

# March 2015



# Table of Contents

**Double duty: Locust control coordinator from Yucatan continues Ph.D. studies and learning new treatment tactics for ‘perfect pest’ ..... 1**

**Farm and Ranch Days ..... 3**

**WESTI Ag Days ..... 4**

**Department of Molecular Biology Seminars ..... 5**

**Changing Faces, Changing Places ..... 6**

**Combine reading and nutrition and who knows what will happen? ..... 7**

**Miller, Levy win Agricultural Experiment Station’s outstanding research honors ..... 9**

**Monies Awarded ..... 11**

**Proposals Submitted ..... 12**

# Double duty: Locust control coordinator from Yucatan continues Ph.D. studies and learning new treatment tactics for ‘perfect pest’

By Ann Tanaka | March 2015

Having a video pop up on YouTube of a locust swarm streaming over a Starbucks in your home area of the Yucatan Peninsula might be hard to swallow when you’re the person in charge of locust control, and you’re not there.

Google it. You’ll see it. Mario Poot (pronounced Pot) Pech didn’t say if he was annoyed – but he kind of looked like it – locusts were doing what locusts do. He’s studying locust control and conducting research while at the University of Wyoming at the invite of UW Extension entomologist Alex Latchininsky.

Pech arrived in January and will leave this month, drawn as a Ph.D. student and locust control coordinator by Latchininsky’s locust work around the world, including Central America, where the two first met in 2007 at a conference. They met again in 2013 at another conference and again when Latchininsky was invited to speak at an October 2014 workshop in Merida, west of Cancun in the Yucatan Peninsula, coordinated by various governmental organizations.

Latchininsky’s topics included Reduced Agent Area Treatments (RAATs), integrated pest management, and remote sensing applied to locust monitoring. Pech then invited Latchininsky to present at the [Instituto Tecnológico de Conka](#) he is attending.

Pech was an invited speaker when the National Grasshopper Management Board met this January in Denver. Latchininsky is chair. With an invitation from Latchininsky, Pech traveled the extra 140 miles to Laramie.

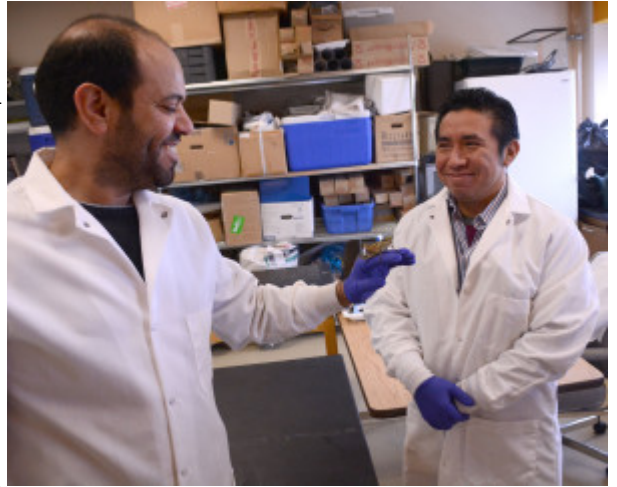
“His activities are two-fold: locust research and locust control, and we are happy we can address both parts,” says Latchininsky.

## Lifelong Pursuit

Pech and the Central American locust *Schistocerca piceifrons* have had a relationship since he was a child growing up in the country in Yucatan.

“I remember when I was a kid seeing a swarm and think, ‘Wow. What a show!’ I never imagined one day I would be the person responsible for solving the locust problem,” he says.

Pech dealt with locusts for his service to the community as a college student, and then his thesis was on locusts. “I thought then, when I do my Ph.D., not on locusts,” he says. “And I repeat locusts again. My father told me, “It is in your blood.””



Ph.D. student Wahid Dahkel, left, and Mario Poot Pech display an Eastern Lubber grasshopper *Romalea guttata* in the laboratory.

Complications drive locust control in Yucatan. Most of the time, locusts are in areas humans can't access on the ground. Some of the pesticides being used are banned in many countries because of high toxicity to humans.

Latchininsky says Pech's stay at UW is helping with his Ph.D. studies, and he's learning elements of various control measures.

