GOOD NEWS

Michigan Dairy Youth Program Newsletter

Attached is the Michigan Dairy Youth Program Newsletter including the following articles,
*Michigan 4-H dairy judging team ranks No. 1 in the country,* 
*On the road with Michigan’s diary judging program,* 
*Frahm wins $1,000 scholarship at all-American Dairy show and* 
*Europe-bound judging team plans fundraising events.*

MAKE A NOTE OF IT

AAALAC SITE VISIT - Update #1

Michigan State University’s Animal Care Program (which includes all housing facilities, 
laboratories, and farms that use animals in research, teaching or testing) is having an 
accreditation site visit by AAALAC, International on **Monday February 25th – Thursday February 28th.** Attached is information regarding what you can expect for this visit and 
the importance of appearance in making a good first impression during a site visit. 
Additional information will appear in future updates. It is very important that everyone does 
their part to make this a successful site visit. If you work with animals at the farms or in 
laboratories, please make sure everyone involved on animal projects is listed on the 
appropriate Animal Use Forms. In addition make sure that project protocols are current 
with the procedures approved within an Animal Use Form. Make sure your animal area is 
neat, clean and orderly with no expired products, and that all of your training and records 
(research and/or medical) are complete and up to date. Do not leave this work for the farm 
or facility managers to take care of because they are very busy with their own areas.

AAALAC International is a private, nonprofit organization that promotes the humane 
treatment of animals in science through voluntary accreditation and assessment programs. 
AAALAC stands for the “Association for Assessment and Accreditation of Laboratory 
Animal Care.”

AAALAC, Intl. accreditation is accepted as evidence of compliance with policies on animal 
care and use set by the National Institutes of Health, American Heart Association, 
Department of Veterans Affairs, Department of Agriculture, and the National Aeronautics 
and Space Administration among others.

More than 850 companies, universities, hospitals, government agencies and other 
research institutions in 36 countries have earned AAALAC accreditation, demonstrating 
their commitment to responsible animal care and use. These institutions volunteer to participate in AAALAC’s program, in addition to complying with the local, state and federal 
laws that regulate animal research.

For more information about AAALAC, Intl. accreditation, please contact the IACUC Office 
at 432-4151 or iacuc@msu.edu.

Thank you in advance for your efforts so that we can have a successful site visit!
EVENTS

Department Coffee Break
The once a month coffee break for the Animal Science Department will be held the following dates at 9:30 in room 1310 Anthony:

February 8th
March 8th
April 12th
May 10th

SEMINARS

Sonya Schuh-Huerta, Ph.D., Institute for Stem Cell biology and Regenerative Medicine, Stanford University will present “Genetic and environmental Factors in Gamete Development and fertility. January 24, 2013 in 1425 Biomedical Physical Sciences Bldg from 2:00 p.m. – 3:00 p.m.

Dr. Pasha Lyvers-Peffer, The Ohio State University, Scholarship in Teaching, Friday, January 25, 2013, 1:00pm, 1310 Anthony Hall.

Katherine Burns, Ph.D., National Institute of Environmental health Science will present “the Role of Estrogen Receptor Signaling in Endometriosis in room 1310 Anthony Hall, January 29, 2013 from 2:00-3:00 pm.

Dr. Michel Wattiaux, Professor, University of Wisconsin-Madison, Moving University Teaching and Learning into the 21st Century, Friday, February 22, 1:00pm, 1310 Anthony Hall


UNDERGRADUATE STUDENTS

GRADUATE STUDENTS

The time for the grad/faculty pizza lunches for SS13 is yet to be determined. Information will be sent regarding the schedule for this semester as soon as the time is determined, or look in the Roundup for the information.

Thank you!

POSITION ANNOUNCEMENTS
Michigan ranks No. 1 in the country after winning high team award overall and in oral reasons at National 4-H Dairy Judging Contest at World Dairy Expo

**Michigan Dairy Youth Program earns sixth invitation to Europe in nine years**

Michigan is home to the No. 1 youth dairy judging team in the country. The Michigan youth delegation earned enough points to oust out teams representing 31 other states in this year’s National 4-H Dairy Judging Contest held Oct. 1 at World Dairy Expo in Madison, Wis. The team was the highest ranking team both overall — beating out second place Minnesota by 44 points — and in oral reasons. The double-win is a first for the Michigan Dairy Youth Program, which is led by Dr. Joe Domecq, Michigan State University (MSU) animal science specialist and coordinator of the Michigan dairy judging program.

By winning first place overall, the team earns an invitation to travel to Europe for a two-week International Livestock Judging Tour, an honor awarded to the three top-ranking teams at the national contest. This year marks the sixth time in nine years that the youth team from Michigan has earned this honor — it placed second or third five times in the last eight years — but 2012 marks the first time it has finished alone in the top spot.

Competing on the Michigan youth team were MSU students Megan Bush, Swartz Creek; Hayleigh Geurink, Allendale; and Savannah Katulski, Goodrich; and Alma College student Megan Filhart, Rosebush. The team was coached by Domecq and Sarah Black, volunteer assistant coach from Eagle.

As a team, Michigan placed first in the Ayrshire breed, first in the Guernsey breed, second in the Holstein breed and fifth in the Jersey breed.

Individually, each team member placed among the top 10 in one or more breeds. Bush finished second place overall, fourth place in placing points only and fifth place in oral reasons. She was high individual in the Guernsey breed, third high individual in the Ayrshire breed and sixth place in Jerseys.

