



April 2017

Volume 4, Issue 2

Department of Research Centers



Research Center News

Agricultural Research Center's Contact Info:

Department of Research Centers

Barry Jacobsen, Head
Montana State University
213-A Linfield Hall
PO Box 172860
Bozeman, MT 59717-2860
(406) 994-7289

Central ARC - Moccasin

Pat Carr
(406) 423-5421

Eastern ARC - Sidney

Chengci Chen
(406) 433-2208

Northern ARC - Havre

Darrin Boss
(406) 265-6115

Northwestern ARC - Kalispell

Bob Stougaard
(406) 755-4303

Southern ARC - Huntley

Ken Kephart
(406) 348-3400

Western ARC - Corvallis

Zach Miller
(406) 961-3025

Western Triangle ARC - Conrad

Barry Jacobsen
(406) 278-7707

Message from Barry

On July 1, I will complete my 5th, and last, year of working with the Department of Research Centers faculty and staff. I want to say thank you to all of you who have worked with me to build on the earlier successes of this Department during this 5 year period. Looking back on what was supposed to be a six month, part-time job back in 2012, a lot has changed. We have seen the retirement of long time faculty such as Joyce Eckhoff and Dave Wichman and hiring of new faculty Jessica Torrior (NWARC), Zach Miller (WARC), Ligia Prezotto, (NARC), Pat Carr (CARC), Frankie Crutcher (EARC), Maryse Bourgault (NARC) and Jed Eberly (CARC). The number of faculty in the Department has grown from 10 in July 2012 to 14 today with searches underway for an agronomist at WTARC and a horticulturalist at WARC, totaling 16 faculty positions. During these 5 years, Dr. Chengci Chen moved from CARC to become Superintendent at EARC, Zach Miller along with his advisory committee "reopened" WARC as a Horticulture Research Center and Patrick Carr assumed leadership of CARC following the long tenure of Dave Wichman in this position. Contract and grant activity of DRC faculty has increased steadily each year and while final contract and grant expenditures are not yet available for FY 17, the total funded grants in 2016 exceeded \$4 million! The expertise of faculty has greatly broadened from just agronomy, entomology and animal science to now include; cropping systems, applied soil microbiology, animal and plant physiology, plant pathology and horticulture. Although all DRC faculty have outreach teaching responsibilities, formal Extension funding has gone from 1 FTE and one faculty to 3 faculty and 1.5 FTE - it is hoped this will increase to 4 faculty and 1.75 FTE in the next fiscal year.

Also during this 5 years, new facilities were developed at CARC, EARC, NARC, NWARC, WARC and WTARC and MAES Long Range Building Program requests have been featured in MSU and Board of Regent's requests to the legislature. It is critical that we update facilities at the research centers so that we have safe facilities that support modern research and that will be attractive to hiring and keeping top notch research faculty. It appears as of this writing that the 2017 Legislature will not appropriate any funding to update laboratory and greenhouse facilities requested in the MAES Long Range Building Program submitted to the Governor by the Board of Regents in 2016.

It is important to remember that MAES is the research and development agency for more than 28,000 Montana farmers and ranchers and that, along with county Extension, the seven Research Centers are the front door to MSU for the majority of Montana's citizens. I thank you all for allowing me to be part of this great research unit.

Jane and I will continue to reside in Bozeman during the warm months but will migrate annually to Mesa, AZ during the cold months. I hope to see you often and read and hear about your accomplishments and your significant contributions to the agricultural economy.

Happy Trails to All!



News from Central

The Central Ag Research Center has a new Assistant Professor of Agronomy/Soil Microbiology, Dr. Jed Eberly, who joined the department in March. Dr. Eberly comes to the department from the US Army Corp of Engineering Environmental Research Lab in Mississippi where he was a Research Microbiologist. His tenure there included five years of diverse bioremediation research in addition to work in harmful algal blooms and synthetic biology. His published research includes work in bioremediation, assessing microbial communities in soil microcosms and microbial biodiesel production. He received his PhD in Biological and Ecological Engineering from Oregon State University in 2010 and prior to that, received his BS degree in Biology

from MSU-Billings in 2004. The CARC, and the department, is excited to have him aboard!

In other news, the CARC had an unexpected visitor to the center in December. Senator Steve Daines made an ad hoc visit to speak with staff and see what work is done there. Staff had the opportunity to discuss agriculture research conducted at the center and the important role it has both locally and statewide.



CARC faculty and staff with Senator Daines



Jed Eberly, Asst. Professor of Agronomy/Soil Microbiology

The Department of Research Centers would like to thank the Montana Wheat & Barley Committee for providing 50 years of research support!

News from Northwestern

The NWARC held its 2017 Crop Update meeting in January in Kalispell. There was a great turnout of 75 farmers along with industry representatives and research results of the NWARC's 2016 crop year were presented. Dr. Bob Stougaard, Dr. Jessica Torrior, and Sherry Turner discussed Wheat Midge management, Irrigation and Nutrient management, and Stripe Rust management. Three



visiting professors from MSU also gave presentations: Dr. Phil Bruckner spoke on winter wheat development and stripe rust resistance; Dr. David Weaver presented information on the parasitic wasp and its control of the midge; and Doug Holen facilitated a grower panel discussion of the ups and downs of growing Egan, the new midge resistant wheat variety.



