



LEGISLATIVE REPORT
Fiscal Year
2017

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From the Executive Director



While AURI is constantly looking forward to develop ideas, it's also so fulfilling to look back on the past Fiscal Year and see all of the accomplishments, impacts and progress made by AURI and its innovation partners and clients. In Fiscal Year 2017, AURI realized a number of achievements and helped solve many challenges faced by Minnesota's agriculture and small business sectors—all in the pursuit of the organization's mission.

One achievement for AURI was a change to the statute that governs our operations. We asked the Minnesota Legislature to clarify the wording in our statute to allow AURI to work with entities utilizing Minnesota commodities in bordering states (IA, ND, SD, WI). This is a significant change because we now have the opportunity to explore additional ideas, build wider networks for clients and further support value-added agriculture throughout an entire region of the country that will ultimately benefit Minnesota's agricultural industry.

Another accomplishment I want to point out is the significant amount of project and initiative

work done by AURI's staff. Throughout Fiscal Year 2017 we worked on more than 200 projects and initiatives, with 137 of them being new endeavors. Much of this work is the result of AURI's biennial stakeholder analysis project, which identifies new trends and challenges within Minnesota's agricultural community. It's also worth noting the continuing trend of our food and coproduct focus areas being the most utilized by client projects and for initiative development.

In the report that follows, you will learn more about AURI's accomplishments over the past fiscal year as well as gain insight into our operations and focus areas. Together, they provide a useful vignette of the organization's activities in Fiscal Year 2017 and its dedicated effort to bring innovative ideas to commercial reality to positively impact Minnesota's economy.

Regards,

A handwritten signature in black ink, appearing to read "Shannon M. Schlecht". The signature is fluid and cursive, with a long horizontal stroke at the end.

Shannon M. Schlecht
Executive Director

2017 Board of Directors

Ron Obermoller, Chair
Minnesota Soybean Research
& Promotion Council

**John Gilbertson,
Vice Chair**
Minnesota Farm Bureau
Federation

**Art Brandli,
Secretary/Treasurer**
Minnesota Wheat Research
& Promotion Council

Jerry Hasnedl
Minnesota Farmers Union

John Schafer
Minnesota Beef Council

Larry Johnson
Agribusiness

Jill Zullo
Agribusiness

Sen. Rich Draheim
Minnesota Senate

Rep. Debra Kiel
Minnesota House of
Representatives

From the Board Chair

On behalf of AURI's Board of Directors, I want to thank all of our partners and stakeholders for supporting this organization and its mission during Fiscal Year 2017. Most of all, I want to thank the Minnesota Legislature for their continued belief in AURI's mission and strong support of the work we do to bolster Minnesota's agricultural industry and rural communities.

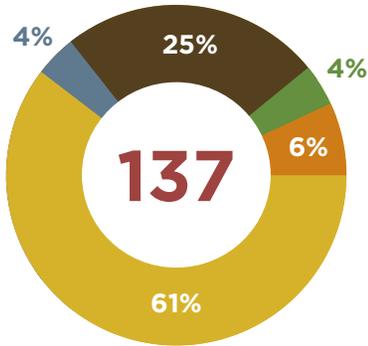
In looking at the achievements AURI made during Fiscal Year 2017, I believe the organization is in a strong position to grow its services and capabilities. With the welcome changes to our statute and funding support, AURI will be able to better provide resources and services to farmers, entrepreneurs and businesses. What's more, with lab enhancements in process and the development of new partnerships, I believe AURI is poised to reach new heights in furthering value-added agricultural innovations to benefit the state and regional agricultural industry.

Thank you for your support of AURI.

Ron Obermoller
Board Chair

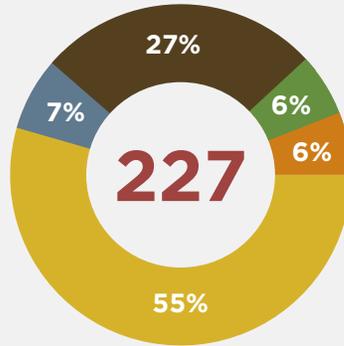
At a Glance

NEW PROJECTS AND INITIATIVES OPENED



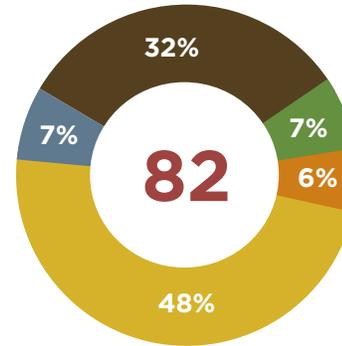
- Food 84
- Biobased 5
- Coproducts 34
- Renewable Energy 5
- Multi-Area 9

TOTAL PROJECTS AND INITIATIVES SERVICED



- Food 124
- Biobased 15
- Coproducts 62
- Renewable Energy 13
- Multi-Area 13

PROJECTS AND INITIATIVES CLOSED



- Food 39
- Biobased 6
- Coproducts 26
- Renewable Energy 6
- Multi-Area 5

Percentages may not total 100% due to rounding.