"First, the research. Everything relates to his Ph.D.," says Latchininsky. Pech met with David Legg to bolster statistical treatment of his data, and Latchininsky's doctoral student Doug Smith is showing Pech his analyses of historical data. Then, he met with Ramesh Sivanpillai, a research scientist in the Wyoming Geographic Information Science Center, who will use Yucatan GPS data to analyze locusts and vegetation. Latchininsky has collaborated before with Sivanpillai on locust projects.

As locust control coordinator, he's been learning about integrated pest management, RAATs, biological control, the forecasting of locust outbreaks, and rearing of locusts in the lab.

### **There Will be Changes**

Pech is already adamant about changing approaches to locust control in Mexico.

"Every year we are doing similar things to 40 years ago," he says. "We need to change the locust campaign. If we continue to do similar things, the results will be the same. My objective is to find alternatives."

Pech says the locust is a perfect pest. "I always say there are two pests in the world - the locust and all the others. The locust doesn't have any comparison," says Pech.

Kill the swarms over cities and residents complain of the odor of decaying locusts. Attempt to kill them when flying over plants needing pollination, and apiarists [beekeepers] are alarmed, but farmers want compensation if the locusts aren't killed.

And they fly into political arenas. The locust is not just a problem for Yucatan but also for other Central American countries. The source area in which locusts breed covers almost 1 million acres. And locusts hatch twice a year in Yucatan compared to only once in Wyoming.

A meeting just concluded in the Mexican state of Campeche, attended by representatives from Yucatan and neighboring states. Swarms were flying from Yucatan to Campeche, much to the dismay of its residents. "The results of the meeting are that all is OK. We are friends again," says Pech.

Latchininsky says the father of modern locust science, Sir Boris Uvarov, once said, "I have never heard that someone complained of locusts flying away from them. The locusts are always said to come from the neighbors."

"As with other locust managers around the world, Pech deals with this on a daily basis," says Latchininsky.

No slides are available in this gallery

# Farm and Ranch Days

By Ann Tanaka | March 2015

No slides are available in this gallery

# WESTI Ag Days

By Ann Tanaka | March 2015

No slides are available in this gallery

# Department of Molecular Biology Seminars

By Ann Tanaka | March 2015

Fridays, 2:10-3 p.m., Animal Science/Molecular Biology building, room 103 -

**March 6:** "The Epithelial Splicing Regulatory Proteins (Esrp1 and Esrp2) are Essential for Mammalian Development through Control of an Epithelial-specific Splicing Network," Russ Carstens, University of Pennsylvania

**March 13:** "Building Ciliary Arrays: Centriole Assembly, Organization, and Force Resistance," Chad Pearson, University of Colorado

**March 27:** "Regulation and Surface Protein Control of *Staphylococcus aureus* Clumping," Alexander Horswill, University of Iowa

# Changing Faces, Changing Places

By Ann Tanaka | March 2015

## **Welcome:**

**Andreen, Amy:** UW Extension State 4-H office, events coordinator (3/16)

**McGuffey, Megan:** Cent\$ible Nutrition Program, manager

**Perry, Abby:** UW Extension, Area Sustainable Management of Rangeland Resources educator (2/16)



# Combine reading and nutrition and who knows what will happen?

By Ann Tanaka | March 2015  
How do little girls grow?

Provide nutrition and literacy and they could grow up to become First Lady - or governor.

The director of the Cent\$ible Nutrition Program remembers one little girl in the movie documentary "A Place at the Table" who said she was always so hungry in school she would picture her teacher as a banana.

Mindy Meuli has not forgotten that.

## Honoring First Lady

On this particular day in Cheyenne in February, First Lady Carol Mead was being honored by the Legislative Spouses/Significant Others Group for being First Lady and for her efforts to improve child literacy and healthy nutrition across Wyoming.

The group honors whoever is First Lady each session and her chosen projects. Their representatives had contacted Mead to find if there was an issue she wanted highlighted.

Mead mentioned a Two Buck Lunch sponsored by CNP she attended last year, and the group representatives then contacted Meuli. That event, offering a menu made of CNP recipes, provided "an amazing variety of food for a very small budget," Mead recalls.

She also requested Triumph High School's culinary class prepare the meal this year.

More than 70 legislative spouses and significant others attended the Cheyenne event. They had to keep meal costs at or below \$2: chicken enchiladas were 90 cents; sour cream 10 cents; corn bread 15 cents; tossed green salad 25 cents; dressing 10 cents; fruit salad 20 cents; milk 15 cents; coffee and pop, 10 cents.