Markus Braaten, NWARC Advisory Committee member and State MAES representative acted as host for the event

News from Eastern

Faculty and staff from the EARC were present at a booth during the annual Mon-Dak Ag Days & Trade Show held March 2-3, 2017 at the Richland County Event Center (located at the fairgrounds) in Sidney. A "Count the number of Chickpeas in the Jar" contest was offered with the winner receiving an MSU insulated coffee cup, a MSU sunglass lanyard, and an EARC cap.



News from Northern

The Northern Ag Research Center has a new Assistant Professor of Cropping Systems, Dr. Maryse Bourgault, who joined the department in February. Dr. Bourgault comes to the department from the US University of Melbourne in Australia where she was a Postdoctoral Fellow investigating crop traits that might be beneficial under future climates with elevated atmospheric carbon dioxide concentrations at the Australian Grains Free Air CO₂ Enrichment facility. She has conducted research in several countries, including Uzbekistan, where she investigated drought tolerance and compared common bean and mungbean subjected to water stress. Bourgault also worked as an extension agronomist in Australia. She received her PhD in Plant Science from McGill University in 2009. Maryse is excited to be working in the number one state for national pulse production and we are thrilled to have her on our team!

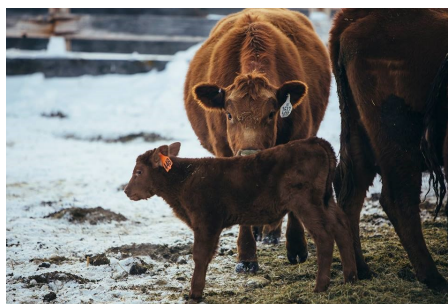


Maryse Bourgault, Asst.
Professor of Cropping Systems

The NARC brought their cows home on a sunny day in January and calving season is nearing its end. They also received new additions to their herd - red Angus cows! MSU purchased 51 head of cattle from alumni, Bob and Rita Dige of Double Tree Red Angus - Sand Coulee and is the first red Angus purebred cattle herd the university has ever owned. Darrin Boss, superintendent of the NARC said, "The purchase will enable MSU to conduct research on various issues such as heifer development, lifetime productivity, reproduction and profitability, among other economically relevant traits. This type of research will have an impact for Montana cattle ranchers for years to come." To read the full article about the herd, please visit the [Northern Ag Network](#).



Bringing the cows home 2017



Red Angus cows at NARC



Seeking shelter from the cold

News from Southern

The Weed Science program at SARC will continue to investigate hyperspectral imaging for early detection of herbicide-resistant weeds in wheat, barley, and sugar beet fields. They now have a 30-foot tractor-mounted WeedSeeker Sprayer for spot spraying weeds in chemical fallow, with 55 to 70% savings in herbicide cost compared to conventional broadcast application.

Dr. Prashant Jha recently received a grant funded by USDA-NIFA titled "Ecological management of kochia in irrigated western cropping systems" as multiple herbicide-resistant kochia continues to be a problem in Montana and US Great Plains' cropping systems. The three-year, multi-state (MSU, University of Wyoming, University of Nebraska) project will be initiated during the summer of 2017 and will investigate ecological (non-herbicidal) approaches to understand the effect of a winter wheat cover crop, tillage and irrigation timing (stale seed bed approach) on depletion of kochia seed bank prior to planting barley, sugar beet, corn, or dry beans. Hydrothermal models to quantify the effect of these ecological strategies on kochia emergence and seed bank depletion will be developed and implemented across the region.

Dr. Jha's postdoctoral research associate, Dr. Vipin Kumar, has accepted a tenure-track position as an Assistant Professor of Weed Science at Kansas State University located at the Western Kansas Ag Research Center. Additionally, Charlemagne A Lim, one of Dr. Jha's PhD Graduate students won the first place poster contest at the 2017 Western Society of Weed Science meeting. The title of the project is "Ecological fitness of dicamba-resistant kochia in the presence or absence of dicamba".



WeedSeeker Sprayer mounted on tractor

News from Western Triangle

Dr. Reddy was selected to serve as Chair for the multistate meeting – W3185 Biological Control in the Western U.S., which is scheduled to be held in Montana on October 10-13, 2018 (<http://ucanr.edu/sites/W2185/>). Traditionally, 80–100 scientists from the US, France and Canada attend this meeting and potential meeting locations include Great Falls, Whitefish, Kalispell and Polson - watch for official details regarding this meeting in upcoming months.