PROJECT AND INITIATIVE HOURS BY FOCUS AREA



STATE FISCAL YEAR 2017 REVENUE

\$4,213,419

STATE FISCAL YEAR 2017 EXPENSES

\$4,367,940

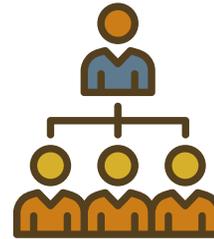
Data provided from AURI's Microsoft Dynamics GP Accounting System. All data based on State FY17 (July 1, 2016 to June 30, 2017)

Client Impact: July 2011 – June 2017



**ESTIMATED # OF
JOBS CREATED/RETAINED**

537



**ESTIMATED # OF FUTURE
JOBS CREATED/RETAINED**

306

(in next 5 years)



**ESTIMATED NEW
CAPITAL INVESTED TO DATE**

**\$89.3
MILLION**



**ESTIMATED POTENTIAL
FUTURE CAPITAL INVESTMENT**

**\$138.5
MILLION**

(in next 5 years)



**ESTIMATED NEW GROSS ANNUAL SALES
RESULTING FROM AURI ASSISTANCE**

**\$73.9
MILLION**



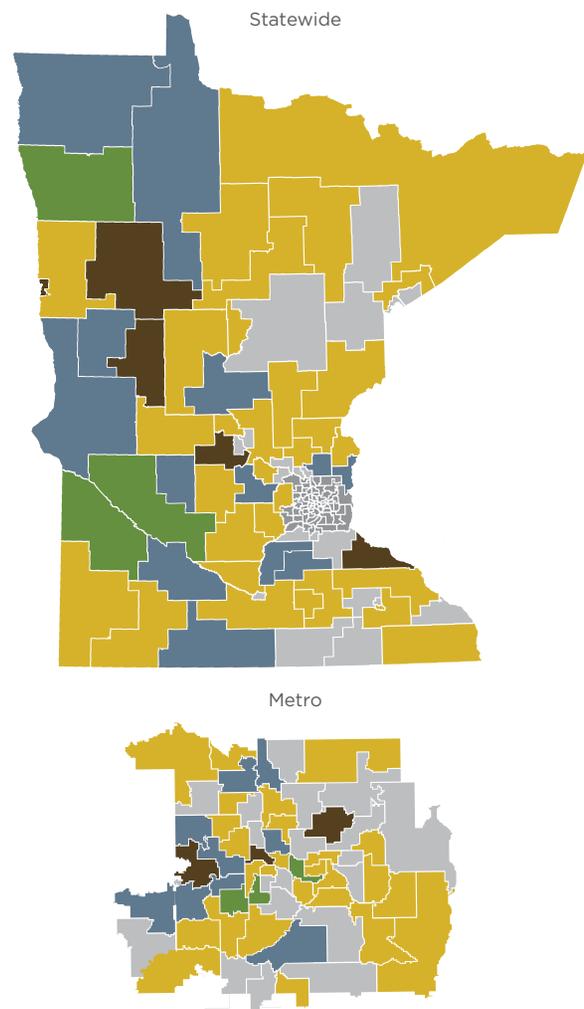
**ESTIMATED TONS OF
COMMODITIES UTILIZED PER YEAR**

323,451

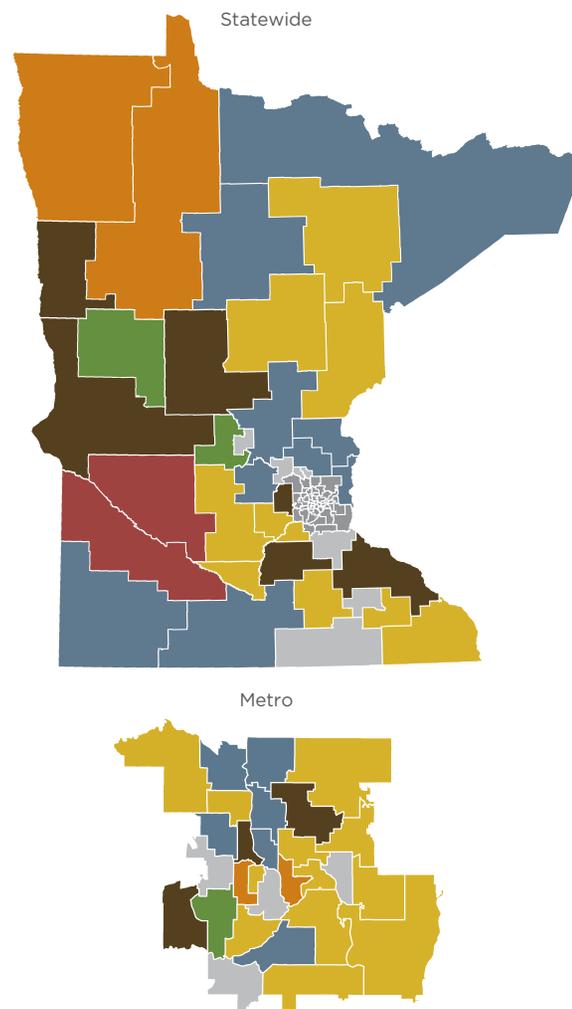
As reported by AURI clients; represents 50 percent of projects that exceeded five hours of service.

