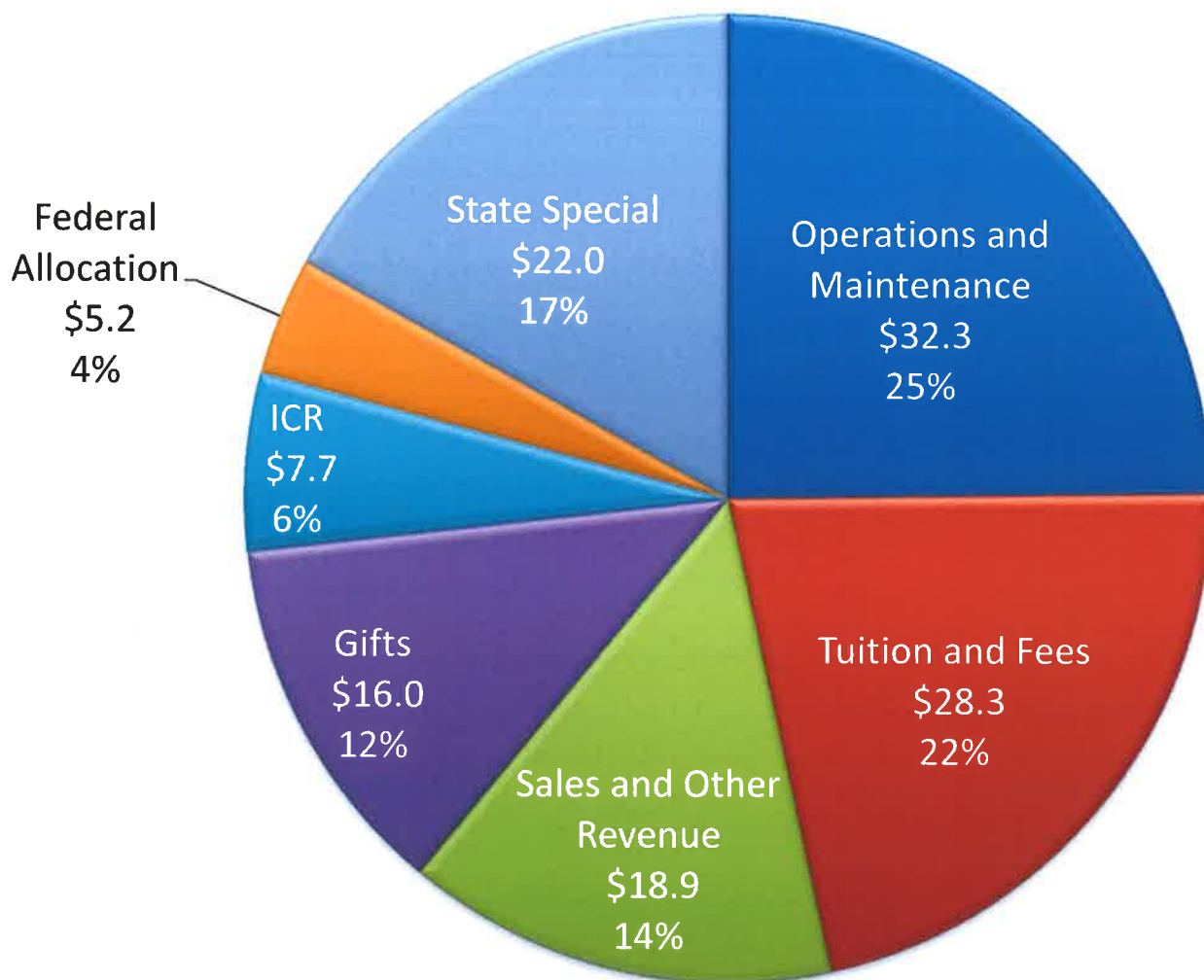
**College of Food, Agricultural, and
Natural Resource Sciences
2009-2010 Resources: \$116.6 Million**



College of Food, Agricultural
and Natural Resource Sciences

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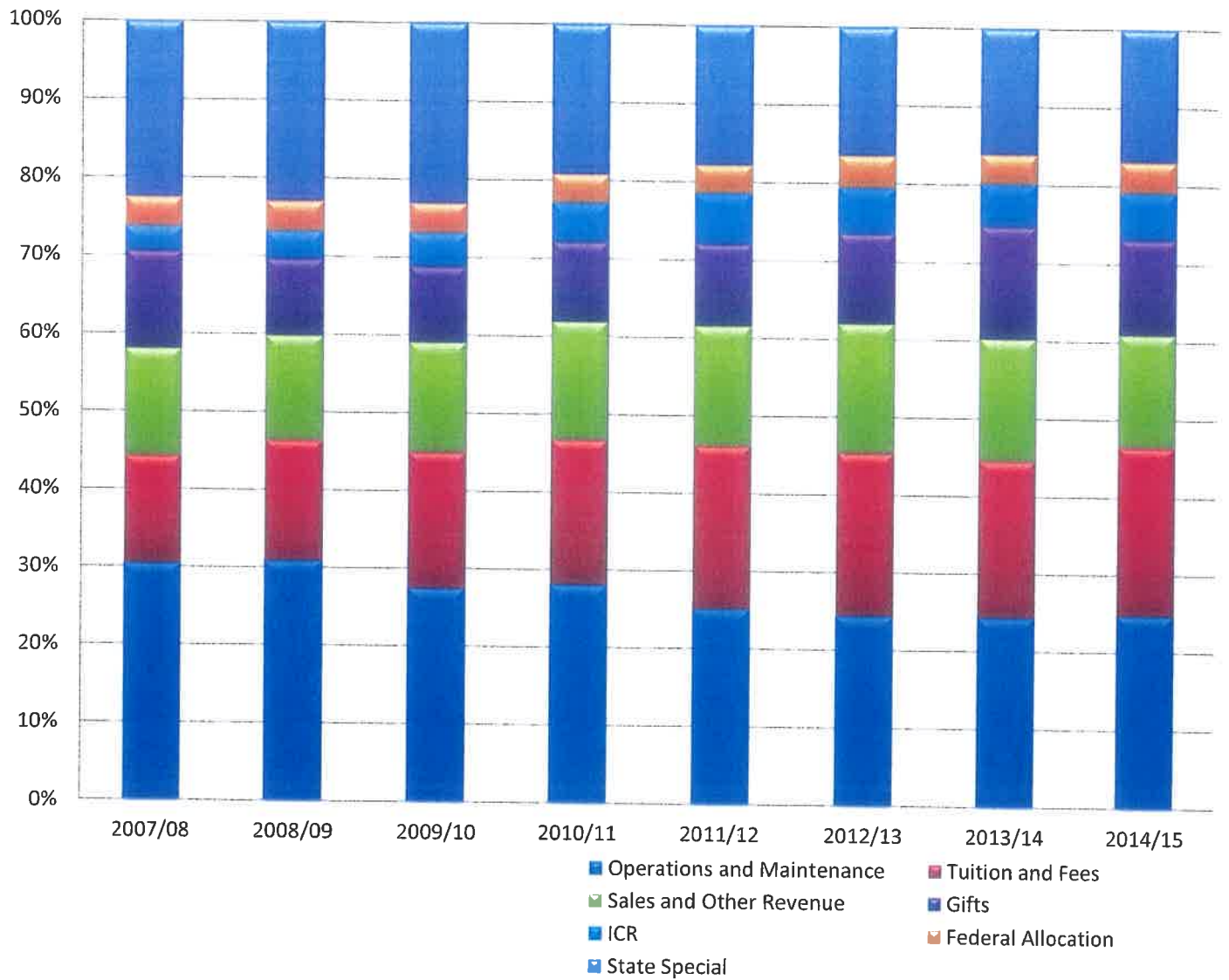
**College of Food, Agricultural, and Natural Resource Sciences
2014-2015 (Estimated) Resources: \$130.4 Million**



