



Michigan State University AgBioResearch

JAMES J. KELS

ASSISTANT DIRECTOR MSU AGBIORESEARCH &
PROJECT GREEN COORDINATOR

MICHIGAN STATE UNIVERSITY

MICHIGAN STATE UNIVERSITY

THE PIONEER LAND GRANT C



Land Grant

1862 – Morrill Act (Land Grant Colleges)

1887 – Hatch Act (Agricultural Research Stations)

1914 – Smith-Lever Act (Cooperative Extension System)

MSU AgBioResearch

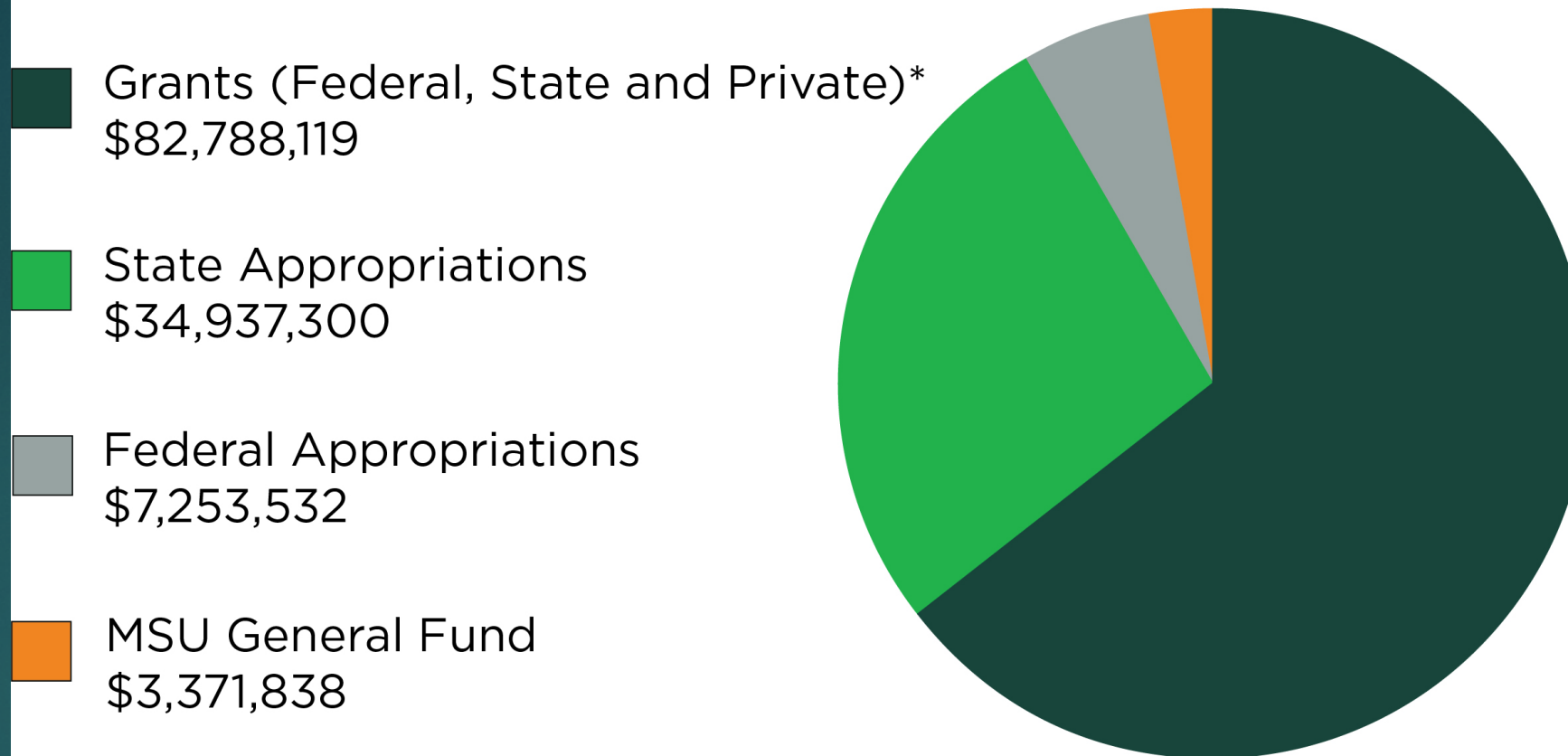
- ▶ Founded in 1888 as the Michigan Agricultural Experiment Station via Hatch Act
- ▶ Started as actual “experiment station”/research farm for the study of scientific agriculture
- ▶ The mission has expanded to include a full spectrum of research activities
- ▶ Renamed MSU AgBioResearch in 2011

