

Blizzard Watch



Department of Plant Sciences

March 2000

1999
In
Review



Dear Friends of NDSU
Plant Sciences,

Greetings from all of us in the department and welcome to the new millennium. We all made it through Y2K and all the other bad things that were supposed to happen. We wish all of you the very best for your professional and personal lives. It is hard to believe another year has passed since I last wrote to all of you. Just when I was getting used to writing 1999 on letters and documents, it changed again. This year is especially difficult as I will have to remember four numbers to rewrite.

I hope all of you enjoy this update of the department's news.

This has been an extremely easy winter thus far, the third in a row. I believe Fargo has had about 9 inches of snow so far and only a few nights that have been below zero. Had it not been for a couple of inches just before Christmas, we would not have had any for the holidays. We only have a couple of inches on the ground now. It has been a great year for the heating bills with a lot of days in the 30's and 40's in both November and December.

I had a chance to visit with a number of you at the NDSU Blizzard Party held at the ASA-CSSA meeting in Salt Lake City. It's always great to see you. Numerous faculty, graduate students, and about 10 undergraduates attended the meeting. Several horticulture faculty, graduate students and undergraduates attended the ASHS meeting in Minneapolis this year. In addition, many of the weeds faculty and several graduate students presented papers at the NCWSS

meeting in Columbus, Ohio and the national WSSA meeting that was held in Toronto, Canada.

1999 was an interesting year for all the crop producers in the state. The weather, like most years in North Dakota, consists of a number of extremes which make a long term average -- which does not mean a lot. For much of the state, the rain patterns were completely different both in timing and magnitude than anything that I have seen in the 30 years I have lived in North Dakota. It started with good seeding conditions for a short period of time, followed by excessive rains, which continued in some parts of the state until about the first of June. As a result of the rains, many crops were sown extremely late or not sown at all. In some counties north of Minot and in northern Minnesota, only a small percentage (20%) was ever sown. It is unusual to see parts of northwestern North Dakota where all the low areas are filled with wa-



ter. It looks more like the pot-hole country of the eastern part of the state and Minnesota. I traveled across the northern part of the state between Mohall and Langdon in mid-July and only one or two fields were headed. The majority were still in early tillering stages or even less developed. I immediately told our small grains extension people to start reading up on frost damage. I was wrong for the most part. It began to rain again in September and a lot of crops were lost to sprout. I visited with one farmer just south of Minot who told me he had been able to combine only two days in September. The end result in many areas of the northwestern part of the state was by the time the crop was ready to harvest, it was ruined and many fields were burned. The most difficult part of farming right now both here and across the nation, however, are the poor prices.

Because of the excessive amount of rain we have had the past few years, Devils Lake has risen 28 feet and flooded hundreds of thousands of acres of what had

been farmland. The lake, which has no natural outlets under normal conditions, has started to drain into Stump Lake which is directly east of Devils Lake. Historically, prior to the settling of the state for crop production, it has, on occasion, risen high enough to flow into the Sheyenne River and flood the Red River Valley. The governor and state officials would like to create a drainage ditch into the Sheyenne to at least control the outlet but are threatened by lawsuits from Manitoba and Minnesota. It is a problem that seems to have no easy solution.

The overall population of North Dakota remains stagnant. Only the counties in which Fargo, Wahpeton, Minot, and Bismarck are located show major growth. Almost all of the others, with one or two exceptions, are showing a decline in population with the trend expected to continue. The major problem is that many parts of the state are directly tied to the agricultural economy. As producers leave the farm and as farms get larger, there is often no need for replacement producers.

As I indicated last year, Dr. Joe Chapman has been hired as the new president of NDSU. Dr. Chapman is the former provost at Montana State University. He assumed his duties on June 1, 1999. One of his goals is to increase faculty and staff salaries, which continue to be among the lowest in the nation. Dr. Chapman has a good strong background in the land grant system and will do a good job as presi-

dent. I have already noticed a lot of positive changes. For the first time NDSU is publicly advertising for students via billboards, t.v. and radio ads, etc.