Posters of \$2 alternatives hung on a wall faced those going through the line: coffee and a doughnut; one large order of French fries; one fast food burrito; two vending machine snacks.

## Extending Budgets

The CNP program, Mead says, extends the ability of families to get a nutritious meal on very tight budgets.

"First Lady Carol Mead has really been a champion for us," says Meuli. "Part of her efforts include healthy meals, healthy eating, and she saw CNP as a model for healthy eating."

CNP is a part of the University of Wyoming Extension and partners with the Wyoming Department of Family Services and other county and local service providers. CNP is funded by the Supplemental Nutrition



*Kali McCrackin, Cent\$ible Nutrition Program marketing coordinator, serves Laurie Urbigkit during the Two Buck luncheon, part of a program honoring First Lady Carol Mead and her efforts to improve children's literacy and healthy nutrition. CNP served the lunch, which was prepared by culinary students at Triumph High School. The event, at the Cheyenne Public Library, was sponsored by the Legislative Spouses/Significant Others Group.*

Assistant Program Education (SNAP-Ed) and the Expanded Food and Nutrition Education Program (EFNEP).

CNP has collaborated before with the First Lady on the “Eat, Read, Grow” program that has the literacy component. Families are invited for a meal during the evening and books are provided for children.

“We provide a very nutritious meal for these families and show how they can actually take that home (through CNP recipes),” says Mead. “It’s a great program.”

Some residents are not so fortunate to share in Wyoming’s land of plenty.

The Wyoming Food Bank of the Rockies says:

\* About 1 in 12 residents struggle to put enough food on the table.

\* About 39 percent of Wyoming children qualify for the free or reduced lunch (almost 26,000 children)

\* About 9.4 percent of children in Wyoming live in poverty.

## **Wyoming Hunger**

Meuli believes hunger is more widespread in Wyoming than many may think.

“I’ll never forget my first class I went to in Jackson,” she says. “The educator asked, ‘How many of you had breakfast this morning?’ and this little boy says, ‘My dad doesn’t get paid for a week so we don’t have anything in the house to eat until he gets paid. So we don’t have breakfast.’ That stuck with me. We just don’t realize it’s common.”

There are other programs similar to Eat, Read, Grow, says Meuli, dependent upon each county: they may be called Dine and Discovery, Book and a Bite.

Event goals are to increase recognition of CNP and build partnerships, says Megan McGuffey, CNP manager.

Events were requested in Laramie, Torrington, and Douglas following the Cheyenne Two Buck Lunch.

“One of the main things we do is partner with other groups that target similar audiences,” McGuffey says. “I thought we had a great showing. Over 70 people were there. Whenever you have a figure like First Lady Carol Mead backing our program, that’s great.”

There is discussion at the federal level to reduce SNAP-Ed, says Meuli.

“When you get down to working with the people, SNAP benefits may be the only source of money for food,” she notes. “I personally think everyone has a right to food. How can we tell people we are not going to support them being able to buy food?”

The girl Meuli remembers imagining her teacher as a banana could not focus on schoolwork because she was so hungry.

“When we set children up like that, how do we expect them to succeed?” she asks.

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# Miller, Levy win Agricultural Experiment Station's outstanding research honors

By Ann Tanaka | March 2015

Professor Scott Miller and Assistant Professor Dan Levy won outstanding research and early career research awards from the Wyoming Agricultural Experiment Station.

UW President Dick McGinity presented the honors at the AES awards banquet February 18 along with Bret Hess, associate dean for research in the College of Agriculture and Natural Resources and director of AES, and Frank Galey, dean of the college.

Miller is in the Department of Ecosystem Science and Management and Levy in the Department of Molecular Biology. Miller received \$1,000 and Levy received \$500.

Miller joined UW in 2002 as an assistant professor in the then-Department of Renewable Resources. His research focus is spatial hydrology, and his lab focuses on the use of innovative field and modeling techniques to better understand the fate and transport of water and how humans change hydrologic response. He has worked around the world on topics ranging from deforestation to risk assessment, but more recently has focused his research energy on Wyoming-related issues.

