Agricultural Cooperatives
Profit Distribution Alternatives for Agricultural Cooperatives

Agritourism
Making Money with Agritourism

Pest Management
Pest Management in Processing Facilities
Welcome to the current issue of our departmental Research Update. The research program in the Department of Agricultural Economics aims to create practical, empirical knowledge that will increase the efficiency and productivity of Oklahoma agriculture and rural communities as well as improve the well-being of Oklahomans.

Our faculty members address a vast array of topics. We intend for these research results to serve producers, ranchers, policymakers, emerging and existing businesses, and the public. Research projects are determined by faculty members after reviewing current research efforts in our profession. We utilize input from peers, clientele, collaborators, extension educators, and funding agencies to determine specific research priorities.

Featured topics in this issue range from profit distribution for agricultural cooperatives, to agritourism opportunities for farms and ranches, to pest management issues in processing facilities to generic advertising impacts. All of these topics impact profitability in agriculture. We also provide any update on current and future research activities of the department including local food business models and watershed conservation. Finally, we list 51 peer reviewed articles published by our faculty members over the past year and we list the 2014 graduate student dissertations and theses completed. Please check out our media list and follow us on our various social media outlets.

We hope you enjoy this issue.

Mike D. Wirth
About the Cover:
Susan Bergen of Peach Crest Farms in Stratford, Oklahoma, displays peaches for sale. Read more about agritourism businesses on page 6 and about local food business models on page 12.

*Photo courtesy of Oklahoma State University.*
Cooperatives are unique because they distribute profits to their members in proportion to the volume of business the members conduct with the firm. This distribution is referred to as a patronage refund or patronage distribution and is a fundamental cooperative principle. This structure differs from that of investor-owned firms where profits are distributed in proportion to ownership. The cooperative profit distribution structure creates a number of unique features of the cooperative firm, including methods of acquiring equity capital; means of providing patronage refunds distributions to patrons; and the tax treatment of patronage refund allocations.

Researcher
Phil Kenkel, OSU Department of Agricultural Economics Regents Professor and Bill Fitzwater Cooperative Endowed Chair, has been conducting this research as part of his study regarding the shift by many agricultural cooperatives to retain equity as unallocated equity instead of the traditional qualified retained patronage distribution.

Issues
Agricultural cooperatives, like other cooperative firms, have many methods to choose from when determining how they distribute and retain profits. These choices impact the cooperative’s solvency, liquidity, and cash flow and each patron’s cash flow and realized return from the cooperative. Taxation at both the firm and the patron level further complicates the situation.

In recent years, the availability of the Domestic Production Activities Deduction has impacted the profit distribution of many agricultural cooperatives. The DPAD, also commonly referred to as the Section 199 Deduction, was introduced into US tax law as part of the American Jobs Creation Act of 2004. In addition to traditional manufacturing activities, the DPAD applies to producers who manufacture, produce, grow, or extract agricultural or horticultural products. Cooperatives who market agricultural or horticultural products for their patrons can elect to show the deduction at the cooperative level.

The tax treatment of farmer cooperatives is described in Subchapter T of the Internal Revenue code that was enacted in 1962. Subchapter T specifies the tax treatment of patronage refund allocations by cooperative firms. Patronage refunds distributions, which are based on how much business the member conducted with the cooperative during the fiscal year, may be either cash refunds or non-cash funds (allocated retained refunds). Subchapter T also specifies that patronage refunds may be either “qualified” or “nonqualified”. Qualified allocations are given to the patron with documentation complying with the Subchapter T code. The patron agrees to include the entire amount of the qualified distribution in the taxable income for the current fiscal year. The cooperative can then exclude the amount from their
taxable income.

While cooperative CEOs and boards of directors appear to be astute in analyzing the tax and cash flow implications of profit distribution alternatives, whether they understand the impacts on the members’ returns from the cooperative is not clear.

**Objective**

The objective of this research is to examine the impacts of various profit distribution alternatives on cooperative members’ returns from the cooperative while maintaining the cooperative’s required cash flow. The research also examines the extent to which cooperative managers and board members understand the implications of their profit distribution decisions.