Dr. Jim Venette has been named Associate Dean for Academic Programs for the College of Agriculture. Jim was the former interim chair of Plant Pathology. Dr. Glen Statler has returned as Chair of Plant Pathology. Dr. Gary Brewer is the new chair of Entomology.

As most of you know, our department offers a B.S. degree in both Crop and Weed Sciences (CWS) and Horticulture and Forestry (H&F). The enrollment in CWS continues to climb slightly while enrollment for H&F remains stable. Overall enrollment in the College of Agriculture decreased 14% this year. There were 51 undergraduates in H&F and 108 undergraduates in CWS fall semester. A survey at the NDSU Career Center indicated the average starting salary for a person with a B.S. degree in CWS and H&F was \$32,000 and \$22,000, respectively.

About 90% of our undergraduates intern with companies as crop consultants or with herbicide companies. One of the results of this is that students tend to work for industry upon graduation without ever considering graduate school. To combat this, the department has initiated a program to intern students in CWS and H&F who have completed their junior year with

department faculty and research projects in their area of interest. The initial group consisted of seven students. Of the seven, six have opted to attend graduate school. Four have selected NDSU for a M.S. program and two have selected other schools or are still undecided on which school to attend. The majority of the group selected had not given serious consideration to attend graduate school at the end of their junior year. The program was very successful and received praise from both faculty and students. I had high hopes for the program, but the number of students who have applied this year has dropped dramatically.



PLSC Interns - Summer 1999
 Rhonda Menze, Lisa Duppong, Sarah Gehlhar, Shana Forster, Brad Fronning, Courtney Solberg, Richard Walker II
 Not pictured Shauna Pederson

Several new faculty have been hired this year and others are being recruited. Dr. Marcelo Carena, a recent graduate from Iowa State University, has assumed leadership of the corn breeding position replacing Dr. Harold Cross, who retired. Dr. Kirk Howatt, a recent graduate from Colorado State University, replaced Dr. John Nalewaja, retired weed scientist. A search is currently underway for a potato breeder to replace Dr. Rich

Novy, who resigned to accept a position with the USDA at Aberdeen, Idaho. Interviews were held in January and February. Losing Dr. Novy was especially difficult for me as he was the first faculty member I hired as Interim Chair.



Roald Lund visiting with Rich Novy at his farewell party.

A search will be initiated soon for a faculty position in high value crop production. Dr. Murray Duysen and Dr. Don Galitz, who held partial appointments in our department, also retired. Both live in Fargo.



Murray and Roberta Duysen Retirement Reception

In addition, Dr. Norm Williams, who worked in wheat genetics and was an adjunct faculty member, retired. His position is currently vacant. I am heavily in-



involved in an initiative to refill that position and increase funding for research in the cereals research unit of the Northern Crop Science Lab here on campus. The initiative is also asking for a new USDA/ARS scientist for small grains (wheat/barley) disease research.

Our adjunct faculty also continues to change. As I indicated last year, Dr. Leonard Joppa, who worked in durum cytogenetics, retired. He will be replaced by Dr. Justin Faris, a recent graduate of Kansas State University. Justin obtained his B.S. and M.S. degrees from our department – so we know he got off to a good start. In addition, NDSU has granted adjunct status to the following in our department: Dr. James V. Anderson (plant biochemistry), a graduate of Virginia Polytech Institute; Dr. Michael E. Foley (weed biology), a graduate of the University of Illinois; Dr. Robert A. Henson (crop production), a graduate of the University of Minnesota and agronomist at the Carrington Research/Extension Center; Dr.



David P. Horvath (perennial weed physiology), a graduate of Michigan State University; and Dr. Karen L. Klotz (sugarbeet physiology), a graduate of The Ohio State University. These faculty, as well as our colleagues at the Research Extension Centers, are a crucial part of our department's research and training of students. Dr. Mark Zarnstorff, agronomist at the North Central Research Extension Center in Minot and an adjunct in our department, resigned to take a position with the National Crop Insurance Services in Overland Park, Kansas.



Sharon Ahrens at her Retirement Reception

There has been only one change in the office staff this year. I must be getting easier to get along with as I grow older and mellow. I hope that's not true. It's okay to grow older, but chairs should never mellow. Sharon Ahrens, who served as an extension secretary in our office, retired the end of February.