MSU AgBioResearch

- ▶ MISSION: Engage in research that ensures wise use of agricultural, natural and community resources and enhances the quality of life in Michigan, the U.S. and the world
- ▶ **FOOD, ENERGY** and the **ENVIRONMENT**

MSU AgBioResearch Revenue

July 2020 to June 2021

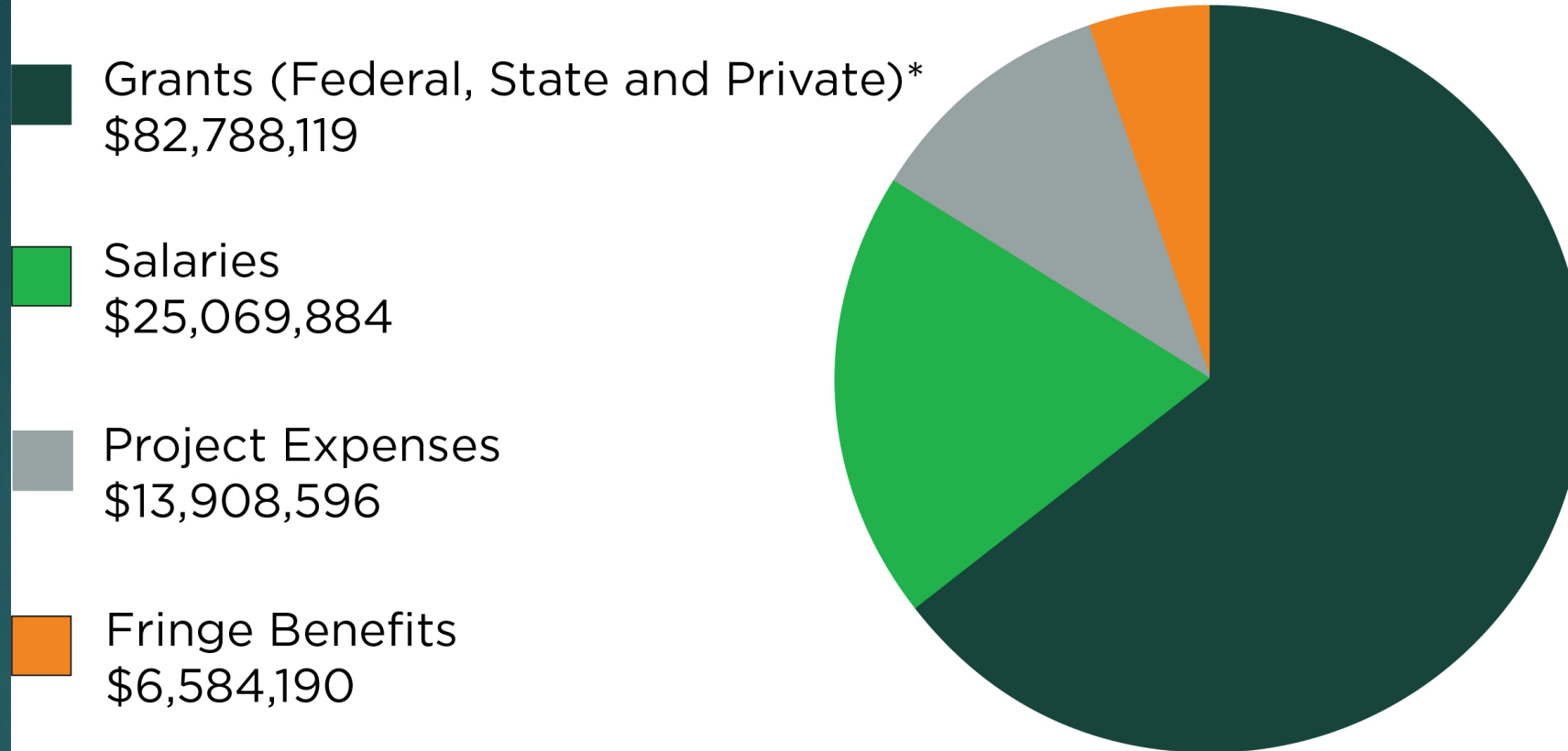


Total Revenue: \$128,350,789

*Based on 3-year average

MSU AgBioResearch Expenses

July 2020 to June 2021



Total Expenses: \$128,350,789

*Based on 3-year average

Researchers with AgBioResearch Funding

- ▶ 290 MSU Faculty Researchers
- ▶ 33 Departments/Schools in 6 MSU Colleges:
 - ▶ Agriculture and Natural Resources
 - ▶ Natural Science
 - ▶ Veterinary Medicine
 - ▶ Engineering
 - ▶ Social Sciences
 - ▶ Communication Arts and Sciences

AgBioResearch Project Expenses

- ▶ Research facilities and land
 - ▶ Equipment and other infrastructure
 - ▶ Faculty start-up packages
 - ▶ Research professionals and graduate students
-
- ▶ Goal is to meet our mission and position researchers for success

ABR: Centers

- ▶ 18 on-campus facilities
- ▶ 15 outlying centers with specialties
 - ▶ Dairy
 - ▶ Livestock
 - ▶ Dry beans/Sugar beets
 - ▶ Fruit
 - ▶ Food systems
 - ▶ Bioenergy
 - ▶ Forestry
 - ▶ Potatoes
 - ▶ Vegetables