**Project**

For this project, a six-year time series of financial data obtained from 10 Oklahoma farm supply and grain marketing cooperatives was used to create a 30-year time series of pro-forma financial statements for each cooperative. The long-term series is necessary to model revolving equity (the equity shares that are issued in cooperatives’ profit retention strategies).

**Results**

Marketing and supply cooperatives must retain profits to fund infrastructure and to revolve previously issued equity. Historically, these firms have retained funds by distributing qualified retained patronage. The results of this research suggest that nonqualified retained patronage provides a higher patron return relative to qualified retained patronage. (In a retained patronage distribution, the patronage earnings are placed in a patron’s equity account, and the funds are retained by the cooperative to fund infrastructure and operations. Under a nonqualified retained patronage distribution, the patron does not include the distribution in their taxable income, and the cooperative does not exclude the distributed earnings from its taxable income.)

The results also indicate that nonqualified retained patronage results in a higher patron Internal Rate of Return relative to retaining profits as unallocated equity. Those results hold at both high and low tax rates and with or without the use of the DPAD.

Historically, cooperative members have had a somewhat negative or at best an ambiguous attitude toward their retained patronage equity. Part of this perception may be due to the historical choice to issue qualified retained patronage, which is taxable to the members in the distribution year. Nonqualified distributions could improve the member perception of cooperative equity because it matches the timing of the tax obligation with the timing of the cash flow. The cooperative receives a tax deduction in the year in which the equity is redeemed, which reduces the redemption budget. This research suggests that nonqualified distributions, in addition to improving the perception of cooperative equity, could also maximize the members’ returns.

The research indicates cooperatives and their members would be better off if the cooperative distributed the patronage as stock in a form that is not taxable to the member until it is redeemed for cash. Cooperatives have a tax credit available to them making the change much more practical at this point in time. It is the same tax credit that has facilitated retaining funds as unallocated equity, so the two issues are inter-related.

**Impact**

This research provides useful conclusions for cooperative managers and boards of directors when making decisions about methods of patronage distributions.

After protecting the cooperative’s cash flow needs, boards are interested in distributing profits to patrons in the most beneficial form. Research on profit distribution alternatives could improve their decisions.

**Publications/Presentations**

A journal article, “Profit Distribution Alternatives for Agricultural Cooperatives,” is currently being finalized for publication in the Journal of Cooperatives.

“The Impact of Unallocated Equity on Agricultural Cooperatives”, was an Invited Paper prepared for Farm Credit Council Coordinating Committee, September, 2014.

A presentation on “Exploring Non-Qualified and Unallocated Equity” was given at the 17th annual Farmer Cooperatives Conference in Minneapolis, MN November 2014.

A presentation on “Managing Profit Distribution” was given at the Oklahoma Ag Group Council CEO and Board Retreat in Branson, MO, July 2014.

**Source of Funding**

This research was funded through the Bill Fitzwater Cooperative Endowed Chair.
Residents of both rural and urban communities are increasingly looking for opportunities to experience the outdoors and agricultural heritage. This demand presents farms, ranches, and rural communities with new economic opportunities. Agritourism can be an alternative source of revenue for existing farms and ranches, and a promising enterprise for non-farm, rural residents. Agritourism also provides an important public service, by educating people about agriculture, food production, and natural resources.

Overall, agritourism is an important part of the state’s economy. With about 400 agritourism operations in the state and several thousand visitors per year to the average business, there are more than two million agritourism visits per year. This translates into millions of dollars in business revenue, and millions more in non-local dollars through spending at gas stations, restaurants, and gift shops by agritourism visitors.

Researchers
The OSU Department of Agricultural Economics partnered with the Oklahoma Department of Agriculture, Food, and Forestry to launch the Oklahoma Agritourism Producers Survey. The OSU Department of Agricultural Economics researchers on this project were Richard T. Melstrom, assistant professor; and
Cassandra Murphy, graduate student. The ODAFF specialist working with the OSU team was Jamie Cummings, agritourism program administrator.