There have been a number of changes in the technician/research specialist staff. Steve Ellefson and John Gulleason, who worked on the barley and durum breeding projects, respectively, were both hired by Monsanto in the same week. Steve will work in soybean and John in corn. Jeff Huckle, who worked on Dr. Froberg's wheat breeding project, has resigned to work as a carpenter. All will be replaced. Rian Lee was hired as a research specialist to work with Dr. McClean. A number of research specialists have been hired using grant funds. They include Aaron Bergstrom with Dr. McClean, Jason Faller with Dr. Horsley, Penny Kianian with the potato breeding program, Sara Kleven with Dr. Berzonsky, Rachel Lone with Dr. Dahleen and Jerry Ries with Dr. Zollinger. Jerry will be in charge of conducting a weed survey in the state.

The year has also seen a change in the number of Postdoctoral Research Fellows. Dr. Nikolay Balbyshev has resigned to take a permanent position in Plant Pathology. Other new fellows include Alicia Del Blanco with Dr. Kianian, Muthusamy Manoharan with Dr. Dahleen and Lemma Mengistu Workineh and Zhaohu

Li with Dr. Messersmith. In addition, we have several new research fellows who are working for USDA adjunct faculty.

Last year I indicated that the department was attempting to establish scholarships in honor of both Drs. Lund and Nalewaja. We were successful in both instances. Dr. Lund's scholarship supports an incoming freshman, while Dr. Nalewaja's scholarship will support a graduate student in weed science. *Any additional donations to either of these scholarships would be greatly appreciated.* All told, the departmental administrators 35 undergraduate and 8 graduate scholarships for a total of \$15,000 and \$4,700, respectively. I am a strong proponent of scholarships as I received one as an undergraduate at a time when I was considering dropping out of school. This one scholarship may have changed my whole career.

Dr. Lund has taken the lead for donations to the **Jack F. Carter Endowment**. The department has established endowments for both hard red spring wheat and durum wheat breeding. Hopefully the endowments will grow to a point that they will support research in both crops.

The department graduated five Ph.D. and two M.S. students this year. There were 18 CWS graduates spring semester and 15 CWS graduates fall semester. There were seven H&F graduates – one spring semester and six fall semester.

There has been a significant increase in our graduate student numbers, especially in weed science and plant breeding and genetics. New graduate students and their advisors since last year's report are David Boehm (Berzonsky), John Davies (Berzonsky), Bradley Fronning (Kegode), Manju Karthikeyan (Franckowiak), Jerad Liedberg (Lorenzen), Sam Lockhart (Howatt), Kris Mahoney (Kegode), Dan Melaas (Deckard), Ryan Moeller (Meyer), Eric Nelson (Kegode), John O'Barr (Zollinger), Chad Ringdahl (Messersmith), Kristin Simons (Kianian), Don Vincent (Dexter) and Richard Walker (Messersmith).

The department's recipient of the Gerald Mott Meritorious Graduate Student Award from the Crop Science Society of America was Nathalie Vignaux. Nathalie is from France and is a student of Dr. Kianian. Twelve graduate students attended the 16th Annual Graduate Student Symposium at the Department of Plant Science, University of Manitoba, Winnipeg, Manitoba on March 5th. Receiving 2nd place in their presentations were David Boehm in Agronomy/Physiology and Chad Ringdahl in Weed Science.

If any of you know of any individuals who have good graduate student potential and are interested in graduate school, please have them contact our department.

Many of our plant breeders and their cooperating scientists in

other departments and the Research Extension Centers became parents this year as their children were released to face the world. These included 'Dakota Pearl,' a white chipping potato from Dr. Novy's program; 'Killdeer' oat from Dr. McMullen's program; 'Drummond' 6-row barley from Dr. Horsley's program; 'Arthur' navy bean from Dr. Grafton's program; and 'Barnes' soybean from Dr. Helms' breeding program. 'Copper Curls™' Pekin lilac was released by Dr. Herman's project. 'Alsen' from Dr. Frohberg's HRSW program was released. 'Alsen' has good scab tolerance and excellent milling and baking qualities. Its release has stirred a tremendous amount of interest. Check out the WDAY TV News report with interviews of Dr. Frohberg and Dr. Stack from the Plant Pathology Department on the departmental web page (<http://www.ndsu.nodak.edu/instruct/hammond/dept/>). *The Forum* editorial and cartoon are also printed in the *Blizzard Watch*. Take a minute to read the editorial – it makes all of us in plant science research feel good.

