

## **How can Farm Bureau play a role to ensure the viability of quality agricultural education programs within our schools?**

AMERICA'S FARMERS GROW RURAL EDUCATION PROGRAM  
Monsanto

<http://www.americasfarmers.com/growruraleducation/>

EMPLOYMENT OPPORTUNITIES FOR COLLEGE GRADUATES  
IN FOOD, RENEWABLE ENERGY, AND THE ENVIRONMENT

<http://www.ag.purdue.edu/USDA/employment/Pages/default.aspx>

NO LIMITS TO THE VALUE OF AN AGRICULTURE DEGREE

<http://www.ag.purdue.edu/Connections/NOW/Pages/AgValue.aspx>

The Foundation Today

<http://www.agfoundation.org/index.php?fuseaction=agliteracy.whatsnew>

The Foundation is continuously working on agricultural literacy projects to help tell the story of agriculture. Visit <http://www.agfoundation.org/index.php?action=agliteracy.whatsnew> to learn more. To order any of these items or to see all of the educational items the Foundation offers click on “Resource Orders” on the menu.

Here are a few of our newest projects:

### **Farm Animal Educator’s Guide**

Educators Guide has six fun and thought-provoking activities to address key developmental indicators of reading, writing, numbers, counting and sequencing.

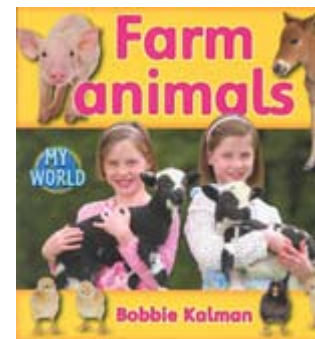
Reproducible activity sheets are included, as well as a review song to help young people understand the concepts and reinforce the theme and message of the lessons and the book.



### **Farm Animals Book**

Young readers will enjoy this fifteen-page book with colorful child-friendly photos. A “Words to Know” page prominently displays illustrated words. The last page, titled “Notes for Adults,” lists objectives, questions to ask before and after reading, as well as curriculum extensions that show how farmers care for animals every day.

This book and Educator’s Guide help children make real life connections to farm animals and how farmers care for animals every day.



### **How Did That Get in My Lunchbox? The Story of Food**

The newest addition to the Foundation's Book of the Year collection invites readers to explore how their lunch came to be from farm to fridge the book is an excellent way to introduce k-2 where their food comes from.

## How Did That Get in My Lunchbox? Educator Guide

Piloted and aligned to the National Learning Standards for Early Elementary Classrooms the *How Did That Get in My Lunchbox?* educator guide includes topics such as sequencing, sentences, nutrition, and math.

## My Food Connection Poster

Designed for the classroom or school cafeteria this poster explores the new ChooseMyPlate.org food guide and allows students to meet some of the farmers who fill their plate. ACCOMPANIES *The How Did That Get In My Lunchbox?* - BOOK and the *How Did that Get In My Lunchbox?* - EDUCATORS GUIDE.

## Careers Ag Mag

This new agriculturally themed magazine for kids is a great way to introduce students to careers in agriculture. Featured careers include: Produce Buyer, Large Animal Vet, Logger, Diesel Mechanic, Food Chemist, Environmental Engineer and Plant Scientist.

Students will enjoy the hands-on activity explained in the ag mag as well as the real life career profiles for Ag Broadcaster, Sous Chef, Ag Lawyer, Zookeeper and Conservation Police Officer on the back!

Great for starting conversations about careers in agriculture!

## Food and Farm Facts 4-6 Educator Guide



The 4-6 Educator Guide uses Food and Farm Facts and the national learning standards to provide lessons and activities to reinforce skills in math, science, social science, language arts, health and nutrition. This newly updated version of Food and Farm Facts 4-6 Educator Guide helps to incorporate agricultural themes into the classroom.

### **Food and Farm Facts 7-12 Educator Guide**

Developed for the middle and high school classroom, this new educator's guide uses Food and Farm Facts and national learning standards to provide lessons and activities to reinforce skills in math, science, social science, language arts, health and nutrition. Easily reproducible activity sheets and full lesson plans help the educator and learner understand the concepts that reinforce the messages found in Food and Farm Facts.