Filhart was third high individual overall, second in both the Ayrshire and Holstein breeds, fifth place in placing points only and seventh place in oral reasons.

Geurink placed eighth place in oral reasons, ninth overall and was the second high individual in the Guernsey breed. Katulski placed seventh in the Brown Swiss and Guernsey breeds and was 20th high individual overall.

Team members will travel to Europe in June 2013. While in Europe, the delegation will visit England, Ireland, Northern Ireland, Scotland and Wales. In addition to seeing the sites, they will visit the Royal Highland Show and compete in a judging contest in Scotland and be assigned to live with a different host farm family for three days during their stay in Ireland.

**IN THIS ISSUE...**

- Michigan 4-H dairy judging team ranks No. 1 in the country
- On the road with Michigan’s dairy judging program
- Frahm wins $1,000 scholarship at All-American Dairy Show
- Europe-bound judging team plans fundraising events

**WEB SITES:**
- www.MIdairyyouth.ans.msu.edu
- www.twitter.com/msudairyexpo
- www.twitter.com/MIdairyyouth

**FACEBOOK:**
- www.facebook.com/michigandairyexpo
- www.facebook.com/MichiganDairyYouthProgram
### Collegiate Division

The 2012 Michigan State University (MSU) collegiate team members were: agribusiness junior Jon Woodrow (J.W.) Hart, North Adams; animal science junior Katelyn Horning, Manchester; agribusiness management junior Sarah Michalek, Deckerville; and animal science senior Cassie Parks, Clinton.

The team competed in three competitions: the 44th annual All-American Invitational Youth Dairy Judging Contest, Harrisburg, Pa.; the 92nd annual World Dairy Expo Dairy Cattle Judging Contest, Madison, Wis.; and the 39th annual North American International Livestock Exhibition (NAILE), Louisville, Ky.

#### TEAM PLACINGS

**HARRISBURG** (18 teams competed)
- 6th high team, Holstein breed
- 6th high team, Jersey breed
- 8th high team, overall
- 8th high team, Milking Shorthorn
- 10th high team, overall

**MADISON** (19 teams competed)
- 4th high team, Brown Swiss breed
- 8th high team, overall
- 9th high team, oral reasons

**LOUISVILLE** (20 teams competed)
- 2nd high team, Guernsey breed
- 5th high team, overall
- 7th high team, Brown Swiss breed
- 8th high team, Ayrshire breed
- 10th high team, oral reasons

#### Individual Results

**SARAH MICHALEK**
- 16th high individual, Holstein breed; Harrisburg
- 16th high individual, overall; Louisville
- 14th high individual, Ayrshire breed; Harrisburg
- 12th high individual, Holstein breed; Madison

**KATELYN HORNING**
- 6th high individual, Brown Swiss breed; Madison
- 7th high individual, Guernsey breed; Madison
- 6th high individual, Jersey breed; Madison
- 14th high individual, Jersey breed; Madison
- 14th high individual, Ayrshire breed; Madison
- 16th high individual, overall; Madison
- 16th high individual, Holstein breed; Madison
- 18th high individual, Brown Swiss breed; Madison

**CASSIE PARKS**
- 11th high individual, Brown Swiss breed; Madison
- 11th high individual, Overall; Louisville
- 12th high individual, Ayrshire breed; Madison
- 14th high individual, Jersey breed; Madison
- 19th high individual, Milking Shorthorn; Madison
- 20th high individual, overall; Louisville
- 20th high individual, Holstein breed; Madison
- 18th high individual, Brown Swiss breed; Madison

**J.W. HART**
- 6th high individual, Guernsey breed; Madison
- 6th high individual, Holstein breed; Madison
- 7th high individual, Holstein breed; Harrisburg
- 8th high individual, Ayrshire breed; Madison
- 10th high individual, Oral reasons; Madison
- 11th high individual, Brown Swiss breed; Madison
- 11th high individual, overall; Madison
- 12th high individual, Brown Swiss breed; Madison
- 14th high individual, Holstein breed; Madison
- 15th high individual, Ayrshire breed; Madison
- 16th high individual, overall; Madison
- 17th high individual, Guernsey breed; Madison

#### National 4-H Dairy Cattle Judging Contest

Madison, Wis. (31 teams competed)

**MEGAN FILHART**
- 7th high individual, Guernsey breed; Madison
- 6th high individual, Ayrshire breed; Madison
- 7th high individual, Guernsey breed; Madison
- 8th high individual, oral reasons; Madison
- 9th high individual, overall; Madison

**ANNA MUSOLF**
- 9th high individual, Guernsey breed; Louisville
- 7th high individual, Brown Swiss breed; Madison
- 11th high individual, Ayrshire breed; Madison
- 10th high individual, oral reasons; Madison
- 13th high individual, Brown Swiss breed; Madison

**MEGAN BUSH**
- 7th high individual, Holstein breed
- 8th high individual, Ayrshire breed
- 9th high individual, overall

**LUCAS MOSER**
- 10th high individual, Brown Swiss breed
- 10th high individual, Guernsey breed
- 11th high individual, Holstein breed; Madison
- 19th high individual, overall

#### 44th annual All-American Invitational Youth Dairy Judging Contest

Harrisburg, Pa. (12 teams competed)

**T.J. FRAHM**
- High individual, Guernsey breed
- 2nd high individual, Ayrshire breed
- 10th high individual, overall

**LUCAS MOSER**
- 8th high individual, Ayrshire breed
- 15th high individual, Brown Swiss breed
- 23rd high individual, overall