**Issues**

Agritourism encompasses a variety of activities and farm/ranch experiences. Common agritourism activities include, but are not limited to, farm and ranch stays, farm tours, birding tours, farmers markets, fee-hunting, horseback riding, corn mazes, specialty crops and products, you-pick operations, and wineries.

A question the researchers wanted to focus on was, What is driving the income of the businesses that host these activities? Most agritourism businesses make less than $10,000 from their visitor activities.

**Objective**

The purpose of the agritourism producers survey was to gather data about agritourism businesses in Oklahoma. The researchers used the data to learn about the business factors influencing agritourism revenues.

**Project**

A questionnaire was mailed in January 2015 to 291 businesses. The business list included all agritourism operations registered with ODAFF, except those identified as farmers markets. By March, 183 businesses had responded to the survey, resulting in a 63 percent response rate.

**Results**

The data showed that revenues from agritourism increase a few percent each year the business has been open and it increases with the population size of the county in which the business is located.

There is a strong relationship between revenues and distance to a major metro area. Specifically, for every mile closer a business is to either Oklahoma City or Tulsa, expected annual revenue goes up by several hundred dollars, holding other business characteristics constant. This means by locating your business ten miles closer to the city it could mean attracting hundreds more visitors and thousands of additional dollars in revenue.

**Impact**

Agritourism is becoming more common in Oklahoma. By tapping into the market for tourism and catering to visitors, agritourism businesses can help to diversify rural economies. However, a business needs to turn a profit.

Although the research shows entrepreneur’s revenues tend to increase overtime, this is no guarantee every business can be profitable. In fact, many businesses report in the survey that they are currently unprofitable. Among those who are profitable, the data shows they are in the black within five years.

Furthermore, although a rural setting is an important (if not necessary) feature of agritourism activities, it is clear that agritourism businesses located near Oklahoma City and Tulsa are more successful than other businesses. Locating within easy driving distance from a large number of potential visitors is important to the success of many agritourism ventures.

**Publications/Presentations**


Agricultural producers invest more than $750 million annually into self-financed "checkoff" programs designed to increase demand, prices, and profits to farmers for various commodities. A commodity checkoff program collects funds through a checkoff mechanism, sometimes called checkoff dollars, from producers of a particular agricultural commodity and uses these funds to promote and do research on that particular commodity. The organizations must promote their commodity in a generic way, without reference to a particular producer. Checkoff programs attempt to improve the market position of the commodity by expanding markets, increasing demand, and developing new uses and markets.

These checkoff programs have a long history dating back to the late 1800s with the creation of state-level voluntary programs to promote farm commodities. Since the mid-1980s, many state-level checkoff programs have been expanded to federally-legislated mandatory programs. In these mandated programs, producers pay a specified amount of money that is assessed either per unit or on value. For example, the Dairy Management, Inc. checkoff mandates all dairy farmers to pay fifteen cents per hundredweight of all milk marketed. The National Pork Board checkoff program specifies a mandatory assessment rate of 0.40 percent of sales value.

Researchers
The researchers on this project are Chanjin Chung, OSU Department of Agricultural Economics Professor and Breedlove Professor, and professors Young Sook Eom and Byung Woo Yang of Chon-buk National University in Korea.

Issues
The specified checkoff assessment rates raise several important questions, particularly related to how they are determined and whether they can generate profit-maximizing advertising expenditures. Some producer groups are concerned the current assessment is too small to produce significant advertising effects for their industry and it is probably not profit maximizing.

Although the advertising programs such as “Milk Does a Body Good,” the “got milk?” campaign; “Pork. The Other White Meat;” and “Beef: It’s What’s For Dinner” have long been regarded as successful, the mandated checkoff assessment rates have been questioned as to whether they are profit maximizing for producer groups, particularly in an environment where retailers and processor are increasingly imperfectly competitive and concentrated.