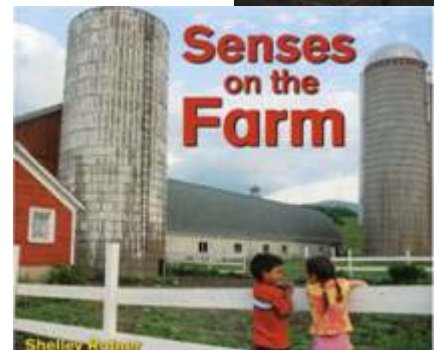
### **Food and Farm Facts Pencils**

Straight out of the 2011 Food and Farm Facts booklet each pencil promotes an interesting fact about agriculture. Ten different facts total, 144 pencils in each box.

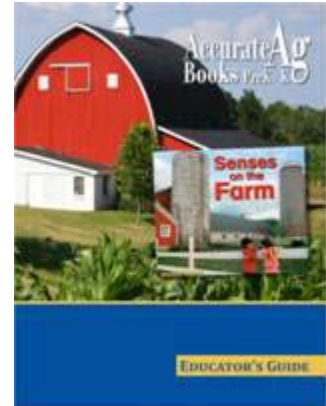
### **New Accurate Ag Book! *Senses on the Farm* by Shelley Rotner**

Developed for the Pre K – K classroom, this book shows life on the farm is explored through the five senses as we see the calf's big ears, touch the soft wool of a lamb, hear a hungry horse chomp, smell the fresh cut hay and taste the farm fresh milk. Beautiful, focused photographs capture the simplicity and charm of life on a farm.

### ***Senses on the Farm* Educator Guide**

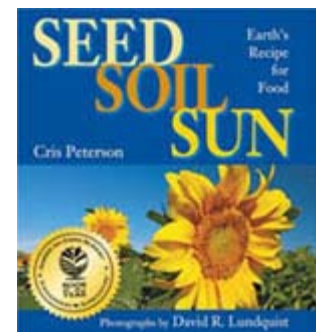


Developed for the Pre K – K classroom, this Educator’s Guide uses the book “Senses on the Farm” and four fun activities to address key developmental indicators and help young people develop skills in recognizing objects using the five senses, reading, writing, numbers, counting and sequencing. Reproducible activity sheets and full lesson plan are included, as well as an active song to help young people understand the concepts and reinforce the theme and message of the lessons and the book.



### ***Seed Soil Sun Earth’s Recipe for Food by Cris Peterson***

In *Seed Soil Sun*, Cris Peterson describes the seemingly miraculous process by which air and water combine with seed, soil, and sun to create nearly all the food we eat. Using the corn plant as an example, she takes the reader through the story of germination and growth of a tiny corn seed into a giant plant reaching high into the air with roots extending over six feet into the ground. The book also discusses the make-up of soil and the amazing creatures that live there from microscopic one-celled bacteria to moles, amoebas, and earthworms.



### ***Seed Soil Sun Educator Guide***

The Educator’s Guide is composed of three different national learning standards based and agriculturally themed activities which complement the content and theme of the book *SEED SOIL SUN*. The activities, book and classroom poster can be used to teach reading, math, science, social science, health and nutrition to the 1st-3rd grade classroom and beyond.



### ***The Plant Parts We Eat Poster***

*The Plant Parts We Eat* Poster is full of color pictures, proper names, descriptions and classifications of vegetables. The poster is meant to accompany the lesson plan and book *Seed Soil Sun*, but is a great resource on its own. Best for a 1st-3rd grade classroom visit or thematic unit related to agriculture and nutrition.

**For more agricultural literacy projects click Resource Orders on the main menu or to Donate to the Foundation so we may continue to produce successful agricultural literacy materials click Donate on the main menu.**



Welcome to *ConnectionsNOW!*, providing the latest news for students, alumni, faculty, staff and friends of Purdue Agriculture.

While we will continue to deliver the award-winning Purdue Agriculture *Connections* in print to our 45,000 subscribers twice a year, *ConnectionsNOW!* will provide the news from the college year-round as it happens.

*ConnectionsNOW!* is a forum for your news as well. If you have an item you would like to share or know someone with a connection to Purdue Agriculture who would be the subject of a good story, share it with us through our online form. [Suggest a story](#).

*ConnectionsNOW!* is our way of staying in touch with you. We hope it becomes your way of staying in touch with us, too.

Check out our most [recent news](#)!

### **No limits to the value of an agriculture degree**



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Given the outstanding enrollment and job placement experience in our respective colleges, it was a surprise when three of the five majors ‘highlighted’ in a recent Yahoo Education article by Terrence Loose entitled “College Majors that are Useless” were programs in the agricultural sciences: agriculture, animal sciences, and horticulture.