In addition, Dr. Reddy is organizing a Symposium on “**Pulse Crop Insect Pests and Their Management**” for the Entomological Society of America’s 65th Annual Meeting being held November 5-8, 2017 in Denver, Colorado. He also edited a book on “**Integrated Management of Insect Pests on Canola and Other Brassica Oilseed Crops**” published by The Centre for Agriculture and Bioscience International (CABI), UK, which is the only single compiled source of information on integrated management of canola and other Brassica oilseed pests. It is currently available for purchase on Amazon.

John Miller was recently promoted to Research Scientist. As a part of varietal testing program for the center, John is growing and testing few varieties of Quinoa for first time at the research center and Montana. The project titled “Testing of Quinoa (*Amaranthus caudatus* L.) Varieties in the Western Golden Triangle Area of Montana-Enhancing Its Knowledge to Growers” was funded by the Montana WSARE Professional Development Program, administered by Dr. Fabian Menalled.

A greenhouse has been built and is in operation at the WTARC. Faculty and staff from the agronomy and entomology programs have been able busy conducting indoor experiments from this spring. Drs. Etone Kenedy and Maral Etesami, along with Phil Hammermeister have begun screening for low-phosphate tolerance in spring wheat cultivars adapted to Montana ecosystems. Rama Gadi and Dr. Govinda Shrestha have begun conducting the effect of biopesticides (Jasmonic acid, neem and Actigard™) against wheat stem sawfly and testing of near isogenic lines (NILs) of wheat carrying genes against wheat stem sawfly. This latter part of these experiments are in collaboration with the MSU Plant Science Endowed Chair Dr. Hikmet Budak.



Current trial being conducted in new greenhouse facility at the WTARC

The WTARC has new researchers joining their team in April and May, including **Dr. Shabeg Briar**, who is joining the Entomology/Insect Ecology program, **Dr. Anamika Sharma**, who will work on evaluation of effectiveness of insect pathogens and trap crops for the management of wireworms on spring wheat, and **Ramandeep Kaur**, a graduate student who will be working on evaluating entomopathogenic nematodes (predatory nematodes) against wireworms for her Ph.D. program.

Current DRC Searches

Faculty

- ◆ Research Centers Department Head/Assoc. or Full Professor at MSU - Bozeman (<https://jobs.montana.edu/postings/8012>)
- ◆ Superintendent/Assoc. or Full Professor of Agronomy at the WTARC - Conrad (<https://jobs.montana.edu/postings/8105>)
- ◆ Assistant Professor of Horticulture/Tree & Small Fruit at the WARC - Corvallis (<https://jobs.montana.edu/postings/8093>)

Staff

- ◆ Research Associate at the EARC - Sidney (<https://jobs.montana.edu/postings/8456>)
- ◆ Research Associate at the NWARC - Creston (<https://jobs.montana.edu/postings/8473>)
- ◆ Research Associate at the WARC - Corvallis (<https://jobs.montana.edu/postings/8447>)
- ◆ Research Associate at the CARC - Moccasin (<https://jobs.montana.edu/postings/8489>)

MAES Field Days



MAES Field Days

NARC - Havre	June 29: 4:00 pm
CARC - Moccasin	July 12: 9:00 am
Post Farm - Bozeman	July 7: 8:00 am
NWARC - Creston	July 13: 2:00 pm
EARC - Sidney	July 19: 9:00 am
WARC - Corvallis	July 27: 4:00 pm

Department Awards

MAES released their FY17 Equipment Awards in December. Congratulations to the following faculty members in the Department of Research Centers for receiving an award this year and thanks to MAES for the continued support.

Name	Center	Amount	Award Detail
Pat Carr	CARC	\$11,000	Stripper header for combine
Pat Carr	CARC	\$15,000	Fork lift
Frankie Crutcher	EARC	\$23,165	Soil Sterilization Equipment
Ligia Prezotto	NARC	\$15,000	Calan Broadbent Feeding System
Bob Stougaard	NWARC	\$13,000	Partial funding for 1/2-ton Pick-up
Prashant Jha	SARC	\$10,125	Polaris ATV

The department was able to offer ten \$4,500 internships for selected students to have an eight-week agricultural experience at one of the center. Below is a listing of internship recipients.

2017 MAES Summer Interns

<u>Student - Center</u>	<u>Major</u>
Sarah Spear - CARC	Agroecology
Meghan Tomczyk - CARC	Environmental Science
Tavin Schneider - EARC	Plant Science
Leah Simantel - EARC	Environmental Science
Alexis Clingsmith - EARC	Agronomy
Marley Manourkian - NARC	Animal Science
Scott Christensen - NWARC	Crop Science
Michael Wilse - SARC	Biochemistry
Ketchum Wilt - WARC	Environmental Science
Gabriele Drishinski - WTARC	Ag Education

Congratulations to Department of Research Center faculty whose P&T submissions have been approved!

- ◆ Dr. Gadi Reddy from the WTARC has been promoted to the rank of Full Professor with Tenure
- ◆ Dr. Zach Miller from the WARC has been retained as Assistant Professor of Horticulture
- ◆ Dr. Jessica Torrior from the NWARC has been retained as Assistant Professor of Crop Physiology