The decision was made to increase foundation seed of 'Alsen' to the maximum. We have over 37,000 bushels for distribution to the county Crop Improvement Associations, Minnesota, and South Dakota. This amount is several times larger than we have ever distributed before. Funds collected by the ND Crop Improvement and Seed Association will be placed in the HRSW endowment.



Congratulations!!

Our faculty and staff continue to receive a number of awards.

Dr. Roald Lund will become the second member of our department in two years to be inducted into the North Dakota Agriculture Hall of Fame. He follows Dr. Carter, who was inducted last year. "Way to go, Roald."



**Dr. H. Roald Lund
Inducted into the North Dakota
Agriculture Hall of Fame
March, 2000**



Dale Herman
Distinguished Achievement Award
For Nursery Crops

nology held in Jacksonville, Florida. He also received the 1999 Distinguished Achievement Award from the Bean Improvement Cooperative.



Dr. Phil McClean,
Innovative Excellence in Teaching,
Learning and Technology Award
and
Bean Improvement Cooperative
Distinguished Achievement Award



Larry Chaput
R. L. Wodarz Award Recipient

Brenda Deckard, who works with our undergraduate teaching program, was the recipient of the 1999 Mary McCannel Gunkelman Award. This award is presented each year to the person on campus who has made the most significant and unselfish contribution to making NDSU a happy environment for the enjoyment of students.

Dr. Chiwon W. Lee was honored with a citation from the ASHS for distinguished service as Associate Editor, Hort Science, 1996-1999.



Brenda Deckard,
recipient of the Gunkelman Award,
and Patricia Jensen,
Vice Pres., Dean, & Director,
Agricultural Affairs

Dr. Elias Elias was awarded the “Durum Man of the Year” by the U.S. Durum Growers Association at their meeting in Minot.

Larry Chaput, research specialist with Dr. Dale Herman, received the R. L. Wodarz Award, in recognition of outstanding contributions to the field of horticulture in North Dakota at the North Dakota State Horticultural Society annual meeting.

Dr. Dale Herman was presented the American Society for Horticultural Science (ASHS) “Distinguished Achievement Award for Nursery Crops” at the 1999 meeting.

Dr. Phil McClean was awarded the 1999 Innovative Excellence in Teaching, Learning and Technology Award at the 10th International Conference on College Teaching, Learning and Tech-

Sharon Ahrens, Kay Carlson and Bryce Farnsworth joined the NDSU Quarter Century Club. Others honored for years of service as state employees included Jerry Johnson (30 years), Eileen Buringrud (25 years), Jim Faller (20 years), Jeff Miller, Kathy Christianson and Louise Heinz (15 years), Cheryl Kimberlin, Iris Flatland, and Josef Maianu (10 years), and Wayne Sargent (5 years). A party was held in the department to honor these individuals as they reached these milestones.

Each year the College of Agriculture, Extension Service and Ag Experiment Station present awards to faculty and staff. The 1999 recipients were announced on March 1, 2000 with a reception following in our atrium. There were 33 nominees for the nine categories. Dr. Dwain Meyer received the H. Roald and Janet Lund Excellence in Teaching Award, Senior Career, and Dr. Elias Elias received the Larson/Yaggie Excellence in Research Award, Early Career.



Dr. Dwain Meyer,
recipient of the H. Roald and Janet Lund Excellence in Teaching Award, Senior Career, and Dr. James Venette, Assoc. Dean for Academic Programs, College of Agriculture

Dr. Jim Lorenzen is on sabbatical in Thailand. He will return in April.

We also had a party for Dr. Carter on his 80th birthday. Dr. Carter has always been an inspiration and role model for many of the faculty as he was for many of you. He regularly works about 30 hours a week. We plan to have another party when he turns 85. All of you are invited.



