

U.S. Pork Center of Excellence

Impact Report

July 1, 2021 – June 30, 2022



Chairman's Message

With the 2021-22 fiscal year now in the memory box, the impact stories developed from U.S. Pork Center of Excellence (USPCE) programs are astonishing—and the progress is not over. Our purpose is developing talent to be reinvested in the industry, and it's coming to life through individuals building rewarding careers through every sector.

In this year's Impact Report, you'll read several program highlights, including:

- **Destination Pork**, which introduces high school students to the pork industry and invites them to explore career opportunities they might not have previously known about;
- **Swine Science Online**, a comprehensive distance learning program that allows university students and industry professionals to complete courses offered by renowned instructors in swine science;
- The **Pork Information Gateway**, whose student editors don't just develop up-to-date resources used by educators, extension, small- to mid-size farms, alternative producers and youth, but also the skills they'll take with them to their post-graduate careers; and
- The **Swine Research and Education Experience**, where students complete industry-focused research topics early in their college careers to expand their knowledge base and strengthen their network in—and connection to—the industry.

USPCE has a solid baseline, and a positive trajectory, of influencing change in talent development for the pork industry. By using industry experts and renowned university faculty, updated and standardized materials related to common production practices are given to future leaders. We have refined and sorted through the materials, and our programs have influenced minds in exciting ways.

Thank you for your continued support. To our funding partners, we appreciate your investment in our programs. Your contributions enable USPCE, as a nonprofit organization, to develop the next generation of swine industry leaders and those who rely on USPCE-produced resources in their work.

We also share a sincere "thank you" to those who participate in committees and working groups, instruct courses, collaborate with us and otherwise support our efforts. USPCE would not be able to fulfill its mission without your support, time and expertise. Our promise is to continue strategizing clever tools to teach future talent, strengthen research opportunities, create and maintain effective resources for producers and develop talent to ensure a robust future.



Dan Grooms

Chair, U.S. Pork Center of Excellence Board of Directors
Dean, Iowa State University College of Veterinary Medicine



About the U.S. Pork Center of Excellence

At a Glance:

For the past 17 years, U.S. Pork Center of Excellence (USPCE) has aided the industry with means to collaborate and address complex problems. The financial support from today's key stakeholders fuels the 501(c)(3) nonprofit to expose future talent and professionals to industry assets. USPCE is honored to coordinate with dedicated individuals who believe in its programs.

Vision:

USPCE facilitates stakeholder collaboration to address complex problems facing the pork industry and society through integrated education and research.

Mission:

The USPCE works with the pork industry, post-secondary educators, government and allied industries to develop education and research programs that are delivered by our partner organizations to pork producers.



Scan here to learn more!



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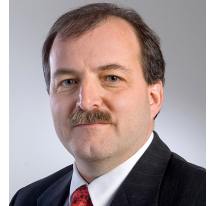
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Thank you for your
5 years of service.



David Priesler
Former CEO of Minnesota Pork
Producers Association and Minnesota
Pork Board

*Thank you for your dedication
and leadership to the
U.S. Pork Center of Excellence
as a board member and officer.*

University Liaison



Dr. Maynard Hogberg,
Department Chair
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Iowa State
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2021–22 Funding Partners

Land Grant Universities



State Associations



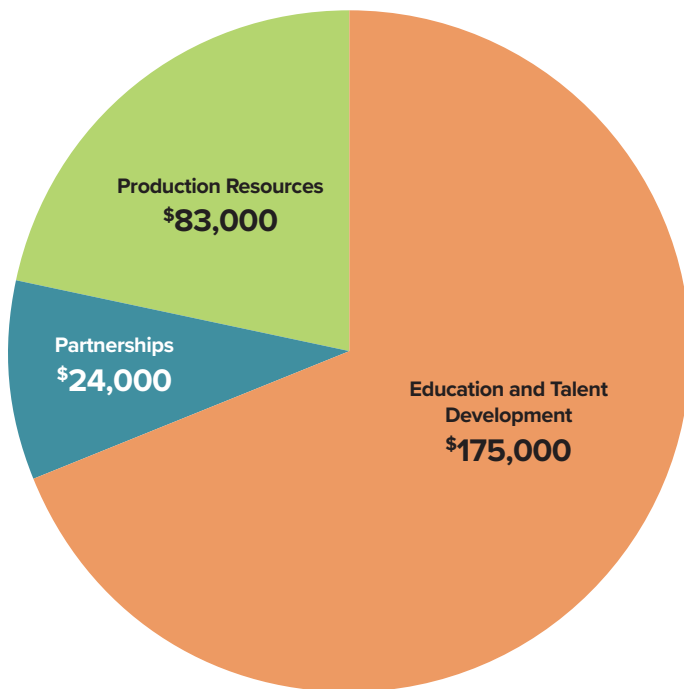
National Pork Organizations





Plan of Work

2022-23 Program Budget



2021-22 Program Expenses

Education and Talent Development.....	\$41,095
Pork Information Gateway.....	\$83,000
Partnerships.....	\$5,689