AURI Client Projects Worked On July 2011 – June 2017

MINNESOTA HOUSE DISTRICTS



MINNESOTA SENATE DISTRICTS



AURI is proud to partner with businesses and entrepreneurs throughout Minnesota. As the map to the left shows, AURI worked on client projects in most of Minnesota's 87 counties between July 1, 2011 and June 30, 2017. The impact of these collaborations, as noted on page 5, were significant to communities throughout the state.

- 1 to 5 Projects
- 6 to 10 Projects
- 11 to 15 Projects
- 16 to 20 Projects
- 21 to 25 Projects
- 26 to 35+ Projects

AURI Mission

Foster long-term economic benefit for Minnesota through value-added agricultural products.

Services

AURI provides a host of services and resources to assist clients in developing their innovations, creating new products and increasing the use of Minnesota agricultural products. Resources include hands-on technical assistance and staff expertise as well as access to lab space—both of which are typically cost-prohibitive to small businesses. In addition, AURI offers services to help entrepreneurs and businesses grow to meet their full potential. Clients have access to commercialization services, which can help determine market entry points, economic assessments and feasibility studies, all of which take the guesswork out of launching a product while providing a fact-based strategy for clients.

AURI also conducts industry initiatives to fill information gaps for public use and convenes industry participants to both inform stakeholders and disseminate information through its Innovation Network Program.



FOOD



COPRODUCTS



BIOBASED



RENEWABLE ENERGY

In pursuit of its mission, AURI focuses its efforts on four key areas of endeavor, which include Renewable Energy, Biobased Products, Food, and Coproducts. Each area is an important component of Minnesota's value-added sector and has the ability to make a difference in the success of the state's farmers, entrepreneurs and businesses. The end result is a positive impact on the Minnesota's agricultural industry and economy, especially in rural areas.

Food

Fiscal Year 2017 was, once again, outstanding for AURI's Food focus area with growth that continues a multi-year trend of significant activity. During this period, the organization's Food Team worked on a multitude of projects from all corners of the food industry. From barbecue sauces to kombucha recipes to vegan pizzas, the Food Team worked on several innovative food and drink products. The variety of projects undertaken stands as a testament to the Food Team's unparalleled expertise as well as the vibrancy of Minnesota's food sector.

The AURI Food Team made major contributions to Minnesota's agricultural and food sectors, working on 100 unique projects throughout the year, of which 71 were new. During that same period of time, the team started work on 13 initiatives and furthered efforts on 11 more for a total of 24 food-related public initiatives.

All told, the Food Team's efforts accounted for 55 percent of the total number of projects and initiatives, combined. In addition, their time spent on these activities accounted for 32 percent of total project hours expended by AURI.

This all translates into hundreds of food and beverage products utilizing Minnesota-grown ingredients taking a step closer to commercialization and availability. It also means the potential creation of hundreds of new markets for Minnesota farmers.

Fiscal Year 2017 was, once again, outstanding for AURI's Food focus area with growth that continues a multi-year trend of significant activity.

In addition, AURI continued to support Minnesota's food and beverage ecosystem by bringing thought leaders together for a variety of innovative roundtables and networking opportunities. Topics ranged from new alternative proteins to food safety and HACCP training. These events offered an opportunity for industry colleagues to connect, share perspectives on new trends and advance food innovation. AURI also continued to support the Minnesota Cup by having its food scientists judge products in the fast growing food/ag/beverage division.

With so much happening in the food sector AURI is confident that its Food focus area will continue to play a major role in Minnesota's entrepreneurial and value-added agriculture sector. This is good news because it offers a lot of future potential for farmers and ag processors within the state.



AURI & The Amazing Chickpea

IDEA TO REALITY

To create a new, plant-based butter spread that can be used in similar ways to peanut butter, but without the peanut allergen concern.

AURI'S ROLE

AURI food scientists worked with the product developer to provide formulation assistance, product sensory analysis and nutritional labeling.

OUTCOME

The Amazing Chickpea currently has three different varieties, which can be found on grocery store shelves and at farmers markets in communities throughout central Minnesota.

Food Efforts



124

TOTAL PROJECTS AND INITIATIVES



55%

PERCENT OF TOTAL PROJECTS AND INITIATIVES



32%

TOTAL PROJECT HOURS EXPENDED

Coproducts

AURI's Coproducts team focused on working with clients to identify new, innovative uses for Minnesota's commodities and ag residues in Fiscal Year 2017. It undertook this work with the end goal of creating additional revenue sources for the state's agricultural producers and processors. In looking at the team's accomplishments, it's easy to see how it contributed to Minnesota's economy.