**KELLY RATERINK**
- 10th high individual, Brown Swiss breed
- 10th high individual, Guernsey breed
- 11th high individual, Holstein breed
- 19th high individual, overall

**MEGAN BUSH**
- High individual, Guernsey breed
- 2nd high individual, overall
- 3rd high individual, Ayrshire breed
- 4th high individual, oral reasons
- 5th high individual, placing points
- 6th high individual, Brown Swiss breed
- 2nd high team, oral reasons
- 2nd high team, Holstein breed
- 2nd high team, Ayrshire breed
- 2nd high team, Guernsey breed

**SAVANNAH KATULSKI**
- 7th high individual, Brown Swiss breed
- 7th high individual, Guernsey breed
- 20th high individual, overall

**JAY LUOMA**
- 3rd high individual, Brown Swiss breed
- 12th high individual, overall
- 13th high individual, Holstein breed
- 13th high individual, oral reasons

**JAY LUOMA**
- 3rd high individual, Brown Swiss breed
- 12th high individual, overall
- 13th high individual, Holstein breed
- 13th high individual, oral reasons

The Michigan dairy judging program appreciates the support of its sponsors:

- ABS Global, Inc.: Northstar Cooperative; the Michigan Holstein Association; the Michigan District 1 and District 6 Holstein Associations; the Michigan Jersey Cattle Club; the United Dairy Industry of Michigan; the Michigan Milk Producers Association and the Michigan Dairy Memorial Foundation.

Thank you for your support.
## Michigan Dairy Youth Program Recap

### MICHIGAN DAIRY YOUTH PROGRAM NEWSLETTER | Winter 2013: Dairy Judging Program Recap

#### MICHIGAN DAIRY JUDGING PROGRAM

Four second-year MSU Institute of Agricultural Technology dairy production management program students competed in the 2012 International Postsecondary Dairy Judging Contest held during World Dairy Expo in Madison, Wis., and the 39th annual North American International Livestock Exposition (NAILE) in Louisville, Ky.

Team members were: sophomores Adam Guernsey, Ionia; Allison Oesch, Alto; Malissa Reed, Owosso; and Britney Zondlak, Byron Center.

#### TEAM PLACINGS

<table>
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<tr>
<th>Location</th>
<th>Team Placings</th>
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<tr>
<td>LOUISVILLE</td>
<td>6 teams competed</td>
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<tr>
<td>4th high team, Ayrshire breed</td>
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<tr>
<td>4th high team, Dairy Herd Improvement records and dairy business management. They evaluated cows to identify the most profitable ones before determining how best to feed them, keep them healthy and measure their performance.</td>
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| "This contest is a training ground for young dairymen," said Carl Brown, one of the event organizers. "It provides an exercise in the width and breadth of dairy management."

**MADISON** (2 teams competed)

- **All-American Dairy Show.**

Frahm is high individual in the Junior Dairy Management Contest at All-American Dairy Show in Harrisburg, wins $1,000 scholarship

Timothy J. Frahm, of Frankfort, was the high individual in the 26th annual Junior Dairy Management Contest held in Sept. at the 2012 All-American Dairy Show in Harrisburg.

"It’s an honor to win," Frahm said. He is a freshman at Michigan State University (MSU) and was a member of the Michigan youth dairy judging team who also competed at the All-American Dairy Show.

The dairy management contest is a practical, hands-on competition that tests contestants’ knowledge about a variety of dairy management-related topics. Participants competed in six classes, including dairy cattle selection, dairy linear type, feed identification and management, nutrient management, dairy tools and equipment, Dairy Herd Improvement records and dairy business management. They evaluated cows to identify the most profitable ones before determining how best to feed them, keep them healthy and measure their performance.

"This contest is a training ground for young dairymen," said Carl Brown, one of the event organizers. "It provides an exercise in the width and breadth of dairy management."

The Pennsylvania Dairyman’s Association sponsored the $1,000 scholarship for the high ranking individual.

### MICHIGAN DAIRY YOUTH PROGRAM NEWSLETTER | Winter 2013: Dairy Judging Program Recap

### Michigan dairy youth organize fundraisers to earn $20,000 to travel to Europe for International Livestock Judging Tour

Earning national championship honors at the National 4-H Dairy Judging Contest last October at World Dairy Expo was just the beginning of the life-changing experience for members of the Michigan youth dairy judging team. They are embarking on a new mission: raising money to travel to Europe this summer for the International Livestock Judging Tour.

Winning the contest earned the Michigan team – Megan Bush, Swartz Creek; Megan Filhart, Rosebud; Bryleigh Geurink, Allendale; Savannah Katahdin, Goodrich, and team coach Dr. Joe Domecq – an invitation to travel to Europe for two weeks in June 2013. While in Europe, the delegation will visit England, Ireland, Netherlands, Scotland and Wales. In addition to seeing the sites, they will visit the Royal Highland Show and compete in a judging contest in Scotland and be assigned to live with a different host farm family for three days during their stay in Ireland.

Participating in the International Livestock Judging Tour to Europe will cost the team $20,000. The amount covers airfare to and from Europe, transportation throughout Europe, lodging, entry to various events and activities, and some meals. In addition to ongoing support provided by program donors and other money-raising projects such as the MSU Spartan Spectacular Sale held each spring, the team members traveling to Europe will be conducting several fundraising activities this winter and spring to earn money for the trip. Most recently, Bush and Geurink headed the crew of 15 Michigan State University (MSU) students who helped feed, do dairy chores, milk, and night hawk (watch over the animals at night) during the “Holiday Harvest Sale” held in East Lansing in December. Each student volunteered time ranging from two to 10 hours at the four-day period; together, Bush and Geurink donated more than 50 hours of time. In return for working, the team received the profits from selling the milk produced by the sale animals.