Several studies have examined the optimal conditions of advertising programs in both economics and agricultural economics literature. However, most analyses to date of generic advertising have assumed competitive markets with a few exceptions. No other studies have accounted for the retailer’s potential market power separately from the processor’s market power in deriving the optimal conditions of advertising intensity. Recent studies on the retailer-processor relationship have found that retailers exercise a larger influence in food distribution than do processors. Another important issue in determining the optimal advertising intensity is considering the import sector. Although importers pay the same amount of assessment as domestic producers and sit on the boards for many checkoff programs, most previous studies have not accounted for the potential effect of importer behavior or imperfect competition.

Objective
The objective of this study is to derive an optimal advertising intensity formula for generic advertising that considers both bilateral imperfect competition between processors and retailers and the supply of imported goods. It also examines the impact of these unique derivative features on optimal advertising intensity, advertising expenditures, and checkoff assessment rates.

Project
The first step was to develop an optimal advertising intensity formula to examine the impact of bilateral market power and import supply on the optimal advertising intensity. Then comparative analyses were conducted on the formula, and a market equilibrium model that consists of retail demand, processor and import supply, and farm supply equations was developed. Finally, the model was applied to the U.S.
beef industry to obtain optimal advertising intensity, advertising expenditure, and assessment rate, and the results were compared to previous approaches that did not consider bilateral imperfect competition and the import sector.

Unlike many previous studies, the retailing and processing sectors were modeled separately and the processors’ interaction effect with retailers was considered in deriving the optimal advertising rule. To be consistent with generic advertising programs in the US and many other countries, this study allows advertising decisions to be tied to industry sales and determined internally. For most checkoff programs, boards make decisions on the level of advertising expenditures based on estimated funds to be collected, but effective advertising programs induce changes in industry sales that affect the collected checkoff funds and, in turn, the money available for advertising.

Results
Comparing simulated estimates from alternative procedures shows that giving full consideration to retailer-processor bilateral market power lowers the optimal values of assessment rates, advertising expenditures, and advertising intensity for checkoff boards. This study also finds that considering importers increases the optimal values. Therefore, simulation results indicate that ignoring the import sector in optimal generic advertising modeling underestimates the optimal values of assessment rates, advertising expenditures, and advertising intensity, while ignoring the bilateral market power between processors and retailers overestimates these values.

Impact
The results of this study provide checkoff boards in the US with information that could improve the effectiveness of their assessment mandates and in turn could maximize profits for their producer groups.

Publications

Source of Funding
This research was supported by the Oklahoma State University Agricultural Experiment Station.

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Samples of “Beef: It’s What’s For Dinner” and “got milk?” campaign advertisements.
Consumers do not want insects in their food, so insect control is a key concern for handlers of grain and grain-based products during storage, processing, and packing. A very important method of insect control in processing facilities is a structural fumigation. However, structural fumigations are expensive, and overuse of them can lead to more rapid evolution of insect resistance to the fumigants. While consumers do not like insects in food, they are also increasingly interested in reduced use of pesticides. Food producers and processors face a challenge to effectively control insects with judicious use of chemicals.

**Issues**

A manager of a food processing facility faces the dilemma of postponing a treatment—such as fumigation—in order to reduce pesticide use and save money risks allowing insect population to grow too large, causing damage to the product as well as increasing the cost of trying to control the insects later. Estimating these costs is difficult because insect populations and potential damage are difficult to predict, and although the probabilities of catastrophic costs from insects (e.g. food recalls) are low, the costs are high.

Conversely, fumigating too early may allow the remaining insect population to rebound sufficiently making another expensive fumigation necessary.

Managers need economic guidelines to make insect control decisions that fully consider treatment costs, effectiveness, and costs of failing to control insects. The best time to fumigate depends heavily on how fast the insect population is growing, which in turn depends heavily on temperature and humidity, as well as cleanliness in the facility.

**Researchers**

OSU Department of Agricultural Economics researchers include Brian Adam, professor; Suling Duan, Ph.D. graduate associate; and Li Niu, M.S. graduate assistant.

**Objective**

The primary objective of this research is to determine the optimal timing of fumigation with sulfuryl fluoride in a flour mill.