Over the course of the year, the Coproducts Team began work on 34 new projects and public initiatives. It also continued efforts of an additional 28 projects. This means the group was responsible for 27 percent of AURI's total project portfolio as well as nearly a quarter of all hours expended by AURI's project and technical staff. Of all the focus areas, activity in the Coproducts division was second only to food.

However, numbers don't tell the whole story—the projects, however, do. Great examples include AURI's assistance in developing new fertilizers along with new livestock feed supplements.

Because every project in this focus area utilizes Minnesotan agricultural resources and byproducts, the Coproducts Team achieved the goals set out for it and exceeded expectations.

This is good because it indicates that even though coproduct service demand has been strong in recent years, the horizon for innovative new uses is still wide open for the state's entrepreneurs and businesses.

AURI's Coproducts team focused on working with clients to identify new, innovative uses for Minnesota's commodities and ag residues in Fiscal Year 2017.

Speaking of the future, AURI plans to continue growing its Coproducts division and expanding its lab capabilities. During Fiscal Year 2017 the coproducts lab achieved its goal of adding new oilseed press technology. This has resulted in a number of new clients seeking assistance for this service. Looking forward, AURI plans to expand its coproducts lab further by adding space and upgrading its dryer capabilities. These are much larger goals than in the past, but attainable nonetheless with hard work, support from the legislature and a clear vision of the future for this focus area's potential.



AURI & Steuart Labs

IDEA TO REALITY

Steuart Labs is currently developing a new equine nutritional supplement to improve specific elements of health for horses. When commercialized, this product will make a major impact on many areas of the equine industry.

AURI'S ROLE

AURI assisted Steuart Labs by providing product formulation, manufacturing protocol and product development for three new equine nutritional supplements. AURI also produced test batches prior to product launch to assure proper manufacturing requirements and identify that product specifications are met.

OUTCOME

Steuart Laboratories is currently in the process of moving these four new product lines into the marketplace, which will result in expanded revenue opportunities as well as potential job creation for this southeastern Minnesota company.

Coproduct Efforts



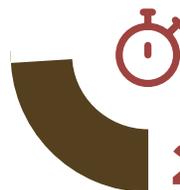
62

TOTAL PROJECTS
AND INITIATIVES



27%

PERCENT OF TOTAL
PROJECTS AND INITIATIVES



24%

TOTAL PROJECT
HOURS EXPENDED

Biobased Products

The efforts of AURI's Biobased Products Team continued to be strong during Fiscal Year 2017. As in the past, it devoted its energy and resources to finding new, innovative biobased products to replace petroleum-based ingredients. The work covered a wide scope of products and processes than can illustrate agriculture's role in a more sustainable economy.

Examples of this can be found in both high and low profile projects, which explored opportunities for new biobased asphalt rejuvenator and sealant products, cornstarch plastics and mushroom-based ingredients for the lotion and cosmetics industry.

But these are just a few examples. Overall, the Biobased Products Team worked on 11 projects and four public initiatives throughout the year. Of those, three were projects initiated during the year and two were new initiatives, which accounted for one-third of all activity in this focus area. The team was also extremely efficient in its efforts, completing its work on 40 percent, or six projects and initiatives over the year.

The efforts of AURI's Biobased Products Team continued to be strong during Fiscal Year 2017. It devoted its energy and resources to finding new, innovative biobased products to replace petroleum-based ingredients.

One additional highlight for the year was the naming of enVerde as AURI's newest Entrepreneur in Residence. This company is heavily involved with biobased solutions and its current project is commercializing technology that can convert a wide range of organic material into synthetic gas, or syngas. Looking forward, AURI sees a lot of promise for biobased solutions. As the world increasingly recognizes the benefits of biobased alternatives to petroleum ingredients, so, too will the demand increase. AURI is ready to meet that need by supporting entrepreneurs and businesses in their quest to bring better, more sustainable options to the market.



AURI & enVerde

IDEA TO REALITY

Minneapolis-based enVerde is working to commercialize breakthrough technology that can convert a wide range of organic material into synthetic gas, or syngas.

AURI'S ROLE

AURI is assisting enVerde through the Entrepreneur in Residence program. This offers access to AURI's facilities in Marshall, Minnesota, and knowledge resources throughout the organization to help further develop enVerde's sophisticated gasification process, which helps move the process closer to commercialization.

OUTCOME

enVerde expects to push the limits of the technology in order to apply what the company learned to the engineering of its first commercial plant.

Biobased Product Efforts



15

**TOTAL PROJECTS
AND INITIATIVES**



7%

**PERCENT OF TOTAL
PROJECTS AND INITIATIVES**



10%

**TOTAL PROJECT
HOURS EXPENDED**

Renewable Energy

AURI understands the importance of renewable energy to Minnesota, its economy and its population. This is especially true with regard to using ag products for things like new or advanced fuel sources, electricity and industrial heating and cooling technology. What's more, work in these areas is important to the nation's future and its dependence on traditional fuel sources.