Dr. Jack and Imogene Carter
80th Birthday Celebration



Please keep us posted on information that may be of interest. My e-mail address is aschneit@plains.nodak.edu and our departmental fax number is 701-231-8474.

You can also update information for our mailing list on our home page at the NDSU website (WWW.ndsu.nodak.edu/instruct/hammond/dept/).

If you are in the area, stop by and visit. All of us in the department extend our best wishes for 2000.

Al Schneiter, Chair



Dr. Elias Elias
"1999 Durum Man of the Year"
and
Larson/Yaggie Excellence in Research Award, Early Career

Our fall picnic was held on August 27th at Yunker Farm just north of campus on 28th Avenue. Our winter social was held at the new NDSU Alumni Center (just north of the Bison Turf on University Drive). In addition to that, we have a pie social, chili feed and other events during the school year.



Jack's Corner

First, thank you for the holiday messages that came from you to the department or to us personally. We appreciate them very much and wish to "keep track" -- please tell us more about yourself and your families. Send pictures, even if you may have aged since we last met -- we all do! I passed 80 years last October, 1999!

Edgar and Patricia Haro of Mexico (M.S. in durum wheat breeding in 1981-83) visited in late February. He is a candidate for a sunflower breeding position with Pioneer in Fargo-Moorhead.

I've survived 13 years of retirement successfully, I believe. I'm reading some papers in agronomy, food and nutrition science, and "talking flax" for food and

feed for poultry, new feeder cattle, pets (companion animals), etc.

I lectured about flax-as-food to dieticians twice at Concordia College, Moorhead, in 1998-99, and prepared a video about flax for the annual MARKETPLACE at Bismarck.

I answer hundreds of letters and phone calls, now e-mail with Jennifer Moe as my 'middle man' about flax as food or feed for animals.

I'm President of the Flax Institute and the next two-day program is March 23-25, 2000 at Fargo, the 58th Flax Institute. We will have a program of 28 papers on the latest in flax research and promotion for food, feed, and coatings. I also serve as a "flax consultant" to the North Dakota Oilseed Council.

I continue to be involved in research and promotion of flaxseed and flaxseed oil as possibly beneficial to human nutrition and health because of the high fiber, linolenic acid content (omega 3) and anticarcinogenic lignans that will have some interesting and valuable developments in the future. People in the countries of some former international students may have consumed flaxseed for hundreds of years, or should if they have not, for the omega 3 and fiber benefits.

I urge you to watch the health press and scientific journals about flaxseed and oil as functional foods, AND buy and con-

sume ground flaxseed for better nutrition.

Mostly at home I have been doing more cooking than formerly, some maintenance, gardening, and fishing. I grafted 9 apple trees to sell at Bidder's Bowl and for special friends, and attended Bidder's Bowl (raises funds for NDSU Development Foundation) in October. Also, we attend home games of Bison football and basketball, especially the lady basketball Bison, Div. II National Championships in 1994, 1995, 1996, and maybe in 2000.

I was honored by induction into the North Dakota Agriculture HALL OF FAME, March 6, 1999. This award is a very nice recognition of the contribution of research, teaching, and extension by us in academia to the agricultural enterprise in North Dakota in which many of us have participated and contributed with our knowledge and skills.

Imogene entertained international women for their February 1999 meeting at our home -- like "old times" -- and will soon again in 2000. She still has imbalance problems from a shingles infection 4 ½ years ago. A recent trip to Mayo Clinic was not helpful.

In retrospect, many of you have influenced our work and lives favorably, and we yours, we hope. Please stop to see us as you pass this way and best wishes for a HAPPY and HEALTHFUL 2000.

Dr. and Mrs. Carter

**Forum Editorial:
NDSU Agricultural Research
Delivers**
The Forum - 02/10/2000

Agricultural research works. And no one does it better than the scientists at North Dakota State University.

The latest triumph came this week when the Agricultural Experiment Station at NDSU announced the release of a new scab-resistant hard red spring wheat variety. Called Alsen after the northeastern North Dakota town, the variety shows better resistance to several fungal diseases than nearly all commercial varieties now on the market.