Before drawing his conclusions, we wish that Mr. Loose had done more homework beyond what appears to be a cursory review of Bureau of Labor Statistics numbers and the repurposing of a similar headline from The Daily Beast a year ago.



Other sources suggest that not only is the need for graduates in these programs growing, but there is a shortage of graduates in the agricultural, food, and natural resource sciences:

- **Broad definition of agriculture.** The Yahoo Education article equated ‘agriculture’ with ‘farm management’. Farm management is an important field of study, but defining agriculture only as farm management is much too narrow. Completely ignored are other important areas under the umbrella of ‘agriculture’ including food science, plant science, and soil science, where the [Bureau of Labor Statistics report](#) predicts job growth should be faster than the average for all occupations, and where job opportunities are expected to be good over the next decade, particularly in food science and technology and in agronomy. And, of course, the ‘agriculture’ umbrella also covers agricultural economics, agricultural engineering, animal sciences, natural resource and environmental sciences, and agricultural education, to name a few.
- **Very low unemployment rates.** Recent (Jan. 5, 2012) online posts (NY Times, [Want a Job? Go to College, and Don't Major in Architecture](#), and NPR’s StateImpact Ohio [Best College Majors if You Want to Find a Job](#)) cited a just released report by the Georgetown University Center on Education and the Workforce which found agriculture and natural resources to be among the fields with the lowest unemployment rates - lower than business, engineering, law, and several others ([Georgetown University's Hard Times](#)).
- **Shortage of college graduates to fill need.** The U.S. Department of Agriculture in the [“Employment Opportunities for College Graduates in Food, Renewable Energy, and the Environment, 2010-2015”](#) report, projects that 53,500 qualified graduates will be available for about 54,400 jobs annually the agricultural and food systems, renewable energy and the environment. About 55 percent of those graduates (29,300) are expected to earn degrees from colleges of agriculture and life sciences, forestry and natural resources, and veterinary medicine. The other 45 percent, an estimated 24,200 graduates, will come from allied disciplines including biological sciences, engineering, health sciences, business, and communication.
- **No stronger sector for recruiting.** Dr. Phil Gardner, Director of the Collegiate Employment Research Institute at Michigan State University, recently wrote, “No sector appears stronger than agriculture/food processing with an increase in hires of approximately 14 percent” in the annual Recruiting Trends report ([College Employment Research Institute - Executive Summary 2011-2012](#)).
- **Vital economic growth engine.** A recent study conducted by the [Battelle Institute](#), an independent research organization, found that agriculture and agbiosciences are generating vital economic growth and job creation, particularly in the North Central United States, which includes all four of our respective states. This Midwest area, once dubbed the “Rust Belt,” is becoming the breeding ground for new “green” agriculture-related jobs as the agriculture-driven industry is poised to expand into new markets such as health, specialty crops, biofuels and bio-based products.
- **New areas of opportunity.** The article completely misses an important trend of interest

in small scale, local food production and those who want to become part of agriculture by launching these types of businesses. The Bureau of Labor Statistics report from which Mr. Loose took some of his numbers even points out that "...an increasing number of small-scale farmers have developed successful market niches that involve personalized, direct contact with their customers. Many are finding opportunities in horticulture and organic food production, which are among the fastest growing segments of agriculture."

The success of our graduates is also a testament to the usefulness of agricultural majors. Students majoring in 'agriculture' study farm management, horticulture, and animal sciences—as well as agricultural and food business, food science, biological engineering, plant breeding and genetics, wildlife biology and forestry, biochemistry, microbiology, entomology, and other exciting, science-based areas. Our graduates take jobs in a wide variety of industries, pursue research careers, and work in public service in the US and internationally.

Across all four of our agricultural colleges, total enrollment the highest in 30+ years, applications are going up and, most importantly, at the end of their undergraduate careers, our students are facing excellent job or graduate program opportunities. Many placement rates are higher than 90%, with 16-26% of that total choosing to pursue advanced degrees and professional education.

Beyond the statistics about jobs, let's think about some basic human needs and consider what 'degrees' will prepare a young man or woman to help provide for those needs. Adequate nutrition is a basic need of all humans. Our planet recently reached the 7 billion population mark and the United Nations estimates we will have 2.3 billion more people to feed by the year 2050. We must address how to feed all these people with little expansion of land; in a way that conserves our water resources; and in a fashion that society judges acceptable and even more respectful of our environment. For answers, take a closer look at our agricultural majors.