Coming up during the Great Lakes Regional Dairy Conference (GLRDC) in February, team members will hold a “Say cheese!” fundraising auction on Feb. 7 during the evening. Attendees will have an opportunity to bid on one of 10 packages of cheese curds produced by the MSU Dairy Plant. The successful bidders will have their photographs taken with members of the national champion dairy judging team present at the conference.

Team members will also be conducting a statewide fundraising project every Tuesday now through April in cooperation with the Rosebud Sale Barn, near Rosebud. Youth dairy judging team members will be contacting dairy producers throughout the state seeking donated ball calves and heifer calves. The donated animals will be sold through the Rosebud Sale Barn at its regularly scheduled Tuesday sale, and all proceeds will be earmarked to go to the team’s fundraising project. Producers can also donate the proceeds from the sale of a calf cow or another dairy animal marketed through the Rosebud Sale Barn. Team members will help dairy producers arrange transportation of their donated animals to the sale barn, or producers can deliver their own. Rosebud Sale Barn also has collection points in West Branch and Shipwrecka, Ind. Those who are donating animals only need to advise upon drop-off of the animal at the sale barn that it is being designated to be designated to the Michigan youth dairy judging team.

For more information about the fundraising projects designed to raise money for the trip or to donate an animal, contact Bush at bush@msu.edu or 810-357-9011; Filhart at filhartl@msu.edu or 989-330-9128; Geurink at geurink@msu.edu or 616-348-3777; Katahdin at katahdin1@msu.edu or 716-246-3662; or Domecq at domecq@msu.edu or 517-353-7855.

In addition to the winning Michigan team, the teams who finished in second and third place overall at the national contest also received an invitation to take part in the International Livestock Judging Tour. It was the eighth year in nine years that the Michigan youth dairy judging team earned an invitation to travel to Europe – it placed second or third five times in the last eight years – but that marked the first time it finished No. 1.
Get social with the Michigan Dairy Youth Program!

Stay abreast of the latest Michigan Dairy Youth Program news and happenings by visiting the [Michigan Dairy Youth Program Facebook page](https://www.facebook.com/MichiganDairyYouth).

Join the conversation on Twitter by following [@MIDairyYouth](https://twitter.com/MIDairyYouth).

MICHIGAN 4-H DAIRY YOUTH 2013 Calendar of Events

Feb. 7-9  
11th annual Great Lakes Regional Dairy Conference, Frankenmuth

March 22  
Spartan Spectacular Calf Sale, East Lansing

June 19-21  
4-H Exploration Days, Michigan State University, East Lansing

July 15-19  
Michigan Youth Dairy Days and Michigan Dairy Expo, East Lansing

Don’t miss an issue of the Michigan Dairy Youth Program e-newsletter!

You will no longer be receiving a hard copy of the quarterly Michigan Dairy Youth Program newsletter in your mailbox. This issue is the second all-digital version of the newsletter.

If you don’t want to miss future issues, sign up now to receive the next issue at: [www.midairy.youth.ans.msu.edu/newsletters](http://www.midairy.youth.ans.msu.edu/newsletters)

You will receive an email notice each time a new issue of the Michigan Dairy Youth Program newsletter is available for you to view on the [Michigan Dairy Youth Program website](http://www.midairy.youth.ans.msu.edu). A printer-friendly PDF file of the newsletter will be available online.

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MSU is an affirmative-action, equal-opportunity employer.
MEMORANDUM

To: All PIs and Staff

Re: Appearance of MSU animal research and teaching facilities

General Appearance

The general appearance of animal facilities and laboratories is an important factor in the image that MSU presents. Visitors, students, inspectors, and site visitors entering animal facilities or animal use laboratories for the first time have a strong tendency to formulate an opinion of the level of animal care, the concern for animal welfare, and the quality of research or teaching being conducted based upon appearances. If the lab looks clean, neat and orderly an impression of staff competency and quality research is more readily conveyed. In addition the appearance of the facilities can have a strong influence on students and how they maintain animal facilities as they enter into various professional pursuits.

In most cases MSU is presenting a good image but in some instances people are not cleaning up after themselves or are leaving clutter. Everyone involved in animal work should clean up after themselves and help maintain all animal areas in a clean, neat, and orderly fashion.

Storage issues

The appearance of many animal labs and procedure areas can be readily enhanced by storing miscellaneous research equipment and supplies in sealable containers that can be sanitized, or in mobile carts that can be sanitized. Cardboard boxes cannot be sanitized, provide vermin harborage, and present a very poor image in animal use areas.