College of Food, Agricultural
and Natural Resource Sciences

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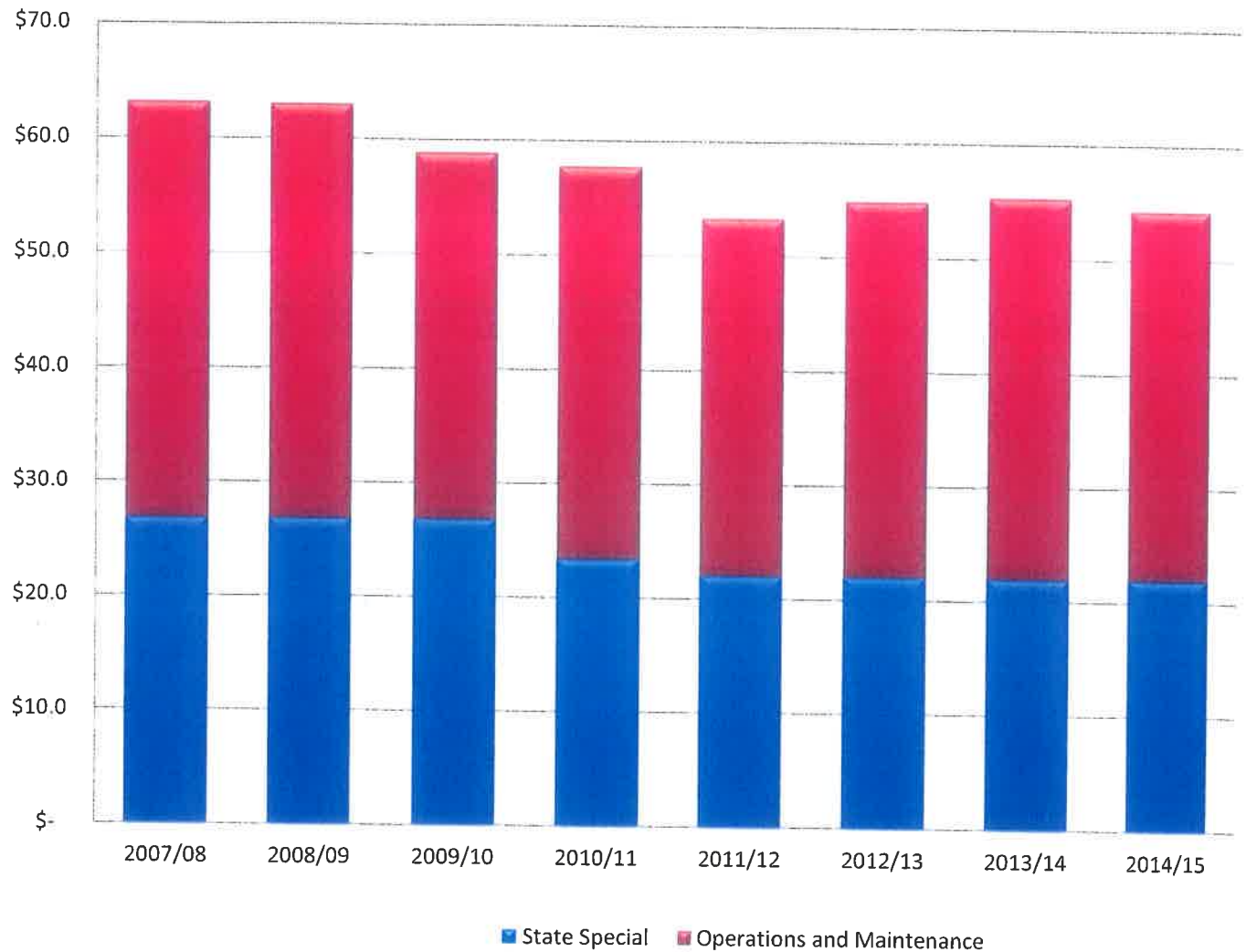
College of Food, Agricultural, and Natural Resource Sciences Fiscal Resources Trends