This is a major development for Northern Plains grain farmers who have been losing millions of dollars to scab and other fungus diseases because of several years of abnormally wet growing seasons. The best estimates suggest producers have lost \$800 million in reduced yields alone. Alsen has the potential to cut losses as much as \$100 million a year, according to estimates made by NDSU's plant sciences department.

It's difficult to quantify the positive impact of the researchers' success. But the story of the Alsen variety confirms the value of focused, longterm scientific attention to a real farm problem.

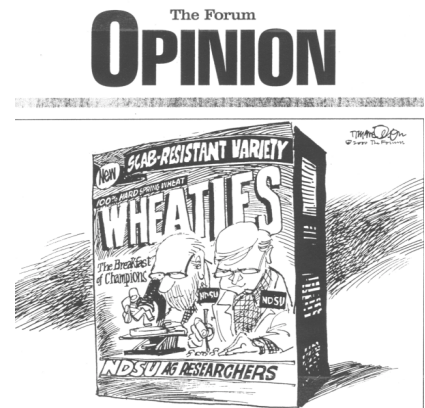
The search for a better scab resistant wheat variety began more than 15 years ago when NDSU plant pathologists observed scab symptoms in fields. Scab resis-

tant breeding material was obtained from China. Genetic experiments began the transfer of the resistance trait to NDSU varieties. Using conventional plant breeding techniques, Alsen was the result.

What on the surface looks like a simple process was, in fact, a complex, concentrated effort to develop a wheat variety that would resist diseases that have devastated yields in northeastern North Dakota and elsewhere.

In farm country, ag researchers are the unsung heroes. They do their work in fields, test plots and laboratories without fanfare, without media attention, and often without the full appreciation of farmers who eventually will reap the benefits.

Applause and appreciation to spring wheat breeder Richard Frohberg, plant pathologists Robert Stack and Marcia McMullen, cereal scientist Truman Olson, and any others at NDSU who had a part, no matter how small, in the success of the Alsen research. (Forum editorials represent the opinion of Forum management and the newspaper's Editorial Board.)





Plant Sciences Faculty

Schneider, A. A. Prof. & Chair (*crop production*)
 Berglund, D. R. Prof. (*ext. agr., row crops, specialty crops*)
 Berzonsky, W. A. Asst. Prof. (*HWS, spec./sawfly wheat brdg.*)
 Carena, M. J. Asst. Prof. (*corn breeding and genetics*)
 Cheng, Z.-M. Assoc. Prof. (*woody plants, biotech.*)
 Deckard, E. L. Prof. (*crop physiology*)
 Dexter, A. G. Prof. (*ext. weed phys., sugarbeets*)
 Elias, E. M. Assoc. Prof. (*durum wheat breeding*)
 Franckowiak, J. D. Prof. (*2-row barley breeding, genetics*)
 Frohberg, R. C. Prof. (*HRS wheat breeding, genetics*)
 Grafton, K. F. Prof. (*dry bean breeding*)
 Hammond, J. J. Prof. (*flax/crambe brdg, computer prog.*)
 Helms, T. C. Assoc. Prof. (*soybean breeding, genetics*)
 Herman, D. E. Prof. (*woody plants, ornamentals*)
 Horsley, R. D. Assoc. Prof. (*6-row barley brdg, genetics*)
 Howatt, K. A. Asst. Prof. (*weed science-annual weeds*)
 Jackson, M. B. Ext. For. (*extension forestry*)
 Johnson, B. L. Asst. Prof. (*sunflower, minor, new crop prod.*)
 Kegode, G. O. Asst. Prof. (*weed biology & ecology*)
 Kianian, S. F. Asst. Prof. (*HRS, durum wheat germ. enhanc.*)
 Lee, C. W. Assoc. Prof. (*ornamentals, turf/biotech.*)
 Lorenzen, J. H. Assoc. Prof. (*potato physiology*)
 Lym, R. G. Prof. (*perennial weed control*)
 Maan, S. S. Prof. (*wheat genetics, cytogenetics*)
 McClean, P. E. Prof. (*dry bean genetics, biotechnology*)
 McMullen, M. S. Assoc. Prof. (*oat breeding and genetics*)
 McWilliams, D.A. Crop Prod. Spec. (*ext. corn/soybean*)
 Messersmith, C. G. Prof. (*weed science, physiology*)
 Meyer, D. W. Prof. (*forage production and physiology*)
 Peel, M. D. Asst. Prof. (*ext. small grain prod., var. sel.*)
 Smith, R. C. Prof. (*extension horticulture/turfgrass*)
 Spilde, L. A. Assoc. Prof. (*seedstocks director*)
 Thostenson, A. Ext. Spec. (*pesticide program spec.*)
 Whited, D. A. Prof. (*genetics teaching*)
 Zollinger, R.K. Assoc. Prof. (*extension weed control*)