Inadequate storage hampers orderly management of animal facilities, and detracts from the general appearance of facilities. In lab and procedure areas inadequate storage often results in excessive clutter and a general disorganized appearance of facilities. Unnecessary equipment and miscellaneous supplies can also impede sanitation and should not be stored in animal use areas. Equipment and supplies should not be maintained or stored in corridors because their presence interferes with sanitation, orderliness, and traffic flow patterns. Designated storage areas should be provided and used.
ANIMAL CARE PROGRAM ACCREDITATION SITE VISIT

The Association for the Assessment and Accreditation of Laboratory Animal Care, International (AAALAC, Intl.) will conduct its site visit at MSU on:


AAALAC, Intl is a private, nonprofit organization that promotes the humane treatment of animals in science through voluntary accreditation and assessment programs. It is not a governmental agency, has no regulatory or legal function, and does not formulate animal care or use policies or regulations. Rather, AAALAC, Intl. accreditation is a voluntary peer-review process, and certifies whether standards of excellence in animal care programs are attained and maintained. More than 850 companies, universities, hospitals, government agencies and other research institutions in 36 countries have earned AAALAC accreditation, demonstrating their commitment to responsible animal care and use.

The AAALAC, Intl. site visit includes a review of the Program Description written by the MSU animal care program team and a site visit by a team of veterinarians and scientists specializing in laboratory animal medicine as well as agricultural animals.

They will spend three full days touring and evaluating the MSU facilities and program on campus (Monday, Tuesday and Wednesday) with follow up visits on Thursday morning. During this time, any laboratory or facility where animals are used is subject to inspection and we won't know until after they arrive which PIs they want to meet.

WHAT THEY ARE LOOKING FOR

The site visitors have been provided with a 400+ page written description of the MSU animal care and use program and facilities. During their four-day visit they will tour animal housing areas, animal surgery areas, laboratories, and farms where animals are used. As they evaluate the MSU program description, inspect the facilities, and interview members of the MSU animal care and use community, the site visitors will be trying to answer some of the following questions:

- Is the University in compliance with all federal laws and regulations, and the standards outlined in the Guide for the Care and Use of Laboratory Animals as well as the Guide for the Care and Use of Agricultural Animals in Research and Teaching?
- Does the animal care and use program receive adequate support (authority and funds) from top level administration?
- Have problems identified during previous site visits or federal inspections been addressed and corrected?
- Is the Institutional Animal Care and Use Committee (IACUC) effective?
- Have all animal use projects and procedures being conducted been approved by the IACUC?
- Is everyone who uses or cares for animals properly trained and skilled?
- Is the occupational health and safety program for animal care and use personnel effective?
- Are animal husbandry, veterinary care, animal surgery, and euthanasia performed in accordance with federal regulations and nationally accepted standards?
- Are the physical facilities (including caging, rooms, buildings, ventilation systems, etc.) designed and maintained in accordance with federal regulations and nationally accepted standards?
- Is the use of hazardous agents in animals conducted with due consideration for the safety of other animals, personnel, and the environment?
- Are medical records current, complete, and readily accessible?

Additionally, the site visitors will pay special attention to animal use projects involving prolonged restraint, food and water restriction, multiple major survival surgeries, and the use of hazardous agents.

If you encounter the site visitors during their rounds on 2/25/13 — 2/28/13, please feel free to welcome them and respond to their questions in an honest and forthright manner to the best of your knowledge -- you may even take the opportunity to network by asking them questions about the animal care and use programs at their home institutions.

Questions and concerns regarding the AAALAC, Intl. site visit can be addressed to the IACUC Office, 421 West Fee Hall Ph: (517)432-4151, Fax: (517) 432-8105, email: iacuc@msu.edu.

With your cooperation, we anticipate a successful accreditation site visit!

We will be sending additional information on how to prepare for the site visit in subsequent emails.
Whether tenure or fixed-term track, planning for and achieving scholarship in teaching is important for both being an effective teacher and for promotion. This is particularly true for those with a majority or full teaching appointment. Dr. Pasha Lyvers-Peffer will share from her own experiences, having a 100% teaching appointment in the Department of Animal Science at The Ohio State University, and achieving recent promotion with tenure. She will share her thoughts about where this expectation is headed in the future.

Dr. Lyvers-Peffer completed her Bachelor of Science degree in Animal Science from the University of Kentucky, her Masters of Science in Animal Science from Michigan State University in 2000, and her Doctor of Philosophy in Nutritional Sciences at the North Carolina State University in 2004. After concluding postdoctoral research at North Carolina State University in Poultry Sciences and working simultaneously as an Instructor at the University North Carolina, Greensboro, she joined the faculty in the department of Animal Science at The Ohio State University in 2005.

In her tenure at OSU, Dr. Lyvers-Peffer published articles entitled: “Elements and Analysis of an Internship Program in Animal Sciences”; “Demographics of an undergraduate animal sciences course and the influence of gender and major on course performance”; and “Student perceptions of an introductory animal sciences course for high-ability students”. Her significant teaching activities have included receiving grants to enhance curricular materials, to develop a course that provides Honors students with challenges and special intellectual experiences; development of an on-line management system for administering an undergraduate internship program; and the publication of an educational text entitled “Introductory Animal Sciences”, Kendall/Hunt Publishing, 2009.

Friday, January 25th, 1:00pm
1310 Anthony Hall
Sonya Schuh-Huerta, Ph.D.
POST-DOCTORAL FELLOW
Institute for Stem Cell Biology and Regenerative Medicine
Stanford University, School of Medicine

January 24, 2012

Genetic and Environmental Factors in Gamete Development and Fertility.

1425 Biomedical Physical Sciences Building
EAST LANSING, MI

Video Conference to 220 Secchia Center
Grand Rapids, MI
2:00-3:00 P.M.