USPCE Resources

*Dr. Tim Safranski,
Professor and State Swine
Extension Specialist, University
of Missouri*



USPCE has an array of resources for talent development, and I recognize the value of its programs, like Swine Science Online (SSO) and Pork Information Gateway.

Swine Science Online

The original idea for SSO was for undergraduate universities already offering swine production to put together an online class for students at schools where the course was not offered. It is so rewarding that someone had a better idea! The SSO model is a series of one-hour modules diving deeper into specific phases or subject matter areas and is available for students at schools with and those without a swine production course.

There are three primary advantages of this model:

1. Students at colleges without swine production have a mechanism to receive instruction, which was the original intent.
2. Multiple instructors are used and allowed to teach within their specialty even deeper than 'swine production.'
3. Students at colleges with swine production courses can benefit from SSO by selecting modules that delve deeper into an area where the student has particular interest.

Pork Information Gateway

As university budgets dwindle, the responsibility of providing technical materials to producers can be challenging. The Pork Information Gateway has been a tremendous asset in facilitating high caliber guide sheets developed by talented experts. Specialists can focus their efforts and capture brainpower from others.

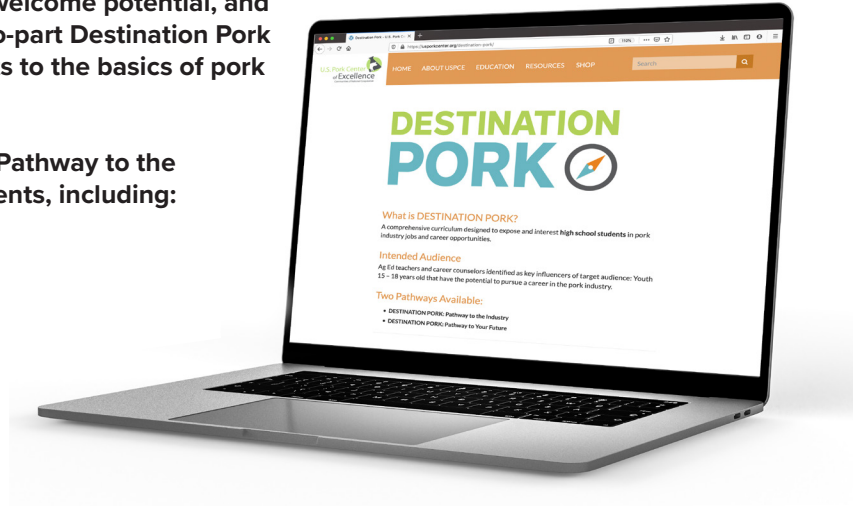


Destination Pork

A teacher opens the door for students to welcome potential, and students embrace education. USPCE's two-part Destination Pork curriculum introduces high school students to the basics of pork production and potential careers.

Led by agriculture teachers, the first unit, **Pathway to the Industry**, uncovers basic industry components, including:

- ▶ Overview of the Pork Industry
- ▶ Pig Anatomy
- ▶ The Pork Production Cycle
- ▶ Pig Caretaking and Wellbeing
- ▶ Pig Behavior
- ▶ Pork Reproduction – Breeding and Genetics
- ▶ Environmental Stewardship of the Pork Industry



The second unit, **Pathway to Your Future**, is a series of online independent study modules introducing students to the wide variety of careers available. Topics include:

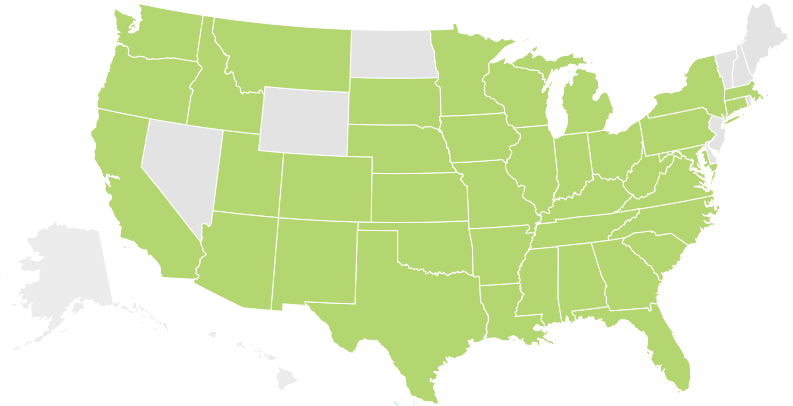
- ▶ Value of the Pork Industry
- ▶ Challenging Misconceptions of the Pork Industry
- ▶ The People Who Work in the Pork Industry
- ▶ Personal Destination Mapping within the Pork Industry

Learn more about the program by visiting usporkcenter.org/destination-pork.



360+
CURRICULUM
DOWNLOADS
ACROSS 40 STATES

■ States Represented



88%

of users are directly involved
in education or extension*

11%

of users are directly involved
in the pork industry*

*Data accumulated to date

Stakeholder Spotlight: Jennifer Tirey

Executive Director
Illinois Pork Producers Association

The resources offered through Destination Pork give educators the opportunity to help their students experience the ins and outs of the pork industry with flexible lesson plans that can be customized to fit specific needs at no cost. As labor shortages continue to be an issue, these resources expose our next generation to the types of jobs available in the industry and serve as an excellent recruitment tool.



Educator Spotlight: Riley Hintzsche

Agricultural Educator and FFA Advisor
Streator Township High School Agriculture Department

Destination Pork provides opportunities for students to maximize their swine experience! Students can gain a deeper understanding of the industry, its endless opportunities and how they can further their career options. I love how students learn about pork production in the Pathway to the Industry Unit but then explore their possibilities in the Pathway to Your Future. Simply put, this curriculum will inspire and excite your students!





EDUCATION

Swine Science Online

Swine Science Online (SSO) is a comprehensive university distance learning program teaching the scientific principles and management skills involved in efficient and sustainable pork production operations.

The goal of SSO is to use academic exercise and application to inspire students' career interest. It's an affordable continuing education undertaking for them, while ultimately benefiting producers by enhancing the knowledge base of the talent pool. Students—both traditional and non-traditional—can participate by enrolling in one of the five universities as a non-degree seeking students and taking the distance-learning courses.



Courses are offered by

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY



NC STATE UNIVERSITY



Courses offered include

- ✓ **Basic Swine Science**
Dr. Laura Greiner,
Iowa State University
- ✓ **Contemporary Issues in the Swine Industry**
Dr. Jodi Sterle,
Iowa State University
- ✓ **Employee Management**
Dr. Cindy Wood,
Virginia Tech
- ✓ **Farrowing Management**
Dr. Tim Safranski,
University of Missouri and
Dr. Kara Stewart,
Purdue University
- ✓ **Feed Mill Management**
Dr. Charles Stark,
Kansas State University
- ✓ **Internship in the Swine Industry**
Dr. Cindy Wood,
Virginia Tech
- ✓ **Marketing and Risk in the Swine Industry**
Dr. Kelly Zering,
North Carolina State University
- ✓ **Nursery and Finishing Management**
Dr. Laura Greiner,
Iowa State University
- ✓ **Pork Product Quality and Safety**
Dr. Dana Hanson,
North Carolina State University
- ✓ **Swine Breeding and Gestation Management**
Dr. Billy Flowers,
North Carolina State University
- ✓ **Swine Environment Management**
Dr. Jay Harmon,
Iowa State University
- ✓ **Swine Health and Biosecurity**
Dr. Locke Karriker and Kristin Skoland,
Iowa State University
- ✓ **Swine Manure and Nutrient Management**
Dr. Dan Andersen,
Iowa State University
- ✓ **Swine Nutrition**
Dr. Bob Thaler,
South Dakota State University



SSO by the Numbers

22 months

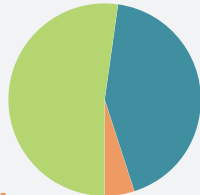
average amount of time for students to complete the certificate

Student Demographics

52.6% Female

44.7% Male

2.6% Not Reporting



Active students' mean age: 26

Credit hours earned in Fiscal 2022*: **220**

Credit Hours Earned per Host Institution

94 at South Dakota State University

47 at Iowa State University

39 at University of Nebraska-Lincoln

34 at University of Missouri

5 at North Carolina State University

1 at Kansas State University

*All classes, with the exception of one, are single-credit classes

Student Spotlight: Jake Sterle

Swine Science Online

Growing up showing pigs, Jake Sterle is no stranger to the swine industry. Taking this passion for the swine industry a step further, Jake participated in a summer production internship with New Fashion Pork, based in Jackson, Minnesota. To expand his commercial agriculture knowledge, Jake enrolled in Swine Science Online (SSO) after his Iowa State University undergraduate professor, Dr. Laura Greiner, explained its benefits.