Throughout Fiscal Year 2017, the Renewable Energy Team conducted work on a variety of projects and initiatives ranging from biomass heating and cooling technology to finding ways to use sugar beet byproducts for energy generation. All told, the team worked on 13 unique projects, of which four were initiatives. Of those 13, five were newly initiated and six were completed.

One highlight of the year was a study conducted with the Minnesota Department of Agriculture, Minnesota's Clean Energy Resource Teams and Viking Farms to determine the feasibility and cost benefits of using woody biomass to heat full-scale, commercial poultry barns. The initial report should be available soon, and will detail the experiment, which is promising and may be the first step in providing poultry producers an alternative to LP fuel--especially in colder climates. While the initial study focused on economic benefits of biomass heat, data

collected also indicates the potential for improved flock health and growth, which requires further validation.

One highlight of the year was a study conducted with the Minnesota Department of Agriculture, Minnesota's Clean Energy Resource Teams and Viking Farms to determine the feasibility and cost benefits of using woody biomass to heat full-scale, commercial poultry barns.

Looking to the future, AURI sees a lot of potential for non-traditional sources of renewable energy. This is especially true for the state of Minnesota and the greater Midwest region as the agricultural infrastructure exists to supply the alternative renewable fuel sources to make any such endeavor feasible. What's more, these latest innovations create commercial opportunity for entrepreneurs and businesses in the region and its potential to strengthen the renewable energy industry. AURI is poised to assist and help bring these ideas to reality.



AURI & Biomass Heating of Poultry Barns

IDEA TO REALITY

Conduct a two-year study to determine the efficacy and financial feasibility of heating poultry barns by burning woody biomass, in place of traditional liquid propane fuel.

AURI'S ROLE

With funding provided by the Minnesota Department of Agriculture's (MDA) Agriculture, Growth, Research and Innovation (AGRI) program, AURI collaborated with the UMN Clean Energy Resource Teams, Minnesota poultry farmer, Bill Koenig of Viking Company, EvenTemp Biomass, GNP Companies (now Pilgrim's Pride), and the Chicken and Egg Association of Minnesota to determine operational requirements for biomass heating, while assessing benefits and overcoming challenges for implementation.

OUTCOME

Given the positive results of implementing this biomass heat application within this project and the improvements developed in the ease of operating the test system, the Koenig family farm (Viking Co.) is actively pursuing the design and financing of a more universally applicable biomass heating plant in its other chicken barn.

Renewable Energy Efforts



13

TOTAL PROJECTS AND INITIATIVES



6%

PERCENT OF TOTAL PROJECTS AND INITIATIVES



17%

TOTAL PROJECT HOURS EXPENDED

Innovation Network Program

AURI's Innovation Network Program (INP) continued to thrive throughout 2017. In pursuing its goal of actively engaging thought leaders, industry professionals, commodity groups and educational institutions, the INP successfully raised awareness of new technology and trends that positively impact AURI clients and the Minnesota economy.

The INP continues to create opportunities for meaningful dialogue between entrepreneurs, businesses and governmental agencies for the purpose of connecting resources and building partnerships. It accomplishes this by hosting a variety of events, including thought leader roundtables, educational industry forums and large innovation events that span multiple industries and disciplines. In doing so, the INP brings individuals together for thoughtful and deliberate exchanges of ideas that have the potential to drive economic and innovation activity for Minnesota's value-added agriculture ecosystem.

In Fiscal Year 2017, the INP hosted the first-ever New Uses Ag Innovation Forum. The event brought together leaders from multiple industries to discuss innovation, funding, entrepreneurialism and other activities in the value-added agriculture sector. With more than 150 attendees, this was AURI's largest event to date. The response from attendees and industry partners was extremely positive, so the INP is already planning the next forum, for April 2018.

The INP executed a total of 16 events throughout the year. This included a forum devoted to soy-based road sealant and preservation technology as well as Food Industry Thought Leader meetings on alternative proteins.

The INP is an important component of AURI and just as integral to achieving the organization's mission. In fact, the INP is often the division of AURI bringing groups together for cross-pollination of innovative ideas.



16

**TOTAL NUMBER
OF EVENTS**



436

**TOTAL EVENT
ATTENDEES**



2,652

**REPORTS VIEWED
AND DOWNLOADED**



AURI & The New Uses Forum

IDEA TO REALITY:

In the fall of 2016, AURI's leadership identified an unmet need in Minnesota for an event dedicated to new uses and value-added agriculture. It was then decided that AURI would host the first-ever forum.

AURI'S ROLE:

A team of AURI staff built this custom event by assembling a variety of panels and keynote addresses from some of the most well respected voices in new uses and value-added agriculture.

OUTCOME:

The New Uses Forum proved to be AURI's most successful and highly attended event. The forum brought more than 150 attendees together to hear about the latest news, technology and philosophies from the value-added agriculture sector. Responses in a follow-up satisfaction survey were so positive, AURI decided to immediately begin planning the next forum, which is scheduled for April 2018.