**Methods**

The method of this research was to estimate the value of a real option. An option on a futures contract has “intrinsic value” (the profit that would be gained from exercising it now) and time value (because there is some probability that before the option expires its intrinsic value will increase). A real option is similar, meaning there is time value in waiting to fumigate, because waiting to fumigate postpones the costs of fumigating and waiting also postpones the costs of
fumigating later when the insect population has begun to grow again. Not considering this time value might lead to the manager fumigating too often.

One way to estimate time value is to estimate the value of a real option using methods similar to those used to estimate the value of financial options. Then, the time value is the value of the option minus the intrinsic value of the option. When there is no more time value (value in waiting to fumigate), the manager should fumigate, and not wait any longer. Estimating the option also gives the manager a dollar value for fumigating now, versus waiting to fumigate, versus not fumigating at all, and also provides a dollar value of the risk the manager faces with each choice.

A key part of estimating the option value, and the risk of waiting to fumigate, is to use a model developed by entomologists to predict insect growth in a processing facility under varying temperature and humidity.

**Results**

Testing the model showed for one year of weather data, the optimal time to wait to fumigate was 238 days after the previous fumigation, when the option value reached zero. This was a longer waiting time than if the manager had not considered the time value of waiting.

**Impact**

If the results of this model can be validated over more years of weather data, the model can help managers evaluate the dollar value consequences of their choices. Fully considering the time value of waiting to fumigate might reduce the frequency of fumigations. This would reduce both pesticide use and insect control costs.

Earlier results from this project were presented in 2015 extension meetings with industry practitioners. These and other updated results will be presented as they become available and in extension meetings tentatively scheduled for 2017.

**Publications/Presentations**


**Funding**


Local Food Business Models

Local food systems form the nexus between rising concern over the consumption of fresh fruit and vegetables and a renewed interest in place-based development. Many communities view local food systems as an opportunity to build their local economy and enhance the quality of life in their communities. Despite the growth and popularity of this segment of agriculture, several policy questions remain about the size and scope of the impact these systems have locally.

Researchers

Representatives from both Oklahoma State University and Colorado State University are working on this research. The OSU Department of Agricultural Economics researchers are Dave Shideler, associate professor and extension economist, and Merritt Taylor, professor.

Issues

In response to growing public interest in regionally focused food systems, there is an increase of business models. It is timely to consider the best practices and new business models for growing sales into these markets, and to benchmark business measures to guide enterprises.

As some of the growth in regional food systems is anchored in the idea of increasing the share of food dollars retained by farmers, if not their allied business associates and communities, it is important to better understand how different models address those goals.

Objective

The primary objective is to build on previous research data, findings, and benchmarks to create typologies of business models within the local/regional food system.

Project

We create representative categories of businesses engaged in local food systems and estimate financial benchmarks for each category. These benchmarks will aid small- and mid-sized farmers and ranchers in evaluating their business’ performance and give guidance to researchers studying how local food systems contribute to local economies.

Results

While the project is still underway, the primary results will consist of the identified business models used in local food systems and the corresponding financial benchmarks; these tools will facilitate the discussion of managerial choices, trade off, and policy programs focused on strengthening this sector.

Impact

A generalized typology of marketing choices and the associated advantages and disadvantages will assist small- and medium-sized farmers respond to their own desire to grow or respond to future innovations in their local economy. A secondary impact is to inform policy makers and lenders about the information needs of small- and medium-sized farmers to make prudent decisions.

Future Research

The following are future plans for this research:

- Map the regional food system landscape using secondary data, case studies, and directories developed by key players.
- Develop a meta-analysis that allows one to consider how key operational, market, and financial benchmarks may vary across these typologies as defined by key characteristic.
- Reconsider typology, once more is known about how the business models vary and influence their surrounding economies.
- Estimate enterprise expenditure patterns by category and locality for use in economic impact multiplier analysis to facilitate policy and public investment discussions.