College of Food, Agricultural
and Natural Resource Sciences

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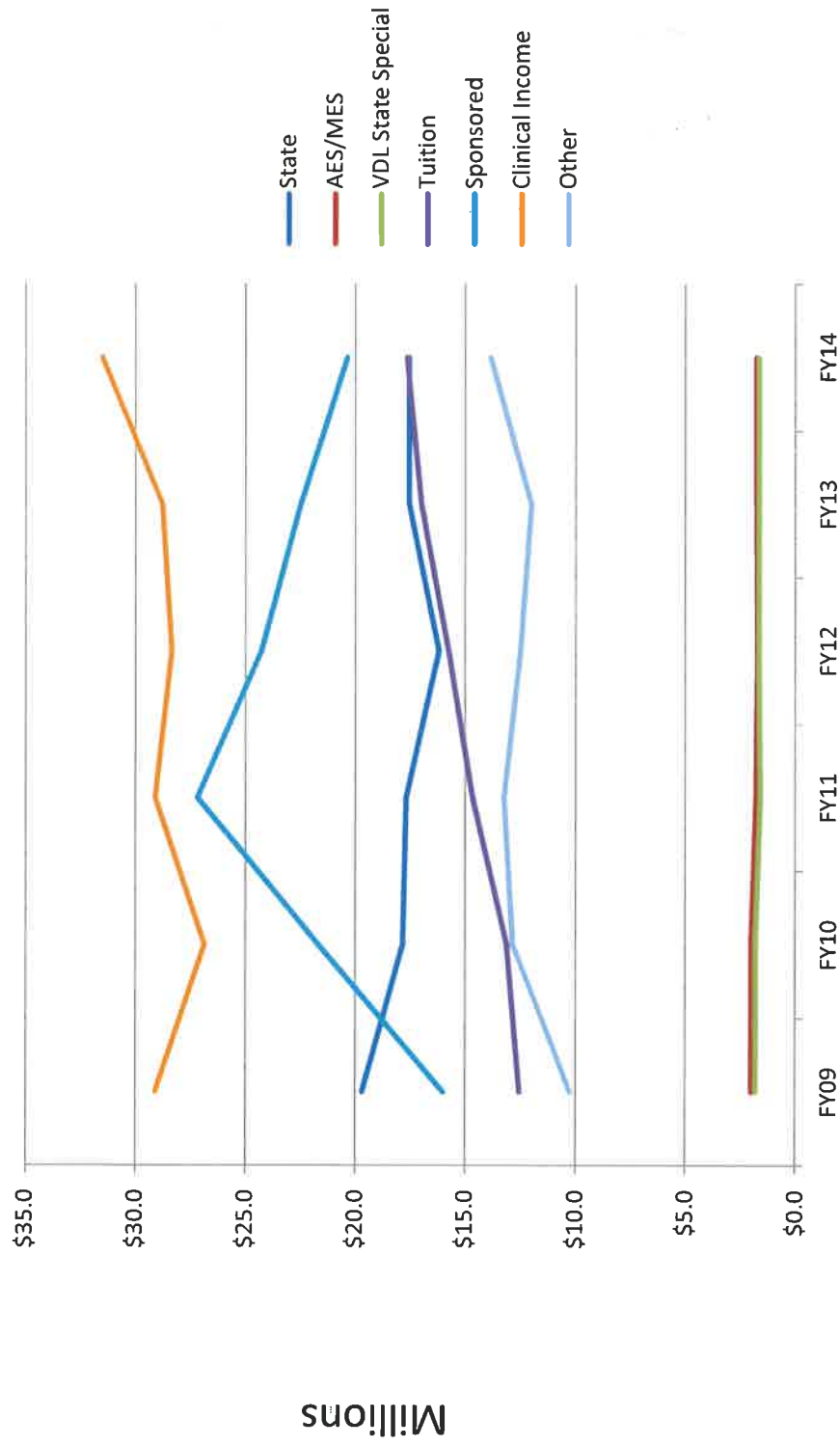
College of Food, Agricultural, and Natural Resource Sciences State Funding Trends (Millions)



College of Food, Agricultural
and Natural Resource Sciences

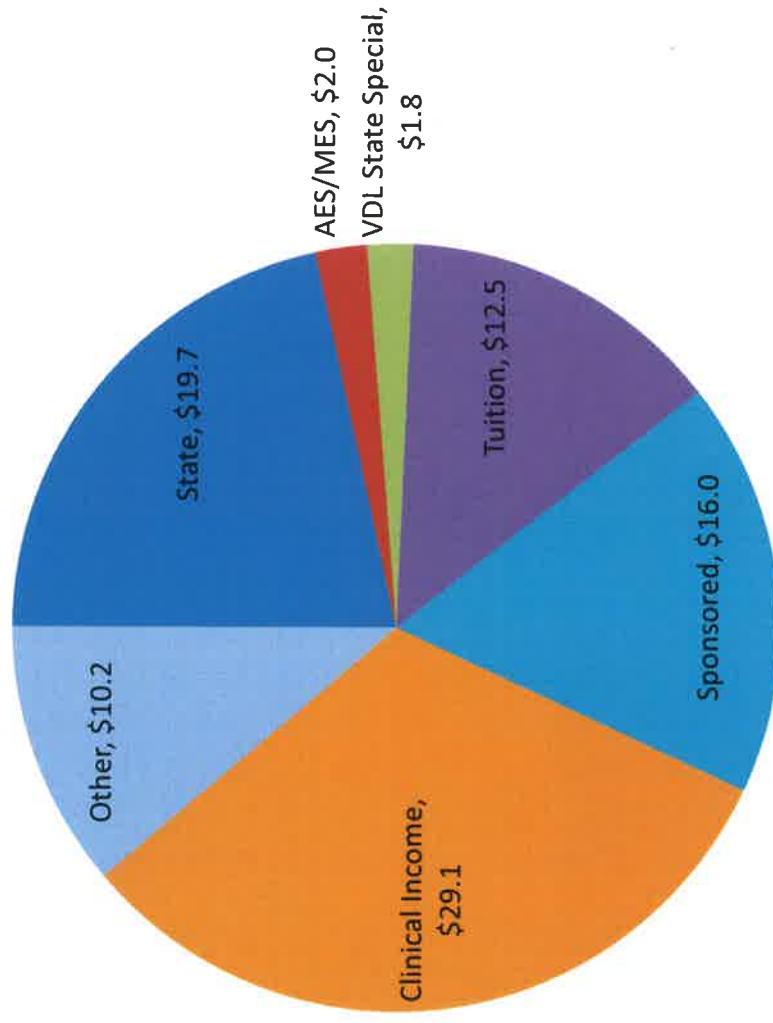
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CVM Funding Trends