Dr. Schuh-Huerta has great interests in the genes and proteins involved in gamete development, reproduction, and fertility. Her current work aims to elucidate the genes and chromosomes that are involved in establishing a woman’s oocyte (egg) endowment and associated with follicle loss and declining fertility, and the environmental/ethnic factors that modify these effects. An underlying objective is to translate findings into clinical applications to improve the diagnosis and treatment of female infertility.
CURRICULUM VITAE

Katherine A. Burns

1207 Denmark Manor Drive
Morrisville, NC 27560
Telephone: (814) 777-7720
Email: burnsk2@niehs.nih.gov

Laboratory of Reproductive and Developmental Toxicology
National Institute of Environmental Health Sciences
111 TW Alexander Drive
Durham, NC 27709
Telephone: (919) 541-1891

Education

2007-present    Postdoctoral Fellowship- Intramural Research Training Award
                 National Institute of Environmental Health Sciences (NIEHS)
                 Laboratory of Reproductive and Developmental Toxicology

2000-2007    Doctor of Philosophy
             Pennsylvania State University, University Park, PA
             Major: Pathobiology with a concentration in Toxicology; Dissertation: Regulation
             of Peroxisome proliferator-activated receptor alpha activity via cross-talk with
             Glycogen synthase kinase 3

1996-2000    Bachelor of Science
             Gettysburg College, Gettysburg, PA
             Major: Biology; Minor: Chemistry

Academic and Professional Experience

7/07-present    Postdoctoral Fellow, National Institute of Environmental Health Sciences
                   ♦ Working with Kenneth Korach, Laboratory of Reproductive and Developmental Toxicology,
                     Receptor Biology group, Principal Investigator and Chief
                   ♦ Investigating the role of ERα and ERβ in the etiology of endometriosis and determining the
                     key amino acids in ERα to focus research efforts on non-nuclear, non-genomic responses
                     and nuclear genomic responses apart from tethered-mediated activation.
                   ♦ Mentored an undergraduate student with a project designed to encompass my
                     endometriosis research interests with focus on gestational environmental toxicant exposure.

9/00-5/07    Graduate Research Associate, The Pennsylvania State University, Department of Veterinary
                 and Biomedical Sciences, University Park, PA
                 ♦ Worked with Jack Vanden Heuvel, Professor of Veterinary and Biomedical Sciences
                 ♦ Investigated the regulation of peroxisome proliferator-activated receptor α by glycogen
                   synthase kinase 3 (PhD project)
                 ♦ Mentored a number of undergraduate students with projects that were designed to
                   encompass my research, but give them their own research experience.

9/98-8/00    Research Assistant, Gettysburg College, Department of Biology, Gettysburg, PA
                 ♦ Worked with Steven W. James, Associate Professor of Biology
                 ♦ Investigated a mutant of DNA polymerase ε (nimP) and its role in cell cycle regulation in
                   aspergillus nidulans.
                 ♦ Mentored a high school student in Dr. James' lab who wanted to experience scientific
                   research before she entered college.
Awards and Honors

- NIEHS Paper of the Month, 2011
- Laylor Foundation Merit Award, Society for the Study of Reproduction, 2011
- Larry Ewing Memorial Trainee Travel Grant, Society for the Study of Reproduction, 2010
- Bristol-Myers Squibb Graduate Student Fellowship in Molecular Toxicology, 2005-2007
- Society of Toxicology Graduate Student Travel Award, 2005
- Paul Hand Endowment Graduate Student Award, 2005

Professional Society Memberships

- Endocrinology, 2010- present
- The Society for the Study of Reproduction, 2010- present
- The Society of Toxicology, 2004-2009
- The Teratology Society, 2006-present

Publications

**Burns, K.A.**, Hewitt, S.C., Rodriguez, K.F., Janardhan K., Young, S.L., Korach, K.S. Establishment and proliferation of endometriosis-like lesions in immunocompetent estrogen receptor deficient mouse models is host and donor specific (will be submitted to Endocrinology)

**Burns, K.A.** and Korach, K.S., Mice exposed gestationally and developmentally to TCDD exhibit blunted uterine responses as adults (in preparation, will be submitted to Environmental Health Perspectives)

Li, Y., Hewitt1, S.C, Arao, Y., **Burns, K.A.**, Li, L., Korach, K.S. Estrogen regulation of Igf1 involves direct binding of estrogen receptor alpha to estrogen responsive elements (EREs) in mouse models (in preparation, will be submitted to Journal of Biological Chemistry)

Li, Y., **Burns, K.A.**, Arao, Y., Korach, K.S. Endocrine-disrupting chemicals stimulate estrogen receptors through estrogen responsive element (ERE) mechanisms *in vitro* (in press Environmental Health Perspectives 2012)


**Presentations**

**Oral/Invited**

Invited speaker, “Endometriosis-like lesion establishment and proliferation in estrogen receptor deficient mouse models is host and donor specific,” Presentation given at East Carolina University, Brody School of Medicine (2011)

**Burns, K.A.** “Establishment and proliferation of endometriotic-like lesions in immunocompetent estrogen receptor deficient mouse models is host and donor specific,” Presentation given during NIEHS Summer Seminar Series (2011)


**Burns, K.A. and Vanden Heuvel, J.P.** Peroxisome Proliferator Activated Receptor α (PPARα) is regulated and directly phosphorylated by Glycogen Synthase Kinase α/β (GSK3 α/β). Presentation given at the 44th Annual Meeting of the Society of Toxicology (2005)

**Poster**


External Funding:

Project title: Mice exposed developmentally to TCDD exhibit blunted uterine responses as adult Funded by the National Toxicology Program, awarded $300,000 under Human and Health Science Number: HHSN273200900005C (2012-2013)