Publications/Presentations


Water Conservation and Soil Adoption in a Highly Erosive Watershed: The Case of Ft. Cobb and Southwest Oklahoma

Fort Cobb Reservoir is a reservoir located in Caddo County in southwestern Oklahoma that was constructed in 1958. It impounds the waters of Cobb (Pond) Creek, Willow Creek, and Lake Creek. The lake covers approximately 4,000 acres of water and 45 miles of shoreline.

The reservoir is important both as a source of agricultural and municipal water and a location for recreational activity. Years of drought have reduced water levels by several feet.

Researchers
OSU Department of Agricultural Economics associate professors Tracy A. Boyer and Art Stoecker, professor Larry Sanders, assistant professor Max Melstrom, research assistant Benjamin Tong, and research associate Solmaz Rasouli Zadeh Gharibdousti are members of a team of researchers who are studying the best strategies for safeguarding water supplies in Oklahoma and the Midwest.

This project also includes researchers from the OSU Department of Biosystems and Agricultural Engineering, and the USDA-Agricultural Research Center Grazing Lands Research Station in El Reno.

Issues
Water supplies can be used for drinking water, recreation, and irrigation. Excess sediment can get into reservoirs and cause them to decline or fill up, shortening their life spans or projected capacity.

While studies now show as much as 80 percent of the sediment load entering streams in some watersheds is coming from stream banks, attempts to control sediment loads have often focused almost exclusively on implementing upland practices.

Researchers believe that expanding this approach and considering the most effective combination of upland, in-stream and riparian (streams, streambanks, and wetlands adjacent to streams) erosion strategies to reduce sediment loads can more effectively control the amount of sediment inflow.

Research has been done east of the Mississippi and in the western part of the US, but not much has been done in the Midwest. For this project, the research is focusing on the Fort Cobb Reservoir in southwest Oklahoma.

Objective
The objective of the overall research is to study the best or most cost effective ways to protect water supplies in Oklahoma and the Midwest. Researchers hope to provide a framework and tools for other watersheds in these areas to use to prevent sediment from getting into the streams and reservoirs.

Agricultural Economics Team Members
The agricultural economics project members’ objectives are to examine the costs associated with different strategies on surface lands and in stream banks and to survey landowners, watershed managers, government officials, and other stakeholders on the potential determining factors for adopting the practices.

Project
As part of the total project, the research team is aerially surveying the watershed’s stream banks, working with landowners to evaluate the strength of stream banks within the watershed, and modeling the impact of erosion on surface areas and in-stream erosion to reduce sediment loads entering the Fort Cobb Reservoir.

Agricultural Economics Team Members
The agricultural economics team members are conducting surveys with landowners and conservation managers to determine how these individuals manage conservation of soil and water that impacts watersheds. They also want to determine what type of information is required to improve the understanding of landowners and operators who may choose to adopt, or be encouraged to adopt, in-stream, streambank, or riparian conservation/management practices.

They have also conducted a survey of recreational users of the reservoir regarding activities and preferences related to water levels for recreational use.
Results

Conservation/Management Practices Survey
A survey of landowners and other stakeholders conducted in the fall of 2014 shows the following results:

- Experienced and more highly educated farmers are more likely to enroll in soil and water conservation programs.
- The greater the proportion of household income the farmers derive from farming, the lower the participation level.
- Younger farmers are less diversified and less experienced with conservation.
- Farmers from larger farms are more likely to enroll in conservation programs.
- In terms of the number of practices adopted over time, farming experience, gender, education, and a positive attitude about conservation increase the number of practices.
- Operators on rented land with conservation stipulations in the contract are more likely to have adopted more practices than those without any provisions in their contracts.

Recreational Use Survey
Questions regarding monthly visitation were used to measure the impact of water levels, rainfall, wind speed, and air temperature fluctuations on recreation demand. No evidence was found that rainfall or wind speed affect monthly visitation, but strong evidence shows that air temperature affects demand, even after controlling for seasonality in visits. The results indicate a visit is worth $60 on average and rising temperatures increase visitation, except in the hottest months.

The travel cost method is employed to estimate the non-consumptive use value of a moderately-sized reservoir in the south central US.