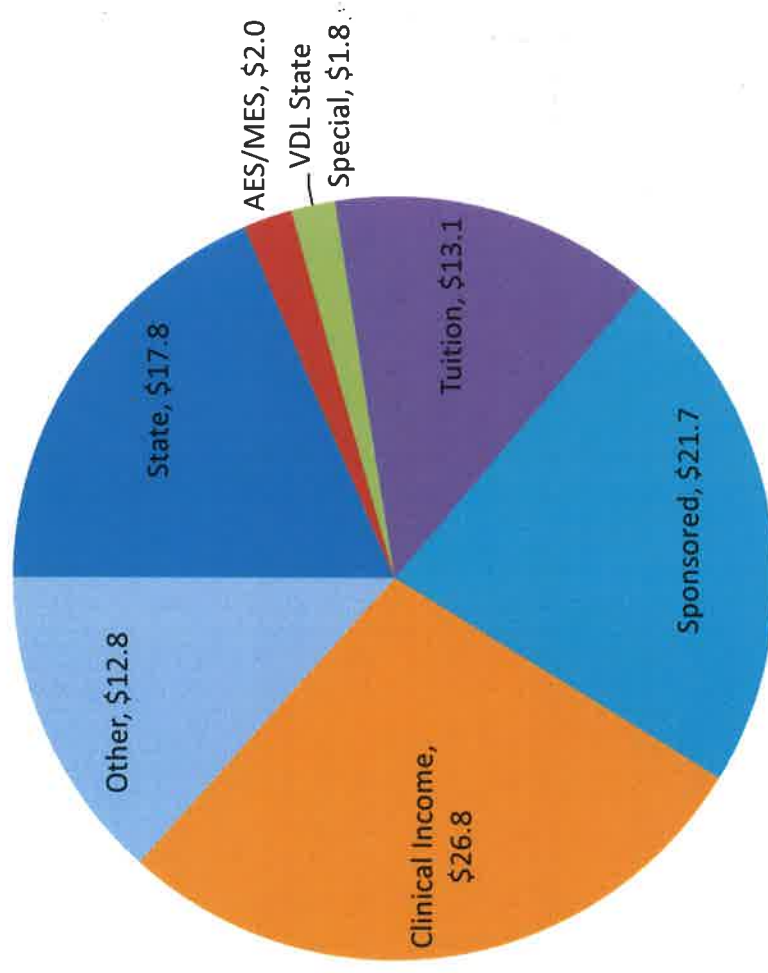
CVM FY09 Budget - \$91.3M

(\$ in Millions)



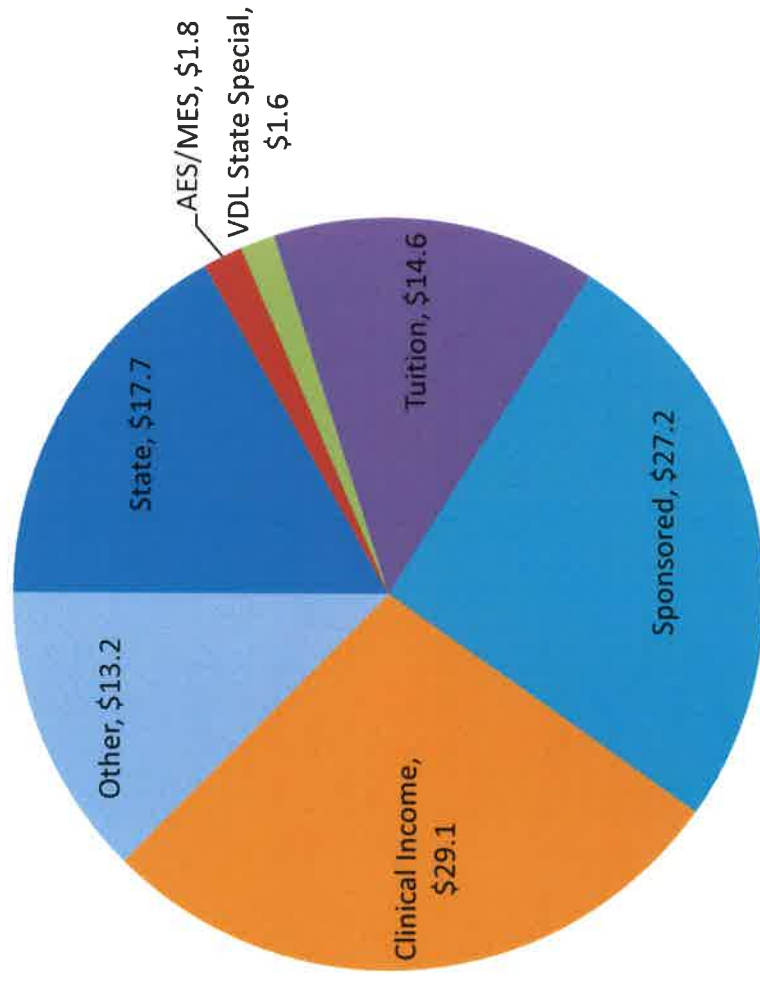
CVM FY10 Budget - \$96.1M

(\$ in Millions)