Jake appreciated the SSO courses diving deeper into the industry than what even he experienced in his college courses.

He found value in working with an array of different professors and students with a variety of experiences.

“Take as many internships and resources like the SSO program as you can while you are in college,” he advises. **“Half of what you learn in college comes from experiences outside of the classroom.”**

He is leveraging information from SSO in his new role at BarnTools, saying he can, “relate to producers and farmers across the nation and more prepared when answering their questions.”



Swine Research and Education Experience

Developing a talent pipeline is a priority for USPCE, including introducing students to careers in the pork industry and cultivating their interest in research. Undergraduate and veterinary students may apply for funding for research projects in applicable areas through the Swine Research and Education Experience (SREE) program. Beyond research outcomes, the program's value lies in building students' connection to, and careers within, the industry.

The value of SREE is exposure to new aspects of the industry. University professors and researchers can apply and recommend students for future programming.

Visit usporkcenter.org for more information

Student Highlight: Olivia Kettle

(student funded under Dr. Suzanne Leonard at North Carolina State University)



Olivia Kettle is a junior at North Carolina State University majoring in animal science. She is a research assistant with Dr. Suzanne Leonard facilitating precision livestock farming projects.

At the Midwest Section of American Society of Animal Science meeting, Kettle won first place in undergraduate poster competition for her project, "Testing a custom computer vision system for automatically detecting piglet interbirth interval." The poster discussed her research on developing a custom computer vision system to automatically identify when piglets are born so the interbirth interval can be monitored.

This project introduced Olivia into the swine industry. It sparked her educational path to search for innovative ways to raise livestock.

"I have learned to approach obstacles in a distinctive and strategic manner with the aid of precision livestock farming, which has taught me to assess problems through technology. This research affects my future endeavors through giving me a strategic approach to answer questions related to animal health, agriculture and producer needs."

In the future, Olivia plans to continue working with Dr. Leonard. She will graduate with a bachelor's in May 2023 and is anticipating veterinary school.



SREE Projects

2020-21

Nutritional Enrichment to Improve Nursery Pig Behavior During Weaning

- Dr. Anna Johnson, Iowa State University

Identifying Practical Approaches to Manage Castration Pain on Commercial Swine Farms

- Dr. Monique Pairis-Garcia, North Carolina State University

Design Alternatives for Effective Manure Removal and Storage for a Research Farm

- Dr. Erin Cortus, University of Minnesota

Impact of Feeding Multiple Meals Prefarrow on Stillborn Rate

- Dr. Mark Knauer, North Carolina State University

Development and Testing of an Internet-of-Things (IoT) Based System for Remote Monitoring of Thermal Environments in Swine Barns

- Dr. Xufei Yang, South Dakota State University

Understanding the Relationship Between Litter Size and Functional Teat Number at Farrowing on Litter Size at Weaning

- Dr. Jeff Wiegert, Texas A&M University

2021-22

Testing a Computer Vision System for Automatically Detecting Piglet Interbirth Interval

- Suzanne Leonard, North Carolina State University

Validation of Linear Body Measurements to Predict Weight in Finishing Pigs

- Crystal Levesque, South Dakota State University

Microbiome Composition of Single Sire Versus Pooled Extended Semen and the Relationship with Sperm Quality Parameters