Adjunct Professors

Anderson, J. V. USDA (*plant biochemistry*)
 Campbell, L. G. USDA (*sugarbeet genetics*)
 Carr, P. M. Dickinson Res/Ext Center (*sustainable ag.*)
 Dahleen, L. S. USDA (*barley genetics, biotechnology*)
 Foley, M. E. USDA (*weed biology*)
 Henson, R. A. Carrington Res/Ext. Center (*crop prod.*)
 Horvath, D. P. USDA (*perennial weed physiology*)
 Jan, C. C. USDA (*sunflower cytogenetics*)
 Jauhar, P. P. USDA (*wheat cytogenetics*)
 Klotz, K. L. USDA (*sugarbeet physiology*)
 Lulai, E. C. USDA (*potato physiology*)
 Miller, J. F. USDA (*flax and sunflower genetics*)
 Seiler, G. J. USDA (*sunflower/sugarbeet germplasm*)
 Sowokinos, J. R. USDA (*potato physiology*)
 Suttle, J. C. USDA (*potato physiology*)

Professor Emeritus/Retired

Askew, R. G. Prof. Emeritus (*extension horticulture*)
 Boe, A. A. Prof. Emeritus (*veg. brdg/tissue culture*)
 Carter, J. F. Prof. Emeritus (*flax utilization*)
 Cross, H. Z. Prof. Emeritus (*corn genetics, breeding*)
 Duysen, M. E. Prof. Emeritus (*cellular regulation*)
 Foster, A. E. Prof. Emeritus (*barley brdg., biometrics*)
 Galitz, D.S. Retired Prof. (*physiology*)
 Holland, N. Prof. Emeritus (*fruits, woody plants*)
 Joppa, L.R. Retired Adj. Prof., USDA (*res. gen., durum*)
 Lana, E. P. Prof. Emeritus (*vegetable crops*)
 Lund, H. R. Prof. Emeritus (*potato brdg./genetics*)
 Nalewaja, J. D. Prof. Emeritus (*weed science, physiology*)
 Nelson, D. C. Prof. Emeritus (*potato physiology*)
 Smith, G.A. Retired Adj. Prof., USDA (*sugarbeet gen.*)
 Smith, G. S. Prof. Emeritus (*wheat breeding*)
 Williams, N.D. Retired Adj. Prof., USDA (*wheat:rust gen.*)

Postdoc. Research Fellow/Visiting Scientists

	Project leader, Country, Area of research
Badaruddin, M.	Meyer (Bangladesh - <i>crop rotation</i>)
Christoffers, M.	Messersmith (<i>weed/molecular biol.</i>)
Del Blanco, I. A.	Kianian/Berzonsky (Argentina - <i>HWS & durum FHB res.</i>)
Gu, X.	Foley (PRC - <i>weed biology</i>)
Guo, Y.	Cheng (PRC - <i>molecular biology</i>)
Lemma, Mengistu	Messersmith (Ethiopia - <i>weed mol. biol.</i>)
Li, Z.	Messersmith (PRC - <i>weed physiology</i>)
Manoharan, M.	Dahleen (India - <i>barley genetics/biotech.</i>)
Nadella, D.	Foley (India - <i>weed biology</i>)
Nandula, V.	Messersmith (India - <i>weed physiology</i>)
Woznica, Z.	Messersmith (Poland - <i>weed sci/herb adj.</i>)
Xu, X.	Elias (PRC - <i>durum wheat breeding</i>)