 - ▶ Cropping systems
 - ▶ Natural systems



MSU AgBioResearch Leadership



George W. Smith
Director



Dana Infante
Associate Director for Natural
Resources Programs



James J. Kells
Assistant Director for Plant
Science Programs



Mary Weinzwieg
Budget Director



Benjamin Darling
Assistant to the Director for
Infrastructure and Facilities



Project GREEN: A partnership in support of Michigan plant agriculture

JAMES J. KELS

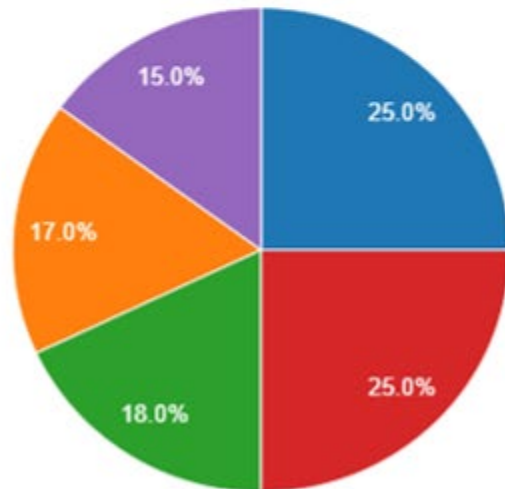
COORDINATOR, MSU PROJECT GREEN

PROFESSOR, DEPT. PLANT, SOIL AND MICROBIAL SCIENCES

Project GREEN Financial Summary

Finance and Operations

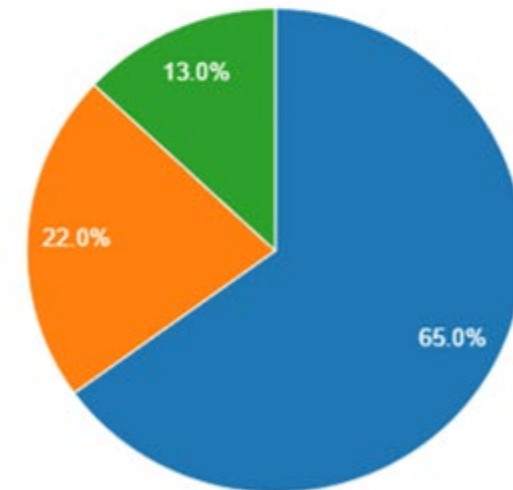
Category	Percentage
Personnel	25
New Grants	17
Program Support	18
Continued Grants	25
Value-Added	15



■ Personnel ■ New Grants ■ Program Support ■ Continued Grants ■ Value-Added

Competitive Grants New Funding Breakout

Category	Percentage
Applied	65
Basic	22
Extension	13



■ Applied ■ Basic ■ Extension

Competitive Grants

- ▶ 40+ percent of program budget
- ▶ Three competitive grant programs:
 - ▶ Applied Research
 - ▶ Basic Research
 - ▶ Extension/Demonstration
- ▶ Grant size varies, with maximum annual budget of \$40,000 per year for two years (\$25,000 per year for Extension/Demonstration)