State Fiscal Year 2017 Financials

STATE FISCAL YEAR 2017 EXPENSES

\$797,735	Operations
\$632,277	Institutional Advancement
\$817,764	Program Support
\$2,120,164	Programs & Services

\$4,367,940 Total Expenses

STATE FISCAL YEAR 2017 REVENUE

\$31,614	Interest Income
\$73,372	Miscellaneous
\$3,643,000	State Appropriations
\$259,845	Private Grants/Outside Sources
\$60,741	Federal Grants
\$25,458	MSRPC - Collaboration
\$119,389	MCRPC - Collaboration

\$4,213,419 Total Revenue

Looking Forward

AURI extends its gratitude to you and your esteemed colleagues in the Minnesota Legislature. Thanks to your support, AURI continues to play an important role in Minnesota's economy by bringing value-added products to the marketplace, which supports vital aspects of rural communities and the agricultural sector throughout the state.

Also, thanks to your commitment to AURI's mission, the organization continues to seek out new opportunities to utilize Minnesota commodities through value-added agricultural products. In essence your support is a mandate for AURI to explore ways for the organization to meet the full potential set out for it in Minnesota statute.

To that end, AURI is undertaking a number of steps to achieve that shared vision. With new innovations developing every day, there has yet to be a slowdown in the discovery and commercialization of value-added agricultural products. This is important to AURI's operations because it indicates a clear, ongoing need for the organization's expertise and services. AURI believes that upcoming modifications to its operations will help it support even more entrepreneurs, farmers and businesses throughout Minnesota.

The Future of Funding

In an effort to better align AURI's operations with the language of its statute (Minnesota Statute 116V.01), which states AURI shall to the extent possible, earn and receive revenue from contracts, patents, licenses, royalties, grants, fees-for-service, and memberships, the organization is undertaking efforts to grow its funding through these mechanisms. This plan will address most of the elements outlined within the statute and ultimately make AURI a stronger organization.

While this will have an effect on operations and the business model, AURI is confident it will ultimately benefit its clients and partner organizations. Not only will this change provide additional financial resources to enhance the organization's services, it will also allow AURI to reinvest in its clients' projects, gain additional tools and lab resources, and strengthen Minnesota's value-added agricultural industry. These new resources will also further leverage your financial support to increase the economic impact of your investment.

Growing for Today and Tomorrow

Since its inception, AURI has limited its focus to Minnesota farmers, commodities and entrepreneurs. The organization is proud of all the work it has done within the state and the support it has provided to Minnesotans for nearly 30 years. Thanks to a change in the statute governing the organization, AURI can now explore and leverage projects in Minnesota's bordering states, to achieve maximum results for Minnesota agriculture. This change is expected to have a beneficial impact because working with entrepreneurs and small businesses in other states that also utilize Minnesota commodities enhances utilization benefits as

well as provides greater exposure to value-added ideas that can be implemented here. AURI is taking a measured approach to this new opportunity as currently demand within Minnesota is high and servicing Minnesota is our first priority.

Another area of future growth lies within our existing facilities in Minnesota. For some time now, client and industry demand outpaced what AURI could efficiently provide with the current size of its Waseca facility. Therefore, the organization is exploring an expansion that will utilize a portion of the bonding dollars provided to AURI to expand its footprint with additional laboratory space and equipment to better meet client project demand.

In addition, AURI continues to explore ways to expand technical resources and analytical tools to meet new client needs. This will continue as part of AURI's quest to best serve the industry. Some recent examples are the addition of an oil seed press in the Waseca facility and the acquisition of resources to conduct high performance liquid chromatography in the Marshall lab. With these additional resources, AURI offers a variety of services to clients who wish to explore new ideas. The result so far has been resoundingly positive, as AURI has acquired new clients and new projects from existing clients that utilize this equipment.

As you can see, the organization has a bright future, and AURI is confident these changes and investments will positively impact the whole of the state's agricultural and small business sectors. The positive impact AURI imparts throughout the state would not be possible without your ongoing support and we appreciate your continued dedication that helps turn innovative agricultural ideas into commercial reality across numerous rural and urban communities throughout Minnesota.

State Fiscal Year 2017 Active Projects and Progress Report

Project Name **% Completed**

MULTI-AREA	
Feasibility Study & Technical Assistance	39%
2016 Soybean Technical Advisor Program	100%
Assessment of National and Global Value-Added Agricultural Technologies	100%
Value Added Ag Research Forum	100%
2017 Soybean Technical Advisor Program*	73%
MDA Value Added Grant Assistance*	100%
Global Entrepreneurship Work Presentation*	100%
2016 Farm Bureau Judging*	100%
2017 State of Manufacturing Ag Focus Group*	24%
Ag/Food Innovation Investment Coalition*	19%
MN Cup Events and Assistance*	33%
Clean Tech Open Judging 2017*	2%
Value Added Cluster Research*	46%