Office Staff

Buringrud, Eileen	Moe, Jennifer
Cattanach, Letha	Odegaard, Mary Beth
Erdmann, Tammy	Perrin, Char
Flatland, Iris	Welter, Melissa
Heinz, Louise	



Technicians/Research Specialists

Anderson, Chad (HRSW)
Baumann, Robert (oat breeding)
Berg, Michelle (weed science)
Bergstrom, Aaron (WWW site designer)
Birdsall, David (wheat breeding/USDA)
Bresnahan, Gail (weed science)
Carlson, Kay (wheat cytogenetics)
Chaput, Larry (woody plants)
Christianson, Katheryn (perennial weeds)
Ciernia, Mark (weed control)
Davidson-Harrington, Janet (weed science)
Deckard, Brenda (student services officer)
Erickson, Ann (potato breeding/genetics)
Faller, James (HRS wheat breeding)
Faller, Jason (barley breeding)
Farnsworth, Bryce (potato breeding)
Fitterer, Scott (weed science)
Genoch, Roger (barley breeding)
Green, Marci (barley breeding)
Gregoire, Pete (crop physiology)
Hauf, Darrin (dry bean breeding)
Hegstad, Justin (wheat germplasm enhancement)
Johnson, Gerald (durum wheat breeding)
Kianian, Penny (potato breeding/genetics)
Kimberlin, Cheryl (plant physiology/USDA)
Kleven, Sara (HWSW)
Klindworth, Daryl (wheat genetics/USDA)
Lafta, Abbas (potato physiology)
Larson, Wayne (potato physiology)
Laschkewitsch, Barb (vegetables & perennials)
Leach, Gene (hard spring wheat)
Lee, Rian (dry bean genetics/biotechnology)
Lindberg, Lyle (flax breeding)
Lone, Rachel (barley genetics/biotechnology)
Luecke, John (sugarbeet weed control)
Maianu, Josef (seedstocks)
Mark, Sandra (weed science)
Martin, Larry (soybean breeding)
Miller, Jeffrey (potato physiology/USDA)
Norby, Wayne (forage crop production)
Pederson, Jeremy (weed science)
Peterson, Paula (crop production)
Rehder, Dale (sunflower breeding/USDA)
Ries, Jerry (weed survey)
Roach, Ron (weed control)
Sargent, Wayne (molecular biology)
Schroeder, Galen (foundation seedstocks)
Schwalbe, Mike (potato breeding)
Stancyk, Stan (durum breeding)
VanderWal, Jody (dry bean breeding)
Wanner, Duane (corn breeding)
Wijetunga, Theja (crop physiology)

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Boehm, David	Berzonsky
Bosela, Michael	Cheng
Bruniard, Jose (Argentina)	Miller
Dai, Wenhao (PRC)	Cheng
Dale, Trevor	Dexter
Davies, John (Australia)	Berzonsky
Fronning, Bradley	Kegode
Garcia, Gioconda (Ecuador)	Horsley
Gelin, Robert (Haiti)	Elias
Gonzales, Jose Luis (Spain)	Elias
Gu, Weisong (PRC)	Cheng
Kalavacharla, V. (India)	McClellan
Karthikeyan, Manju (India)	Franckowiak
Lamb, Kenneth	Johnson
Liedberg, Jerad	Lorenzen
Lockhart, Sam	Howatt
Mahoney, Kris	Kegode
Melaas, Dan	Deckard
Moeller, Ryan	Meyer
Nelson, Eric	Kegode
O'Barr, John	Zollinger
Oltmans, Shannon	Zollinger
Otto, Carla	Kianian
Ramsdale, Brad	Messersmith
Ringdahl, Chad	Messersmith
Roehl, Joel	Messersmith
Rojas, Gonzalo (Chile)	Novy
Rothe, Ines (Germany)	Dexter
Sagredo, Boris (Chile)	Lorenzen
Saha, Malay (Bangladesh)	Lorenzen
Simons, Kristin	Kianian
Urrea, Carlos (Colombia)	Horsley
Varberg, Jordan	Deckard
Vignaux, Nathalie (France)	Kianian
Vincent, Don	Dexter
Walker, Richard	Messersmith
Wentz, Mary	Horsley
Zhou, Jing Kai (PRC)	Deckard

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