In addition, those in agriculture will make important contributions to our country's energy requirements and help provide feedstocks for other industrial materials. To meet these challenges, a growing number of passionate, smart, and well-prepared people have a lot of work to do. And we see and talk to these people every day in our campus classrooms, labs and fields.

That's why we're very excited by the prospects for our graduates. Agriculture has been one of the bright spots in the U.S. economy during the current recession and incredible opportunities exist for new economic development in our states and our country. Our graduates are currently writing their own story, and the headline reads: "College Majors that are Invaluable."

If you would like to read the original article, you may [click here](#).

## America's Farmers Grow Rural Education

Nothing is more important than the next generation. That's why we introduced America's Farmers Grow Rural Education to help farmers positively impact their communities and support local school districts. Sponsored by the Monsanto Fund, this program gives farmers the opportunity to nominate their public school district to compete for a grant of up to \$25,000.

In all, the program will allow local school districts in 1,245 counties across 39 states to add over \$2.3 million to their math and science programs.

To nominate your local school district, fill out the [online form](#) by April 15, 2012.

For more details, check out our helpful [Q&A](#) section.

And to learn more about the eligible counties in each CRD, click your state below on the interactive map.

The winners of the America's Farmers Grow Rural Education grant will be selected based, in part, on community support. The more farmers to nominate your school district the more support it shows. Use the tools below to spread the word and improve the chances of your school district winning a grant of up to a \$25,000.

### Farmers

- [Flyer](#)
- [Questions and Answers](#)
- [Nomination Form](#)

### Schools

- [Questions and Answers](#)
- [Letter to Parents](#)
- [Letter to PTA](#)
- [General Newsletter](#)
- [School Newsletter](#)
- [PA Announcement](#)

### What is the America's Farmers Grow Rural Education<sup>SM</sup> Program?

America's Farmers Grow Rural Education is sponsored by the Monsanto Fund to help farmers positively impact their communities by supporting local school districts. Specifically, the program gives farmers the opportunity to nominate a public school district in their community to compete for a merit-based grant of either \$10,000 or \$25,000. The program is available in 1,245 counties in 39 states.

### Why is the Monsanto Fund sponsoring this program?

We believe in rural America and are committed to helping farmers strengthen their communities. We also know the importance of education, and that it's the cornerstone of any successful community. But most importantly, farmers have told us nothing is more vital than the next

generation. That's why we introduced America's Farmers Grow Rural Education. This program gives us the opportunity to help improve education in rural America, thereby helping to grow the next generation.

### **Is this a new program?**

Yes, America's Farmers Grow Rural Education is a new program that will launch in 1,245 counties in 39 states, starting in January 2012. It's preceded by a successful pilot program in Illinois and Minnesota, where we gave more than \$266,000 to local schools in 16 USDA Crop Reporting Districts (CRD). Winning school districts from the pilot are eligible to apply for another grant.

### **How does a farmer nominate a public school district?**

The nomination process is simple. Eligible farmers can fill out a short nomination form at [GrowRuralEducation.com](http://GrowRuralEducation.com) or by calling 1-877-267-3332. A printed copy of the entry form and rules are available on this website or by calling the number. Completed entries can be mailed to America's Farmers Grow Rural Education, 914 Spruce Street, St. Louis, MO 63102. The nomination period runs Jan. 6, 2012, through April 15, 2012.

### **Who can nominate a school district?**

Farmers who live or farm in an eligible county can nominate a school district. Visit [GrowRuralEducation.com](http://GrowRuralEducation.com) for a listing of all 1,245 eligible counties. No purchase is necessary to nominate a school district, and the farmer does not have to be a Monsanto Company customer. Farmers must be 21 years or older and be actively engaged in farming with a minimum of 250 acres of corn, soybeans and/or cotton; and/or 40 acres of open field vegetables, or at least 10 acres of tomatoes, peppers and/or cucumbers grown in protected culture.

### **Which school districts can farmers nominate?**

Eligible farmers can nominate rural public school districts that serve the communities in their USDA-appointed CRD. CRD maps are available at [GrowRuralEducation.com](http://GrowRuralEducation.com). Farmers will be able to select their school district from a list of eligible districts.