Impact
Effective conservation practices have a direct impact on water clarity and other characteristics of water systems and the users of those systems. Overall, the results of this project can provide strategies to reduce sediment loads that can be applied to other watersheds in Oklahoma and the Midwest, improving water quality and usage.

The results from the agricultural economics team members surveys can provide landowners, watershed managers, government officials, and other stakeholders information to improve the efficiency of resources in watersheds. They also offer several insights into the recreational use of reservoirs by combining information on valuation, visitation, and time-varying site quality.

Publications/Presentations

Presentations Made:

Extension:

Sources of Funding
Money for this project is from a U.S. Department of Agriculture (USDA)/National Institute of Food and Agriculture (NIFA) three-year grant of $638,000 awarded in 2014 through the USDA's National Integrated Water Quality Program (NIWQP).
One challenge of working in a STEM field is finding financial support for research. A major source of this funding is the National Science Foundation (NSF), which offers literally hundreds of opportunities for students at all levels of their academic careers. As the only federal agency that supports all fields of science and engineering, the NSF offers awards in a truly all-inclusive range of fields.

Established by Congress in 1950 as an independent federal agency to promote the progress of science, the NSF now manages a $7.3 billion budget and issues about 11,000 new awards each year with an average duration of three years per award. The foundation supports individuals and research centers alike to advance the frontiers of scientific knowledge.

The NSF identifies and funds work at the forefront of science and engineering through a rigorous and objective peer-review process. It extends grants not only to students and researchers but also to small business owners and veterans—if you are interested in a STEM field, you just may be eligible for an award.

But while one path to funding is through pre-budgeted awards, the foundation also assesses opportunities for students, engineers, learners, and students of all backgrounds to pursue their passions without needing to call them for a specific grant. Any time people are welcome to send in unsolicited proposals for research and education projects, in any existing or emerging field.

Although the NSF itself does not run any research centers, it is the source of 74 percent of federally funded research at colleges and universities and offers many of its own positions as well. Oklahoma State University student Cole Bowers started interning at the NSF in the summer of 2014 through the Washington Internship for Native Students (WINS) program at American University, where he took classes briefly and has returned this spring for a different internship.

Bowers, who is getting his degree in agricultural economics and international marketing, is currently using database and social media to gather information about the career paths of those awarded postdoctoral grants and the general success and progress of their studies—essentially “getting coffee and making copies” experience away from advocacy,

“One of the most important things I’ve learned is that I can help people with my research. It’s rewarding to be able to help others with the work I’ve done and to see the impact it has on others.”

His work at the foundation has given him a chance to see firsthand what NSF funding can mean to Native American students. This past semester, Bowers traveled to Flagstaff, Ariz., to conduct a site visit at the Research Experiences for Undergraduates (REU) programs. His time in Flagstaff reinforced the effort for Bowers: “If you have much value, you can offer to an organization like the NSF, and they will give you a chance to succeed in your respective research fields.” — Agnes Ordick

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Source: Journal of Agricultural Science, Vol. 6, No. 12
Date: 2014

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Authors: Dave Shideler, Thilmany Dawn, Merritt Taylor, Angelo Blake
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Authors: Jayson Lusk
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Date: 2014
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Keywords: costs, Just-in-time, logistics, forage sorghum, integer programming, switchgrass

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Subject: Environment, Other, Quantitative Methods
Keywords: discount rate, experiment, climate change

DISTINGUISHING BELIEFS FROM PREFERENCES IN FOOD CHOICE
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DO BROADBAND ADOPTION RATES IMPACT A COMMUNITYS’ HEALTH?
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Source: Behaviour and Information Technology, 33(7), pp. 767-779
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Authors: Brian Whitacre, Roberto Gallardo, Sharon Strover
Date: 2014
Subject: Community & Rural Development
Keywords: broadband, rural, first-difference, spatial models

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Authors: Eric DeVuyst, J Edwards, B. Hunger, Lance Weaver
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Author: Arjun Basnet; Advisor: Dr. Kenkel
Graduation Date: Spring 2014; Degree: Ph.D.

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