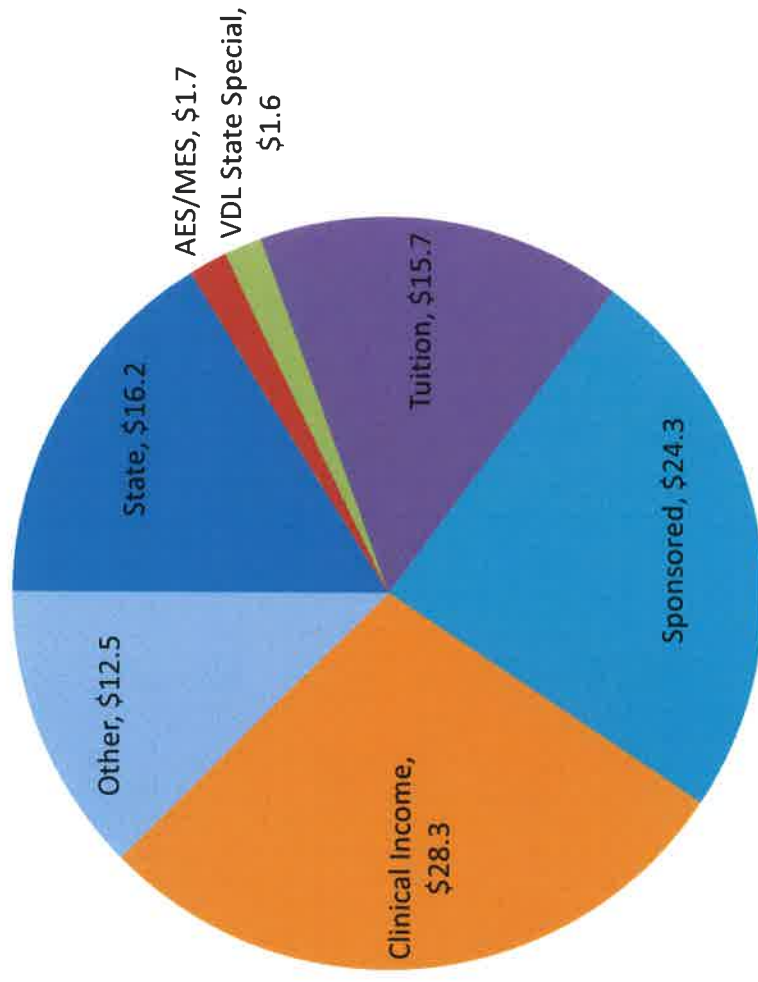
CVM FY11 Budget - \$105.1M

(\$ in Millions)



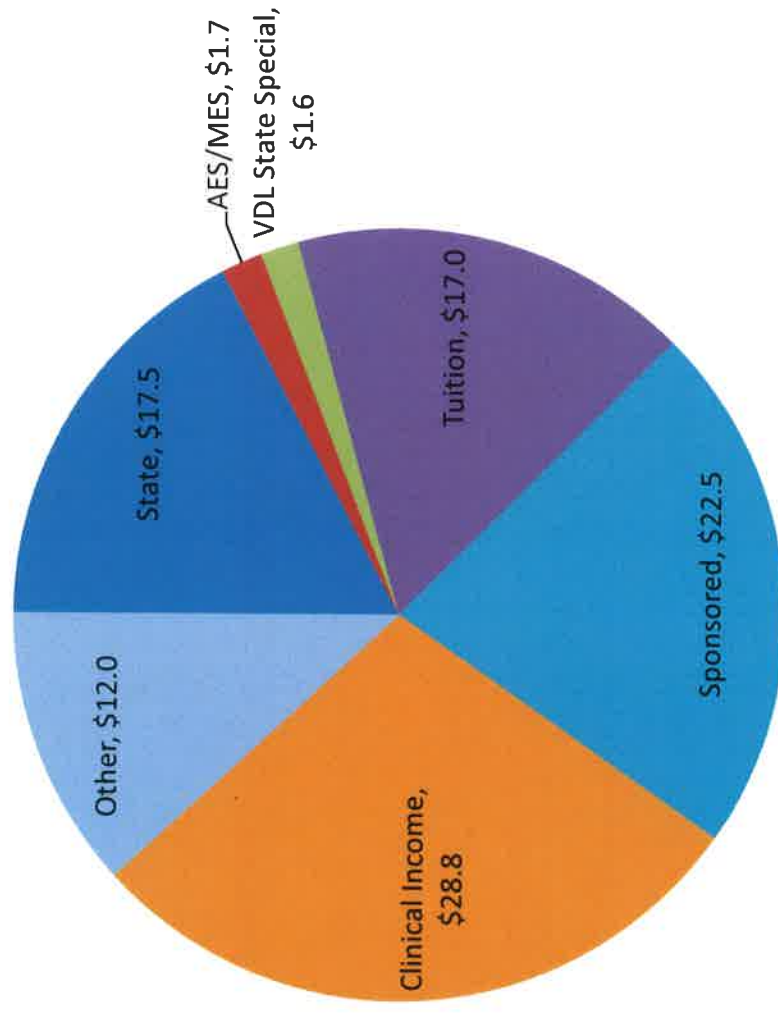
CVM FY12 Budget - \$100.3M

(\$ in Millions)



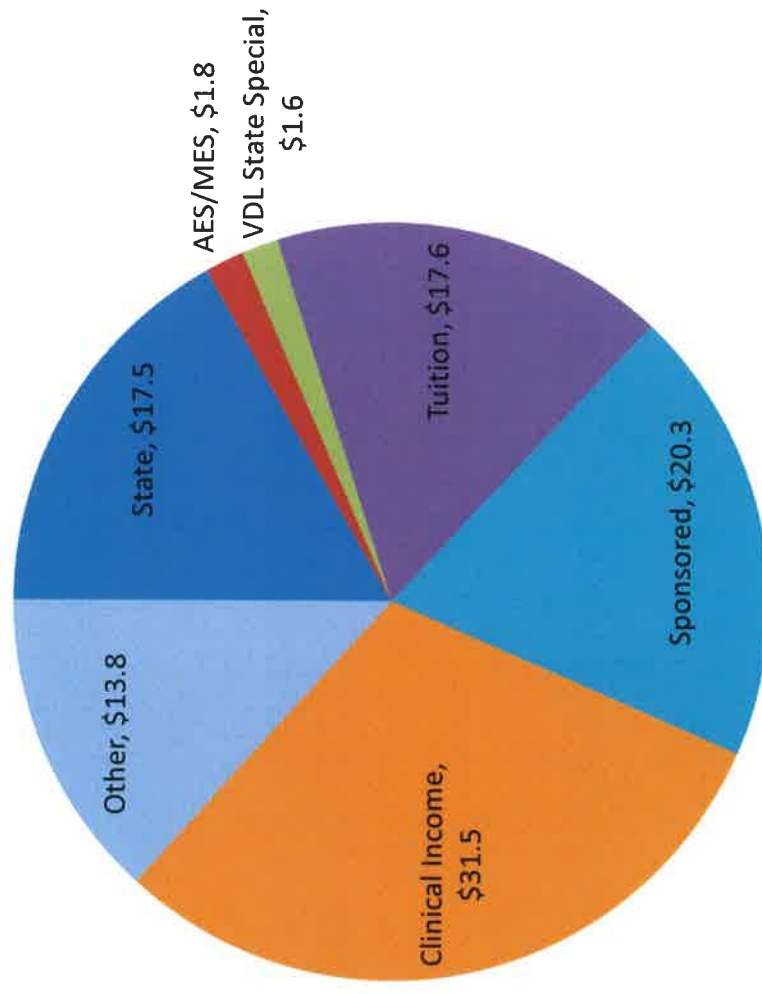
CVM FY13 Budget - \$100.1M

(\$ in Millions)



CVM FY14 Budget - \$104.2M

(\$ in Millions)



Rapid Agricultural Response Fund

The Nature of the Problem

The Minnesota State Legislature has a strong history of responsiveness to the concerns of citizens involved with our state's natural resources. A recent example is the devastating impact "scab" has had on small grain crops such as wheat and barley. Growers who depend on those crops appealed to the legislature for special funding of control and eradication research, and breeding efforts to develop resistant varieties. In a few short years, promising advances have taken shape as a result of that initiative.