- Rebecca Poole, Texas A&M University

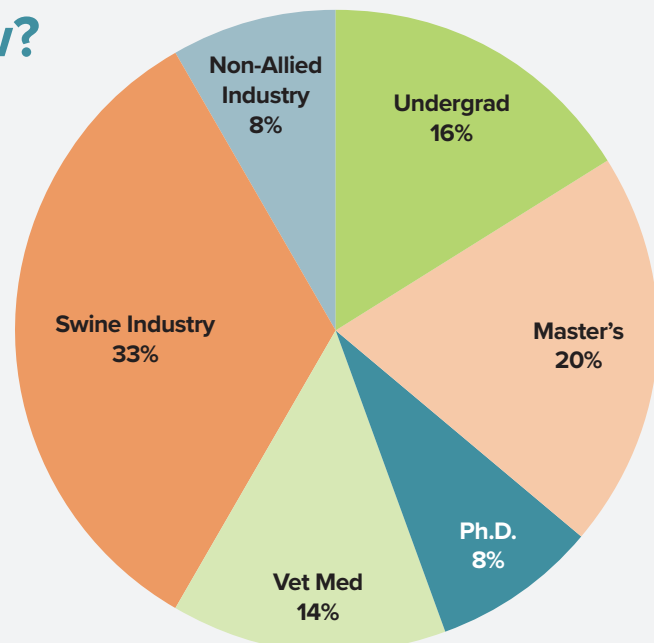
Development of an Immersive Educational Experience for Veterinary Students Using Virtual Reality

- Perle Zhitnitskiy, University of Minnesota

Visit usporkcenter.org for the full reports.

Where are they now?

Forty-nine students involved in SREE between 2014 and 2021 identified the highest degree or career in a recent survey.





Pork Information Gateway



Pork Information Gateway (PIG) is a free online resource library written and reviewed by academia and industry experts. Educators, extension, small- to mid-size farms, alternative producers and youth use these online tools outlining eight consolidated categories based on production topics.

Pork Information Gateway Analytics

Number of users:

356,071

Page views:

589,336

Data from July 1, 2021 – June 30, 2022

Top Viewed Resources on the Pork Information Gateway

(from July 1, 2021 - June 30, 2022)

1. Baby Pig Management - Birth to Weaning
2. Whole-Hog Value Calculator
3. Cooked Color in Pork
4. Biosecurity of Pigs and Farm Security
5. How to Monitor and Assist Difficult Farrowing
6. Proper Injection Techniques for Pigs
7. Pig Breeding Systems for Small and Beginning Pig Farmers
8. Pregnancy Diagnosis in Swine
9. How To Improve Current Ratio
10. Estrus or Heat Detection

USPCE funds stipends for graduate/post-doctoral students and their faculty mentors to serve as PIG's subject area editors and facilitate continual updates to the platform. This significant investment develops skills to be applied in their future careers, and the pork industry more broadly.

Swine Health: Dr. Gabi Doughan

(Iowa State University Swine Medicine Education Center)



Gabi Doughan has a unique background in the swine industry. Growing up in the suburbs, Gabi had zero interest in pigs until she interned with the Swine Medicine Center, and the trajectory of her career goals pivoted and her passion grew. Gabi found a position as a work study student, which led her to hear about the Pork Information Gateway (PIG) program.

Through downloading and compiling the resources through PIG, Gabi has developed and grown her project management skills by working through the review process, positioning new exposure to information in the swine industry.

“I have really enjoyed getting to network with all the authors. This has allowed me to work with experts and translate information into something that is student and producer friendly.”

This program will continue to give Gabi first-hand experience with her newly found passion for the swine industry not only now in her career, but for many years ahead.

“The networking, reviewing, working through expert information and digesting that to make it sound appealing are all part of the skillsets I will apply in my career path.”



Business Management, Human Resources, Worker Health & Safety: Dr. Jorge Perez-Pelencia

(South Dakota State University)



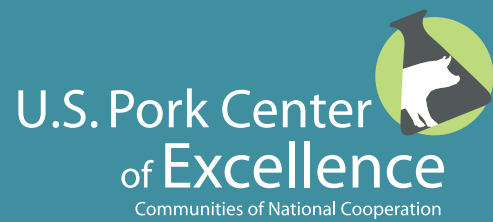
Born and raised in Colombia, Dr. Jorge Perez-Pelencia received his bachelor’s degree in animal science, and then moved to Brazil where he received his Ph.D. Although Jorge did not have a strong swine background, he found his passion during a summer internship in swine nutrition. He traveled north to South Dakota where he is currently becoming a postdoctoral researcher at South Dakota State University in Brookings, South Dakota.

Jorge has already spent a year in the PIG program, and this year is helping bring a new communication aspect.

“Through my time in the United States, I have noticed there is a strong communication barrier in the swine industry which creates a challenge for non-English speaking or English as a second language employees and producers,” he explains.

Through his experience as an editor, he created a proposal for several articles to be bilingual, since he can speak Spanish, English and Portuguese. He is currently working on translating these research articles to Spanish.





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