### **What happens after a farmer nominates the public school district?**

Once a farmer nominates a school district, the Monsanto Fund notifies that school district administrator that the district has been nominated to compete for a grant through this program and encourages them to submit an application. Farmers also can contact the administrator to inform the school district that it has been nominated and encourage them to submit a grant application. Grants will be awarded based on merit, need and community support. The more farmers to nominate a school district, the more it demonstrates community support and strengthens the district's application. So farmers should encourage other farmers to nominate their school district, too.

### **How does a school apply for a grant?**

Once nominated by a local farmer, school district administrators are eligible to submit an online application for either a grant of \$10,000 or a grant of \$25,000. The application must be received by April 30, 2012. How many grants will be awarded? The Monsanto Fund will award 199 grants to rural school districts. One \$10,000 grant will be awarded in eligible CRDs. An

additional 22 grants of \$25,000 will be awarded to one eligible school district in each state and designated region. Visit [Program Rules](#) for a list of states and regions.

### **How will the school districts' applications be evaluated?**

School districts that submit an application for a \$10,000 grant will compete against other school districts that are located in its CRD. CRDs with fewer than five eligible schools will compete against each other. School districts that submit an application for a \$25,000 grant will compete against schools that are located in its state or designated region. States with fewer than 75 eligible rural school districts will compete in a region. Visit [Program Rules](#) for a complete list of regions. Grants will be awarded based on merit, financial need and community support. The America's Farmers Grow Rural Education Advisory Council, a group of 26 farmers from across the country, will select the 199 winning grant applications.

### **When will the awards be made?**

The Monsanto Fund will announce grant recipients at the end of August 2012. Overall, the program will donate more than \$2.3 million to school districts in 39 states.

### **Why did you choose only these counties?**

Public school districts in every rural county deserve this type of support. These counties were selected based on crop parameters from the January 2011 USDA report. Farmers must reside in eligible counties where a minimum of 30,000 acres of corn and/or soybeans and/or cotton and/or vegetables are planted each year.

### **Why can only farmers apply?**

Monsanto Company's only business is agriculture, so the Monsanto Fund has a special interest in supporting farmers. Farmers told us they want us to not only give back to their local communities, but also support youth in rural communities. The program does just that and helps farmers improve public education in their communities.

### **Can a school district win more than once?**

America's Farmers Grow Rural Education held a successful pilot program in 2011 in Illinois and Minnesota. Eligible farmers are able to sign up again, and previous winning school districts are eligible to apply for another grant as well.

### **Is this program a replacement for America's Farmers Grow Communities?**

No. America's Farmer Grow Rural Education is a separate program from America's Farmers Grow Communities. America's Farmers Grow Rural Education is based on merit and focuses solely on supporting rural school districts. America's Farmers Grow Communities allows eligible farmers to register for a chance to win \$2,500 to donate to their favorite community nonprofit organization. Visit [GrowCommunities.com](http://GrowCommunities.com) for additional information on America's Farmers Grow Communities.

## *Employment Opportunities for College Graduates*

### **in Food, Renewable Energy, and the Environment**

United States, 2010-2015

#### **Overview**

The agricultural, food, and renewable natural resources sectors of the U.S. economy will generate an estimated 54,400 annual openings for individuals with baccalaureate or higher degrees in food, renewable energy, and environmental specialties between 2010 and 2015. Seventy-four percent of the jobs are expected in business and science occupations; 15 percent in agriculture and forestry production; and 11 percent in education, communication, and governmental services.

During 2010–15, five percent more college graduates with expertise in agricultural and food systems, renewable energy, and the environment will be needed when compared to 2005-10. More than enough graduates will likely be available during the next couple of years in some occupations, but a shortfall of new graduates with preparation in priority business and science specialties is forecast in the latter half of the period.

Four major factors shape the market for graduates between 2010 and 2015:

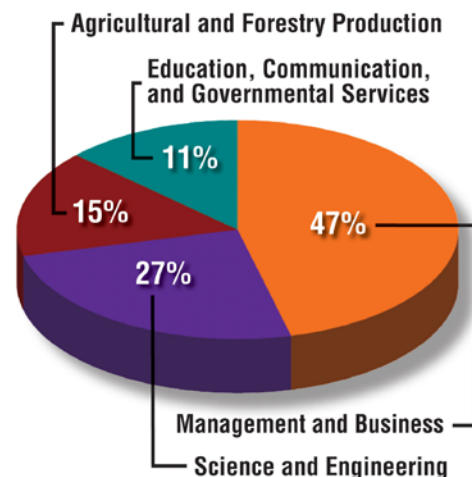
- Macroeconomic conditions and retirements
- Consumer preferences for nutritious and safe foods
- Food, energy, and environment public policy choices
- Global market shifts in population, income, food, and energy

#### **GRADUATES**

Expect approximately 53,500 qualified graduates to be available each year. About 55 percent of the total, 29,300 are expected to earn degrees from colleges of agriculture and life sciences, forestry and natural resources, and veterinary medicine. The other 45 percent, an estimated 24,200 graduates, will come from allied disciplines including biological sciences, engineering, health sciences, business, and communication.