Often, however, attention to such problems has been piecemeal; insufficiently coordinated with activities already underway within Minnesota's research institutions. Every group with a need for assistance has had to press its case individually, tying up legislative time and attention.

The University of Minnesota, particularly the Minnesota Agricultural Experiment Station, has long been a focus for research related to our natural resources. Recognizing this, the legislature looked to the University and the MAES for direction and coordination of research initiatives needing special emphasis or rapid response.

The Legislative Response

To improve speed of response and organize the decision making process, in 1998 the Minnesota State Legislature authorized a program and created a fund to enable rapid responses to urgent issues and challenges that have arisen and face Minnesota's agriculture and natural resource based industries. An initial allocation of \$1.5 million was provided for designated projects in 1998, and a recurring allocation of \$1 million was created in 1999. State funding cutbacks have since reduced this amount to less than \$900,000.

Under the management of the Minnesota Agricultural Experiment Station, the Rapid Agricultural Response Fund has enlisted the support of faculty in the colleges of Agricultural, Food and Environmental Sciences; Human Ecology; Natural Resources; and Veterinary Medicine; and in the University of Minnesota Extension.

Projects that have been funded to date include efforts to:

- control bovine tuberculosis in Minnesota,
- maintain the vitality of the honey producing industry,
- eradicate Porcine Reproductive and Respiratory Syndrome from large swine systems,
- control and eradicate avian diseases associated with Minnesota's turkey industry,
- improve the viability of canola as an alternative crop for northwest Minnesota,
- develop effective approaches for managing aphid transmitted viruses in seed potatoes, and
- eliminate scab infestation of wheat and barley.

Rapid Agricultural Response Fund

Fund Management Principles

1. The fund will provide a readily accessible source of support for faculty to accelerate research, and associated extension programs, to support Minnesota's agricultural industry.
2. Identification and clarification of issues and development of proposals must involve appropriate stakeholder partners.
3. Project funds are non-recurring and intended for short-and intermediate-term responses to current and emerging agricultural concerns that have economic and environmental consequences.
4. Funds will be limited to project expenses. Regular faculty salaries and other long-term commitments will not be covered although project-specific personnel for the short-or-intermediate-term will be considered (post-doctoral researchers, research assistants, etc.)
5. The fund will be managed to maintain maximum flexibility to address future short-and intermediate-term issues.
6. The fund will be managed to address as many emerging issues/projects as possible.

Review Process

A faculty review committee screens the pre-proposals and selects those to be invited to submit full proposals. Full proposals are reviewed by the Faculty Review Committee, with input from a special advisory committee composed of Minnesota commodity group representatives, and forwarded to the RARF Administrative Council for final decisions.

The Rapid Agricultural Response Fund Administrative Council is responsible for managing the process of allocating funds. Members of this council are: Dean, College of Food, Agricultural and Natural Resource Sciences; Dean, University of Minnesota Extension; Dean, College of Veterinary Medicine.

Proposals that demonstrate multi-disciplinary work involving teams of research and extension faculty are encouraged. Proposals may be submitted by faculty from one or more colleges, departments, Research and Outreach Centers, or extension field staff. Researchers are expected to work with external groups/organizations to develop proposals. This interaction should be well-documented in the full proposal.

Rapid Agricultural Response Fund (RARF)

Funded Projects FY-14/FY15

Project Title	Total Funding
Rapid Diagnostic Methods to Combat a New Disease of Conifer Trees in Minnesota: Heterobasidion Root Rot causing Circles of Death	77,711.00
Development of a Rapid, High Throughput Real-time RT-PCR Diagnostic Tool and Complete Genome Characterization of US Porcine Epidemic Diarrhea Virus	33,000.00
Identifying the genetic diversity of swine group B and C rotaviruses: Steps Toward Developing a Universal Rotavirus B / C Subunit Vaccine	97,500.00
Bacterial Leaf Streak of Wheat and Barley	26,090.00
Analysis of Virulence-Associated Genes in Known and Novel Brachyspira Species to Develop Pathogen-Specific Diagnostic Assays	40,000.00
Crop Rotation Strategies for Management of Glyphosate-Resistance Weeds	110,166.00
Experimental releases of a newly-approved Asian biological control agent of the soybean aphid	154,000.00
Integration of Renewable Energy Technologies to Green Energy Consumed in Dairy and Swine Production Systems	167,061.00
Population Dynamics of Spotted Wing Drosophila (SWD) in Minnesota: Predicting and Examining the Geopgraphic Spread of an Invasive Fruit Pest	121,191.00
Role of the bacterial microbiome in optimal commercial turkey production	94,750.00
Insecticide Resistance Management (IRM) in Minnesota Soybean	127,463.00
Advancing knowledge to manage Goss's Wilt of Corn, a new disease in Minnesota	100,000.00
Responding to an S.O.S. from the Commercial Beekeeping Industry	141,360.00
Identification, culture and virulence studies of Heartland virus-like bunyaviruses in Minnesota food animals	133,101.00



Regional Sustainable Development Partnerships

A history of innovation in Greater Minnesota

Since 1998, U of M RSDP has connected Greater Minnesota communities to the resources of the University of Minnesota through sustainability-oriented projects.

RSDP has supported innovative methods and techniques that have helped seed the Clean Energy Resource Teams (CERTs), the farm to school/institution movement, local food systems, food hubs, and a tourism initiative for communities of fewer than 1,500 people.

RSDP has also facilitated new and innovative problem-solving methods such as design thinking for Greater Minnesota audiences. RSDP's most recent community convenings include the Rural Design Conference in Crookston (July 2014) and five climate change adaptation convenings planned for 2015 supported by the Minnesota Pollution Control Agency and North Central Sustainable Agriculture and Research.