1064 Awards Granted

47% Success Rate





Project GREEN 1998-2018 Economic Impact Study

- ▶ \$2.5B total economic impact
 - ▶ Average annual net gains of \$126.5M
- ▶ \$31.50 to \$1 long-term return to Michigan



GR19 Assessing Plant Uptake and Accumulation of PFAS from Soils Amended with Biosolids Hui Li, et. al.
Basic/Seed - \$40,000

GR21 Accumulation of Per- and Polyfluoralkyl Substance (PFAS) in Historically Archived Corn and Wheat Grains Hui Li et. al.
Applied - \$39,999

- ▶ MSU-led team receives nearly **\$2 million EPA grant** to explore biosolid treatments, effects of chemical pollutants such as PFAS PI – Hui Li September 14, 2021
- ▶ MSU-led team receives **\$750K USDA grant** to study crop uptake of PFAS and how to prevent it. PI-Hui Li December 13, 2021
 - ▶ The group will investigate the impact of current biosolid treatment methods used by wastewater treatment facilities on a variety of pollutants in soil, water and plants.

Annual Request For Proposals

- ▶ Issued in October, proposals due early-January
- ▶ Must be led by MSU or MDARD employee
- ▶ Review panels
 - ▶ MSU
 - ▶ MDARD
 - ▶ Commodity groups
 - ▶ Industry groups
- ▶ Panel/scoring system (linked to industry priorities)



Plant Agriculture Industry Priorities

Grower-led organizations continue to help direct [MSU](#) AgBioResearch and Project GREEN activities when they submit their research and Extension priorities, which identify critical and emerging issues affecting their industries. Use the navigation to the left to explore the priorities of some of Michigan's most important plant-agricultural commodities.

In addition to the industry-specific priorities listed below, Project GREEN supports research and extension programs addressing global issues facing plant agriculture, such as climate change, water quality/quantity, food safety, and invasive species, among others.

- [Apple](#)
- [Asparagus](#)
- [Blueberry](#)
- [Canola](#)
- [Carrot](#)
- [Celery](#)
- [Cherry](#)
- [Chestnut](#)
- [Christmas Trees](#)
- [Cole Crops](#)
- [Corn](#)
- [Cranberry](#)

Plant Agriculture Industry Priorities

- Apple
- Asparagus
- Blueberry
- Canola
- Carrot
- Celery
- Cherry
- Chestnut
- Christmas Trees
- Cole Crops
- Corn
- Cranberry
- Cucurbits
- Dry Beans
- Field Crop
- Floriculture
- Forage
- Hay and Grazing
- Hops

Potato

Michigan Potato Industry Research Priorities

Updated August 2021

1. Development of alternative management and detection methods for emerging issues, currently:
 - *Dickeya dianthicola*
 - Potato virus Y (PVY)
 - Mop Top Virus vectored by Powdery Scab
 - Prepare to control insects (especially Colorado Potato Beetles and aphids) if the use of neonicotinoids is lost
2. Improving potato production systems with emphasis on beneficial soil microbial activity, fertility, cover crops, water use efficiency and organic amendments in addition to improved resource use efficiency and sustainability in modern potato production (water, crop protection materials, phosphorus, nitrogen and calcium)
3. Genetic improvement through variety development and trials for traits to improve
 - Commercialization (taking into consideration size profile, consumer taste preference, reduced invertase levels to address acrylamide, and storage management)
 - Resistance to Colorado Potato Beetle, other insects, and diseases
 - Improve the use of technology to better understand abiotic and biotic stress to increase resilience in potato production systems
4. Integrated management of soil, seed and foliar borne diseases to reduce vine and tuber rotting in potatoes. Post-harvest pathogens control and handling of potatoes (controlling storage pathogens and storage issues including new sprout inhibitor development), in particular addressing:
 - late blight
 - early die
 - emerging new diseases
5. Development of new weed control management strategies in potato to address resistance, volunteers, variety herbicide sensitivity and invasive species

2022 Competitive Grants

RFP was released on October 11, 2021

Proposals due January 10, 2022

Grant awards will be announced in March/April