Employers have expressed a preference for graduates from colleges of agriculture and life sciences, forestry and natural resources, and veterinary medicine who tend to have relatively stronger interests and more extensive work experiences for careers in food, renewable energy, and the environment than those from allied fields of study. These graduates will likely continue to be preferred by many employers, but it is important to note that there were nearly 10 percent fewer agriculture and life sciences, forestry and natural resources, and veterinary medicine graduates produced in U.S. colleges and universities in 2008 than in 2002.

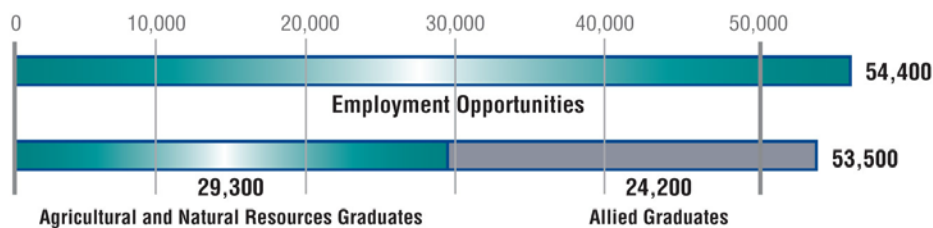
#### **Employment Opportunities**



The Food and Agricultural Education Information System maintains enrollment data by academic specialty that are reported by colleges of agriculture and life sciences, forestry and natural resources, and veterinary medicine. Enrollments during 2004-09 suggest some increases in agribusiness management, agricultural mechanization and engineering, animal science, food science, and natural resources management graduates during 2010-15. In contrast, fewer graduates in the plant sciences, soil sciences, and horticultural specialties are anticipated during the next five years, and there will likely be little change in the annual production of forestry and wildlife science graduates.

Relatively more graduates from the allied fields of biological and health sciences will be required to fill positions that address consumer preferences for a safe and nutritious food supply. Likewise, more earth and atmospheric scientists and environmental engineers will be required to deal with the evolving public policy choices in energy and the environment.

Shortfalls of qualified graduates to work as plant geneticists and plant breeders, climate change analysts, and food safety and security specialists are anticipated during 2010-15.



## GROWTH OCCUPATIONS

The U.S. Department of Labor projects significant growth in selected food, renewable energy, and environment jobs during 2008-18 in the *Monthly Labor Review* published in November 2009.

### Occupation – Percent Increase

Agricultural Inspectors – 12.8

Animal Scientists – 13.2

Biochemists and Biophysicists – 37.4

Computer and Information Systems Managers – 16.9

Credit Analysts – 15.0

Environmental Engineers – 30.6

Environmental Scientists and Specialists, including Health – 27.9

Financial Analysts – 19.8

Food Scientists and Technologists – 16.3

Hydrologists – 18.3

Management Analysts – 23.9

Market Research Analysts – 28.1  
Natural Sciences Managers – 15.5  
Pest Control Workers – 15.3  
Public Relations Specialists – 24.0

Recreation Workers – 14.7  
Sales Managers – 14.9  
Soil and Plant Scientists – 15.5  
Technical Writers – 18.2  
Veterinarians – 33.0



Projected growth in these occupations is in tune with our nation's shift toward creating new businesses and jobs in local and regional food systems, capitalizing on climate change opportunities, developing renewable energy, and restoring and sustaining natural resources.

The ability to maintain a safe food supply that is more affordable and nutritious while also expanding energy production from renewable sources will increasingly depend upon the strategic integration of action teams. Those teams will need strong research and development and efficient business management skills. There will be growing opportunities for specialists who will manage our nation's water resources.

*For a two-page printable summary (PDF format, 424KB), click on the linked image, above left. You may also download a longer, [eight-page printable version](#) of the report (PDF, 12MB). Or, you can download a smaller-sized file, a [Web version of the eight-page report](#) (PDF, 950KB).*

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