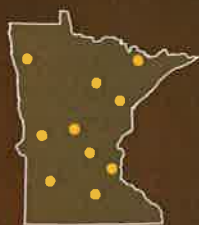


RSDP is studying the feasibility of and best practices for small-scale passive solar winter greenhouses with support from Extension, the Bush Foundation and U of M's MnDrive.

Focused on sustainability

RSDP has a portfolio of more than 400 past and 130 current projects building community-University partnerships in four areas: sustainable agriculture and local foods; natural resources; sustainable tourism and resilient communities; and clean energy.

- RSDP has staff and offices in five regions of the state.
- Each regional RSDP has a governing board made up of community members and U of M faculty and staff, and work groups that provide project guidance, prioritization, network connections, and an "ear to the ground" in RSDP's four focus areas. Regions provide modest seed funding for local projects through a competitive process, and those funds are often leveraged several times over with other community sources.
- RSDP's bidirectional model of identifying innovation both from the community and the University, and then blending the two 'ways of knowing' has proven to be an effective way to build sustainability in Greater Minnesota communities.
- At the statewide level, RSDP has content expert staff in clean energy and sustainable agriculture/local foods who provide strong regional presence and programming.
- As a part of University of Minnesota Extension, RSDP also has access to extensive institutional knowledge of Greater Minnesota programming, including program design and evaluation.
- Find us at RSDP.umn.edu.



10

Research and
Outreach Centers

29 MAJORS

Undergraduate and Graduate studies
in plants, energy, business, and water

61

Minnesota counties
represented in the 2014-15
undergraduate population

FALL 2014 PEOPLE

1,938 Undergraduates
712 Graduates
253 Faculty
788 Staff
25,000 Alumni

19 research proposals from across the college and the U of M were funded in 2014, the first year of the Global Food Ventures initiative of Minnesota's Discovery, Research and InnoVation Economy (MnDRIVE). All of the projects include collaborators from across the U as well as from private industry and non-profits. The initiative aims to promote global food protection and grow consumers' confidence in the food they buy; to develop new markets for sustainable development and address resource constraints on water and energy; and train the next generation of food scientists.

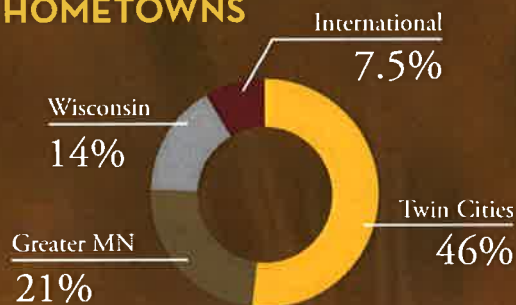
6 MILLION

TOTAL RESEARCH FUNDS
AWARDED TO 13 CFANS
PROJECTS IN 2014 BY THE
STATE'S ENVIRONMENTAL AND
NATURAL RESOURCES TRUST FUND

7

Continents
on which
CFANS scientists
conduct research

UNDERGRADUATE HOMETOWNS



College of Food, Agricultural
and Natural Resource Sciences

www.cfans.umn.edu

UNIVERSITY OF MINNESOTA

\$1 MILLION

Privately funded scholarships
awarded annually to new
CFANS students

662

Total bachelor's, master's
and Ph.D. degrees awarded
by CFANS in 2013-14

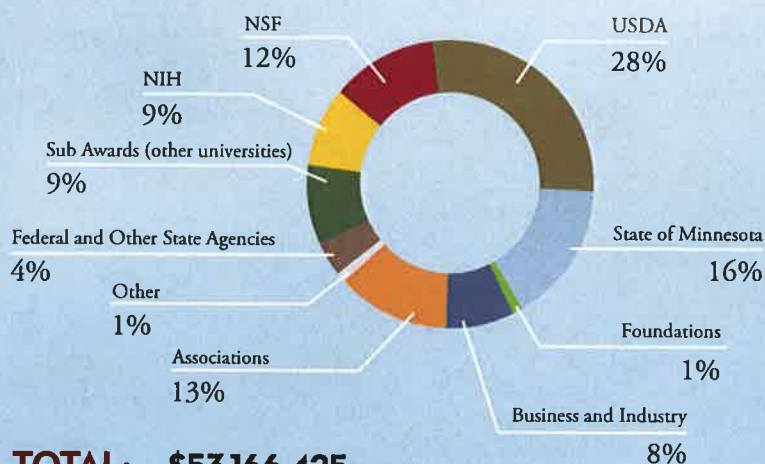
CFANS INNOVATES IN RESEARCH, TEACHING AND EXTENSION AND IN SERVICE OF GLOBAL ADVANCEMENT OF CIVILIZATION.

The college pursues this mission through strategic partnerships with agricultural and natural resource partners at the nexus of agricultural, food and natural resource challenges facing the world.

11 New faculty members for the 2014-15 academic year.
Four of the new assistant professors work at research
and outreach centers across Minnesota.

SPONSORED GRANT AWARDS

Sponsored Grants Received by Type



TOTAL: \$53,166,425

Grand Challenge Research and Education Investments

- Food security, agricultural productivity
- Invasive species and biodiversity/ pest and disease dynamics
- Climate change and renewable energy
- Water resources and uses
- Precision Agriculture
- Educating future leaders in applied science and technology for agriculture, food and natural resource sciences

SPONSORED adds to STATE funding



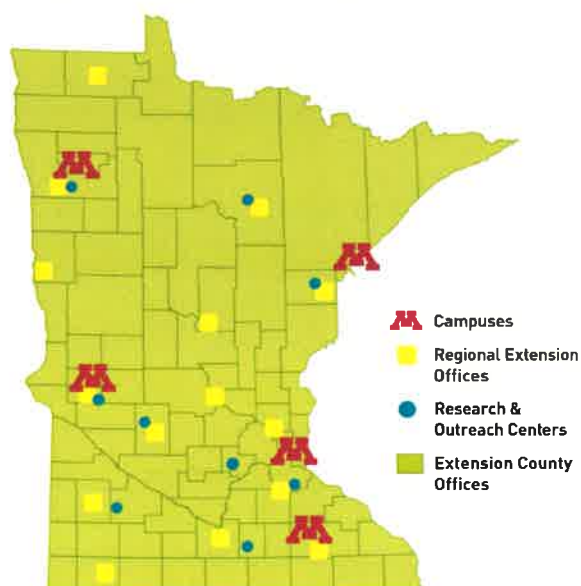
College of Food, Agricultural
and Natural Resource Sciences