BIOBASED	
Biobased Product Development	39%
Development of Corn Starch Fire Retardant	100%
Development of Biobased Class B Fire Retardant	100%
Exploration-Glycerin-Blending Agent	100%
Anaerobic Digestion to Value Added Small Molecules	100%
Acrylates from Sugar I	63%

Project Name **% Completed**

Acrylates from Sugar II	100%
Mushroom Based Lotion*	14%
Biobased Product Development*	8%
Value Added Glycerin Fermentation*	100%
Renewable Chemicals and Drop-In Biofuels from Corn*	27%
BioPreferred Label	19%
Soy Based Road Treatment*	38%
Corn Protein Plastics from Agricultural Products	100%
Protein Development*	44%

COPRODUCTS	
Performance Assessments of Soy Proteins in Livestock Production-Phase I	59%
Grain Mix Development	100%
Butanol Process-Aquaculture	1%
Butanol Process-Soil Amendment	100%
Soy Proteins-Aquaculture Feed	100%
Rumen Protected Nutrient	100%
Dairy Feed Development	100%
Improved Odor Control Litter Development	100%
Low Density Litter Development	100%
Natural Scented Litter-Insect Repellency	100%
Oats Dehulling/Pea Farm Traceability Project	100%

* Indicates this project was initiated in State FY17. % completed defined as percent of budgeted hours expended.

Project Name	% Completed
Dairy Goat Coproducts	100%
Organic Alfalfa Pelletting Assistance	100%
Coproduct Based Seed Starters and Potting Mix	100%
Opportunities for Cob Waste	100%
Hay Based Compost Development	100%
Evaluate Grain Hardness Variability	100%
Feed Additive Densification	41%
Commercial Fertilizer Development	33%
Value-Add Opportunity for Livestock Manure	100%
Food Waste Drying	60%
Coproduct Development*	9%
Feed Additive Development*	100%
Distilled Corn Mash to Energy*	1%
Screenings Coproduct Development*	100%
Swine Compost Mat Test*	100%
Manufacturing Lysine HCL Pellets*	100%
Hemp Development Assistance*	100%
Fiber Utilization*	100%
Drying Process Assessment*	17%
Bird Feed Block*	48%
Glycerol Clean Up*	100%
Sustainable-Corn Stover*	41%
Coproduct Development*	72%
Pet Product Development *	1%
Fertilizer Development from Ag Coproducts*	1%
Fiber Utilization*	3%
Screening Coproduct Development*	70%
Organic Sugar Beet Processing*	51%

Project Name	% Completed
Fertilizer Development from Ag Coproducts*	100%
Animal Nutrition Supplement Development*	100%
Utilization of Organic Coproducts from Ethanol Production*	9%
Low Density Litter Development*	32%
Food Process Byproduct/Animal Manure Compost Potting Soil Project*	43%
Organic Feed and Plant Processing Project*	24%
Absorbent Development*	3%
Snack Food Process Assistance*	1%
Agricultural Residue Performance Evaluation in Denitrifying Bioreactors	68%
Denitrifying Bioreactor Field Trial	100%
High-Value Biomass	100%
On Farm Shrimp Feed Trial	100%
Development of an Improved Corn Seed Coating for Yield Promotion	100%
Small Scale Hops Densification in Minnesota	43%
Speciality Milling of Commodities/Coproducts	100%
Supporting Forever Green Minnesota Through Value-Added Agricultural Products Processing	100%
Farm Shrimp Feed Trial-II*	100%
Extraction of Fermentable Sugars*	36%
Clean Tech Open 2016 Assistance*	100%
Turkey Bedding Initiative*	100%
Lab Column Field Denitrifying*	15%
Alfalfa Protein Initiative*	1%
Food Pricing Innovations*	1%
Beef Metabolism Study	64%
Reduced-Fat Distillers Grains in Finishing Dairy Steer Diets	100%

* Indicates this project was initiated in State FY17. % completed defined as percent of budgeted hours expended.

Project Name	% Completed
FOOD	
Condiment Sauces	38%
Nut Substitutes/Scale-up	61%
Product Market Testing	100%
Dog Treat Reformulation	100%
Chewy Granola Bar Development	31%
Sambusa Product Development	17%
Gluten Free Cookies Development	55%
Micro-Malting Pilot Facility	36%
Ghee Butter Development	100%
Kombucha Beverage Product Development	100%
Somalian Hot Sauce	100%
Popsicles Development	100%
Meatball Recipe Analysis	100%
Honey Butter with Vanilla	51%
Picante and Chimichurri Sauces	63%
Meat Product Development	100%
Oat Muesli Formulation and Nutrition/Shelf Life Project	100%
Braised Pull Pork and BBQ Seasoning Project	100%
Frozen Appetizers	100%
Garlic Dips with Soybean Oil	100%
African Pepper Sauces	100%
Pancake Ball Development	100%
Further Processing of Local Food	70%
Nut Butters Development	100%
Cheese Nutritional Analysis	100%
Gluten Free Wild Rice Burger	51%
Lotus Seed Snack Product	47%