Continuing Education

2012 Management Boot Camp- offered at the NIEHS by the Office of Fellows’ Career Development to prepare postdoctoral fellows for management of his/her own laboratory

2011 College Teaching- offered at the NIEHS by the Office of Fellows’ Career Development- 10 week (20 hr) course designed to prepare postdoctoral fellows for teaching careers

2010 NIEHS Grant Writing Class- offered to fellows preparing for an academic career

2006 Vertebrate Embryology at the Teratology Society annual meeting

Teaching Experience

Invited presenter on “Mice exposed developmentally to TCDD exhibit blunted uterine responses as adults” for the Reproductive Endocrinology group under the direction of Suzanne Fenton at NIEHS

Camp Monkey, outreach program organized by the Society for the Study of Reproduction (2011)

Ambassador for North Carolina DNA day (2011)


Biotechnology 664: Biotechnology Laws and Regulations, University of Maryland, University College, 2007-2010 (seven semesters)
Guest Lecturer, lectures given on Insecticides and Heavy Metals, Molecular and Cellular Toxicology-VSC497A, Pennsylvania State University, University Park, PA (2005)

Scholarly Activities

- Ad hoc reviewer: Endocrinology (2011-present)
- Ad hoc reviewer: Reproductive Biology and Endocrinology (2010-present)
- Ad hoc reviewer: Environmental Health Perspectives (2009-present)
- Faculty of 1000 Medicine Reports with Dr. Steven L. Young (2009-present)
List of References for Katherine A. Burns:

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I became interested in nuclear receptor biology during graduate school where I studied the phosphorylation of PPARα by GSK3; however, it was towards the end of graduate school when I became interested in studying the etiology of endometriosis as a disease from a nuclear receptor standpoint. After completing my Ph.D., I joined the laboratory of Dr. Kenneth Korach who has allowed me to develop a research focus on endometriosis and nuclear receptors. My graduate school career focused on my critical thinking skills which aided me as a postdoctoral fellow to conceive and develop an independent research program outlined below, with the support and advice of my mentor(s). As an independent investigator, I plan to continue these studies by utilizing the preliminary data and reagents generated during my postdoctoral fellowship. I submitted a K99/R00 Transition to Independence Award pertaining to the studies briefly shown below.

Study 1. To investigate the etiology of endometriosis as a disease with a focus on the Estrogen Receptors (ERα and ERβ)

Endometriosis is a gynecological disease that affects approximately 10% of reproductive-aged women and is a significant cause of pelvic pain and subfertility/infertility affecting the reproductive health and quality of life for millions of women (conservative estimates suggest 5.5 million women in America). Endometriosis is a disease resulting from the ectopic invasion of endometrial tissue within the peritoneal cavity. Estrogen is an important factor stimulating the growth of endometriosis, and both ERα and ERβ are implicated to play a role in this condition, as ERα and ERβ are both aberrantly expressed in women with endometriosis. Additionally, estrogen is involved in immune response and it is known that macrophages, which are the predominant cell type in the peritoneal fluid from endometriosis patients, express both ERα and ERβ. This is an important point, as patients with endometriosis often have a higher incidence of autoimmune disorders.

Generating laboratory models of endometriosis that reflect human pathobiology will allow investigation of the cause of endometriosis and can lead the way for the development of effective treatments. My research uses a homologous, immune competent mouse model for endometriosis, in which the uterus of a donor animal is minced and then dispersed into the peritoneal cavity of a recipient mouse. In women, endometrial lesions form outside the uterine cavity and are found primarily in the peritoneum, on the ovaries and fallopian tubes, and in the rectovaginal septum. We commonly observe endometriosis-like lesions in these places that are cystic with the appearance of endometrial glandular epithelium and stroma. The pathogenic process leading to the establishment and maintenance of endometriosis is not known, and the establishment of murine endometriosis had not been studied in the ERα or ERβ knockout animals (αERKO or βERKO mice). I am using these models to examine the actions of ERα, ERβ, and the immune system components of these receptors in this syngeneic mouse model for endometriosis.

Results to date suggest that lesion development is dependent on both the host and the donor tissue source. For example, wild type uterine tissue injected into the peritoneal cavity of an αERKO mouse has an altered response to estrogen than wild type uterine tissue injected into the peritoneal cavity of a wild type mouse. This suggests that paracrine factors play a role in this process. Conversely, αERKO tissue injected into the peritoneal cavity of a wild type mouse does not establish endometriosis-like lesions. This suggests that the expression of ERα is needed for the establishment of lesions and/or neoangiogenesis. This data is being submitted to Endocrinology. These findings open many avenues for study and I plan to initially focus on the following questions:

1. To focus on the paracrine factors peritoneal washes will be performed and a variety of chemokines/cytokines associated with endometriosis will be assayed after disease initiation. I will address altered chemokine/cytokine levels based on host and donor genotype relative to ER status. Lesion growth and development, in the presence of immune modulators can then be accessed to ask if a key modulator blocks or accelerates lesion establishment.
2. Endocrine disruptors are ubiquitous and are suggested to play a role in women with endometriosis. Therefore, I want to ask how endocrine disruptors (Bisphenol A, Dioxin/TCDD, genistein, Triclosan, etc) affect the growth and development of endometriosis-like lesions. I propose and am in the process of looking at endometriosis-like lesions after early life and adult exposure to endocrine disruptors.