UNIVERSITY OF MINNESOTA

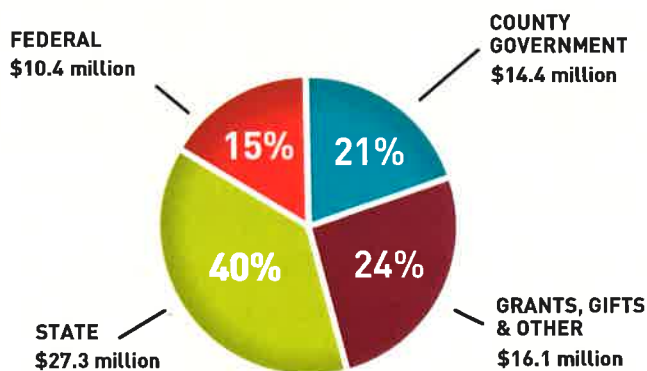
Creating a Stronger Minnesota through Education and Research

University of Minnesota Extension discovers science-based solutions, delivers practical education, and engages Minnesotans to build a better future.

Extension connects the University and Minnesota



Federal, state and county funding for Extension



TOGETHER we create a better world through:



Healthy
FOOD



Thriving
YOUTH



Vibrant
COMMUNITIES



Cleaner
WATER



Stronger
FAMILIES

Creating a Stronger Minnesota through Education and Research

DISCOVERING SOLUTIONS TO TODAY'S PROBLEMS



- Pollinator health
- Invasive species: aquatic and terrestrial
- Farm productivity and efficiency
- Cleaner, safer water supply
- Climate change adaptation
- Farm bill decision-making
- Safe, healthy and affordable food
- Rural and community leadership

PARTNERSHIPS CREATE POSITIVE IMPACT



Federal investments, including United States Department of Agriculture, fund multi-state research and education

State investments are leveraged through collaborations with Minnesota state departments including agriculture, natural resources, health, human services, pollution control and tourism

County investments ensure that 4-H and other programs are delivered locally

Hundreds of organizations and agencies expand the reach, delivering education created by Extension across Minnesota, the nation and the world

UNIVERSITY OF MINNESOTA EXTENSION FACULTY IN:



- College of Food, Agricultural and Natural Resource Sciences
- College of Veterinary Medicine
- College of Education and Human Development
- Hubert H. Humphrey Institute of Public Affairs
- College of Design
- University of Minnesota – Crookston, Duluth, Morris and Rochester

ENGAGING MINNESOTANS TO MAKE A DIFFERENCE

65% of 800 staff work in greater MN

700,000 participants in programs

35,000 volunteers

1,000 community board members



Discover more: extension.umn.edu

Minnesota House Agriculture Finance Committee

Chair: Rod Hamilton-R
Vice Chair: Debra Kiel-R
DFL Lead: Jeanne Poppe-DFL
Mark Anderson-R
Paul Anderson-R
Jon Applebaum-DFL
Peggy Bennett-R
David Bly-DFL
Karen Clark-DFL
Brian Daniels-R
David Dill-DFL
Dan Fabian-R
Glenn Gruenhagen-R
Rick Hansen-DFL
Clark Johnson-DFL
Dale Lueck-R
Jason Metsa-DFL
Tim Miller-R
Nels Pierson-R
Mike Sundin-DFL
ex-officio
Jim Knoblach-R

Minnesota House Agriculture Policy Committee

Chair: Paul Anderson-R
Vice Chair: Mary Franson-R
DFL Lead: David Bly-DFL
Susan Allen-DFL
Mark Anderson-R
Dave Backer-R
Rod Hamilton-R
Clark Johnson-DFL
Dale Lueck-R
Carlos Mariani-DFL
Paul Marquart-DFL
Bud Nornes-R
Jeanne Poppe-DFL
Jason Rarick-R
Joe Schomacker-R
Jennifer Schultz-DFL

Minnesota House Higher Education and Policy and Finance Committee

Chair: Bud Nornes-R

Vice Chair: Marion O'Neill-R

DFL Lead: Gene Pelowski-DFL

Bob Barrett-R

Connie Bernardy-DFL

Drew Christensen-R

Brian Daniels-R

Glenn Gruenhagen-R

Josh Heintzeman-R

Jason Isaacson-DFL

Ben Lien-DFL

Joe McDonald-R

Kim Norton-DFL

Cindy Pugh-R

Paul Rosenthal-DFL

Abigail Whelan-R

Ryan Winkler-DFL

ex-officio

Jim Knoblach-R

**Minnesota Senate
Environment, Economic Development and Agriculture Budget
Committee**

Chair: David Tomassoni-DFL

Vice Chair: Founq Hawj-DFL

Scott Dibble-DFL

David Osmek-R

Bev Scalze-DFL

Dan Sparks-DFL

Kari Dziedzic-DFL

Carrie Ruud-R

Matt Schmit-DFL

Bill Weber-R

Bill Ingebrigtsen-R

Tom Saxhaug-DFL

Rod Skoe-DFL

Tori Westrom-R

**Minnesota Senate Jobs, Agriculture and Rural Development
Committee**

Chair: Dan Sparks-DFL

Vice Chair: Matt Schmit-DFL

Terri Bonoff-DFL

Founq Hawj-DFL

Carla Nelson-R

Carrie Ruud-R

Gary Dahms-R

Lyle Koenen-DFL

Ann Rest-DFL

Bill Weber-R

Kent Eken-DFL

**Minnesota Senate
Higher Education and Workforce Development Policy and Budget
Committee**

Chair: Terri Bonoff-DFL

Vice Chair: Greg Clausen-DFL

Kent Eken-DFL

Jeremy Miller-R

Brandon Petersen-R

Dan Sparks-DFL

Mary Franzen-DFL

Carla Nelson-R

Eric Pratt-R

Patricia Torres Ray-DFL

Susan Kent-DFL

Julianne Ortman-R

Kathy Sheran-DFL