Levy joined UW in 2011 after working as a postdoctoral fellow in molecular and cell biology at the University of California, Berkeley. His lab's goal is to reveal nuclear size control mechanisms to understand how nuclear size affects cell and nuclear function and sub-nuclear organization. His previous research and training as a mechanistic biochemist, investigating size control of intracellular structures and developing in vitro reconstitution systems, positioned him to solve problems relating to nuclear size regulation.

Also nominated for the early career research award were Melanie Murphy, assistant professor in the Department of Ecosystem Science and Management, and Andrew Kniss, associate professor, and Brian Mealor, assistant professor, both in the Department of Plant Sciences.

## Ag Economist Authors Win Top Story

Recipients of the award for top story in the research magazine *Reflections* were presented. Authors of the article "Predator compensation policies in the U.S. and France" won the honor. Authors are Associate Professor Benjamin Rashford, senior research scientist Thomas Foulke, Professor David Taylor, and Jordan Steele, former graduate student, in the Department of Agricultural and Applied Economics.

The authors received \$1,000 with another \$1,000 going to their department to support research activities.

AES also honored the top graduate student story. Anna Scofield received the award for "Managing the spatial pattern of residential development could reduce the cost of fighting wildfires." Scofield received



*Professor Scott Miller receives congratulations from UW president Dick McGinity, left, and Frank Galey, dean of the College of Agriculture and Natural Resources, upon receiving the Outstanding Research Award.*

\$750.

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# Monies Awarded

By Ann Tanaka | March 2015

**Adamovicz, Jeffrey:** \$18,224 from Bill and Melinda Gates Foundation for “Testing Nanoparticle-based Vaccine for Brucellosis.”

**Baumgartner, Robert:** \$6,000 from various sponsors for “Crop Research.”

**Freeburn, James:** \$539,087 from U.S. Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA) for “Western Sustainable Agriculture Research and Education Program and Competitive Grants Program.”

**Mealor, Brian:** \$35,000 from Wyoming Governor’s Office for “Wyoming Invasive Grass Initiative: Statewide Cheatgrass Distribution and Prioritization.”

**Norton, Jay, Urszula Norton, Axel Garcia y Garcia, Earl Creech, and Jennifer Reeve:** \$305,135 from USDA NIFA for “Compost Carryover and Cover Crop Effects on Soil Quality Profitability, and Cultivar Selection in Organic Dryland Wheat.”

**Sondgeroth, Kerry:** \$124,432 from NIH for “The Role of Variable Erythrocyte Surface Antigen (VESA1) Proteins in *Babesia bovi*.”

# Proposals Submitted

By Ann Tanaka | March 2015

**Collier, Timothy:** \$24,803 to U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service for “Biological Control of Wyoming Weeds and Gypsy Moth Survey.”

**Ehmke, Cole, Mariah Ehmke, Mae Smith, Kellie Chichester, Ashley Garrelts, Tamra Jensen, and Caleb Carter:** \$15,000 to Iowa State University for “Risk Management Education for Women in Agriculture in Wyoming.”

**Kniss, Andrew:** \$5,250 to FMC Corporation for “Weed Control in Agronomic Crops (Continuation),” \$3,000 to BASF for “Weed Science Research in Agronomic Crops (Continuation),” and \$4,800 to Monsanto Company for “Evaluation of Warrant for Weed Control in Sugarbeet.”

**Murphy, Melanie:** \$152,631 to Fish & Wildlife Service for “Wyoming Toad Habitat Management.”

**Murphy, Melanie, and Beth Fitzpatrick:** \$500 to Sigma Xi for “Accomplishing Conservation through Classroom Citizen Science in Northeast Wyoming.”

**Rashford, Benjamin, Shannon Albeke, Roger Coupal, Robert Godby, Dannele Peck, and John Ritten:** \$1,773,894 to National Science Foundation for “Global Climate Stabilization Trade-Offs on Food Security and Ecosystem Services in the Upper Missouri River Basin.”

**Whipple, Glen:** \$521,412 to USDA National Institute of Food and Agriculture for “Wyoming Extension EFNEP,” \$8,279 for “Smith Lever Special Needs,” \$311,329 for “Smith Lever 3(b) and (c),” \$3,640 for “University of Wyoming Extension - CSRS,” and \$10,472 for “Wyoming Extension - RREA.”