Project Name	% Completed
Heritage Grains Sourdough Project ATP	23%
Salsa Scale	100%
Product Development and Refinement	64%
Sweet BBQ Sauce Formulation and Labeling	100%
Sausage Product Development	61%
Tiramisu Labeling Assistance and Guidance	100%
Leafy Green Pesto Sauce Project	11%
Spread Development Labeling	37%
Bar Development	22%
Frozen Dough/Frosting*	100%
Refrigerated Granola Bars*	13%
Pickled Products and Condiments*	100%
Soda Beverage Formulation*	100%
Cold Brew Coffee Flavors*	38%
Asparagus Sticks and Moles*	11%
Fruit Beverage Development*	100%
Nutritional Labels*	100%
Ice Cream Sauces*	23%
Brown Cheese Development*	100%
High Oleic Sunflower Oil*	100%
Boiled and Fried Peanuts*	100%
Maple Syrup Products*	100%
Shrub Drink Development*	100%
Specialty Dessert Labelling*	100%
HACCP Plan Guidance*	100%
Protein and Energy Snacks*	76%
Sambusa Scale Up-Labeling*	49%
Refrigerated Pasta MAP Package*	4%

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Project Name	% Completed
Heritage Grains Sourdough Project PDS*	11%
Vegan Pizza*	13%
Vineyard Chocolates*	30%
Bouillon Product Development*	5%
Cauliflower Pizza Development*	25%
Frozen Treats Development*	3%
Broth Product Development*	16%
New Snack Nutrition*	8%
Creamer Development*	100%
Nigerian Stew*	19%
Cocoa, Bee, and Nuts*	100%
Desserts Development*	31%
Jerky Development*	92%
Wine-Mead-Currant Fruit Beverage Product Development*	1%
Brazilian Snacks*	20%
Tiramisu Nutrition Label*	100%
Corn Pudding*	12%
Frozen Fried Dough Pizza*	26%
Korean Sauce*	16%
Jams Development*	18%
Ethiopian Drinks*	22%
Graham-Style Crackers*	10%
Oatmeal Mix*	5%
Grape Jelly Development*	100%
Frosting Development*	15%
Green Leaf Kombucha Development*	0%
BBQ Sauce Development*	100%
Hemp Oil Blend*	7%

Project Name	% Completed
Pickle Dips Development*	30%
Garlic Blu Sauce*	6%
Ice Cream Topping Development*	16%
Sunflower Hummus Development*	1%
Egyptian Jam Development*	42%
Popcorn Development*	0%
Bloody Mary Mix Development*	20%
Plant Protein/Meat Jerky*	35%
Handheld Pie Development*	39%
Sauces Development*	5%
Salads Development*	23%
Ginger Beer*	8%
New Food Product Assessment*	8%
Food Truck Offering Assistance*	1%
Pound Cake Development*	14%
Cider Development*	0%
Soups Development*	28%
Snack Food Development*	1%
Honey Products Development*	1%
Fruit Baked Products*	59%
Pickled Asparagus Development*	26%
Black Garlic Development*	37%
Sunflower Feed Cake Enhancement*	33%
Chickpea Flour Product Development*	76%
Sensory Evaluation Laboratory	100%
Blend Formula for Sensory Testing	93%
2015 Farm to Plate	31%
Clean Label Food Formulation Guide	100%

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Project Name	% Completed
Food Safety Training & Appropriate Food Handling Techniques	41%
MN Commodities as Protein Ingredients in Food	42%
2016 Meat Lab HACCP and Maintenance	100%
HACCP 2016 Workshops	100%
FY16 Industry Thought Leaders	100%
Food Safety Networking	100%
Innovation Network Program for Food Agbioscience - Southeast Minnesota	100%
MN Cup Food, Ag, and Beverage Division Assistance	100%
Protein Highway*	100%
High Oleic Soybean Oil Cooking Demo*	81%
Food Safety Networking*	46%
Industry Thought Leader*	100%
TBARS Analysis*	100%
Soy Nutrition Institute	53%
Food Entrepreneur Workshops	52%
Minneapolis Sensory Event	100%
Food Safety Defense Task	13%
Grand Rapids Sensory Event	100%
Craft Brewery Field Day	22%
Sourdough Fermentation	4%
Clean Labels 2017 AIP	1%

RENEWABLE ENERGY	
Black Carbon Analysis	60%
Biodiesel Development	100%
Poultry Litter Combustion*	32%
Wood Heat-Poultry Production	70%

Project Name	% Completed
Heating the Midwest/Renewable Biomass Action Team 2016	100%
Biomass Cooling Technology	98%
Heating the Midwest-Contracted Services 2016	100%
Heating the Midwest-Facilitation Contracted Services 2016	100%
Sugar Beet By-Products	67%
Heating the Midwest/Renewable Biomass Action Team 2017*	100%
Minnesota Renewable Energy Roundtable 2017*	100%
Heating the Midwest/Renewable Biomass Action Team 2016*	100%
FY16 Minnesota Renewable Energy Roundtable	100%

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