**Study 2. To investigate the non-nuclear, non-genomic, rapid action responses of ERα and to investigate the ERα responses apart from the tethered-mediated responses**

Hormones exert nuclear genomic effects by binding to their cognate nuclear receptors to alter gene expression. This occurs via classical (direct binding to response elements) and tethered (recruitment of other transcription factors which interact with their response elements)-mediated actions. Hormones can also exert non-nuclear, non-genomic effects through rapid activation of membrane-initiated kinase cascades. Hormonal regulation is critical for everyday life; however, aberrant signaling can lead to disease states including breast cancer and endometriosis that are hormonally regulated. Endometriosis and some breast cancers are estrogen dependent diseases acting through estrogen receptor (ERα). ERα exhibits both genomic and non-genomic actions. A challenge facing this therapeutic area of research has been the ability to separate the different mechanisms of ERα action. An ERα DNA binding mutant is available; therefore, I chose to generate additional ERα mutants to focus on the tethered and rapid action mediated responses.

Studies designed to focus on the rapid action or tethered-mediated mechanisms of ERα have often deleted the entire hinge region/D-domain of the receptor. To preserve the receptor as much as possible, mutants were generated via site directed mutagenesis. My studies have focused on two main mutants—H1 ERα (Hinge 1) and H2+NES ERα (Hinge 2 + Nuclear Export Signal). These mutations were studied in tandem to examine their functionality. H1 ERα no longer performs tethered-mediated activation, but maintains direct binding to estrogen response elements (EREs) as demonstrated by luciferase assays, gene expression analysis, and loss of protein:protein interactions. H2+NES ERα no longer performs nuclear genomic mediated activities, but maintains the non-nuclear, non-genomic, rapid action responses as demonstrated by protein kinase activation, luciferase assays and gene expression analysis. These studies are published in the Journal of Biological Chemistry.

With the aforementioned ERα mutants generated, I plan to use them to address the following questions:

1. What are the downstream estrogen targets regulated by the H1 and H2+NES ERα mutants? I have established stable cell lines expressing the ERα mutants and did microarray analysis at various time points to observe changes in gene expression. Are one or more of the functions of ERα associated with specific pathways related to disease function?

2. Do the H1 and H2+NES ERα mutants respond differently to agonists, antagonists, and/or endocrine disruptors? Do the mutants respond differently to proliferation and angiogenic assays?
Teaching and Advising Statement

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Teaching Philosophy

“Aggressively seek understanding” and “professors must study, too” have been two of the more influential statements spoken to me by my undergraduate professors. These statements have taught me to have a passion for learning and asking questions. The interactions I have had with my professors demonstrated to me the importance of the teacher and student relationship. I view the classroom environment as a place where the love of learning and the enthusiasm for the subject begins and flourishes. However, I feel that personal interactions with the student are also an important aspect of engaging the student in his/her quest for understanding. Therefore, it is important for me to be available for questioning during class, office hours or through electronic communication. Active learning strategies, such as, discussing lecture-related questions in an informal group or having cooperative student projects, allows the student to develop critical thinking skills and permits the course objectives to be met. My goal is to have the student ask course related and thought provoking questions throughout the semester to demonstrate his/her grasp of the subject material.

Teaching Experiences

My graduate program did not require a teaching experience, but knowing that I had the desire to teach, I have taken steps to improve my teaching ability. I was able to teach lectures when my graduate advisor was absent and I also volunteered as a teaching assistant. During my graduate studies, I mentored four undergraduate research students with a variety of scientific backgrounds; this has given me direct interaction with students in the laboratory setting. I have continued these efforts as a postdoctoral fellow by mentoring a premedical student, participating in outreach programs and helping non-native English speakers to write scientifically.

More formally, I taught an online graduate course, titled “Biotechnology and the Regulatory Environment” for the University of Maryland University College for seven semesters. Even though the class was online, I learned a great deal through this experience. I learned the importance of structure and organization in the classroom for optimal learning and created course objectives with a detailed syllabus. Students perform optimally when they know the course goals and expectations. The learning environment needs to be challenging, but, at the same time, needs to create an inclusive atmosphere for all students. The good student will excel in most classrooms. However, the mediocre or less motivated student, who may often have difficulties, needs to be identified early in the semester so that he/she can be provided guidance and direction. This could include individual help with assignments or research papers. I have found that students value this approach and appreciate their learning experience more so than being “lost in the pack” and feeling frustrated.

Throughout my career, I have gained experience that will allow me to teach introductory to upper-level courses in molecular and/or cellular biology, biochemistry, and toxicology.

Advising Philosophy and Experiences

The same professor, who told me, “professors have to study, too,” was also an exceptional advisor. This professor took the time to know me, to challenge me, to understand my learning style and my goals. I would like to emulate his teaching style and philosophy. I believe it is important that students recognize their own learning style/s, that students should be challenged and encouraged to follow their career goals based on their interests. I also want to emulate a few individuals whom I consider my postdoctoral mentors; these individuals have challenged me over the last few years, critiqued my research and progress, and at times exhibited a great caring quality by just listening.

I have enjoyed the advising opportunities that I have had. My favorites have been a high school student I mentored as an undergraduate who wanted to be a biology major and more recently a premedical student who has since matriculated to Johns Hopkins University. My own formal scientific path commenced at a small liberal arts college which led to graduate school at a large university and more recently to do research at a government research institute. From these three different environments and experiences, I have learned the importance of advising and mentoring and feel qualified to embark on an advisory role at the university level.