

# BLIZZARD WATCH

Department of Plant Sciences

Dear Friends of NDSU  
Plant Sciences:

March 1998

What would a *Blizzard Watch* be like if the chairman of Plant Sciences could not complain about the weather. Guess what - I am not going to whine and whimper about our weather this year. It has been a gorgeous fall and winter thus far. The temperature the past 4-5 weeks has typically hovered between 20° at night to 30-35°F during the day. The really great news is that I am talking ABOVE 0°. Last Winter's record of 116 inches of snow (average is 39 in.) and the devastating flood that followed is just a bad, but still vivid memory. Last winter culminated with a freezing rain/blizzard storm on April 5th and 6th that many of us will remember for a long time. The late storm was especially bad for the young calves that had just been born. Approximately 123,000 cattle, mostly calves, perished last winter. All told, 16% of the state's cattle perished during the winter. The National Guard was called out to help bury all the dead livestock.

The winter was a real ordeal for those living in the country and to a lesser extent to those living in the

larger cities. Following the April storm, many power poles snapped and some towns and farms were without electricity for 2-3 weeks. In the city, our lives were never really threatened except when you came to an intersection and you had to guess if someone was coming from the other direction. Needless to say, the auto body shop business was booming.



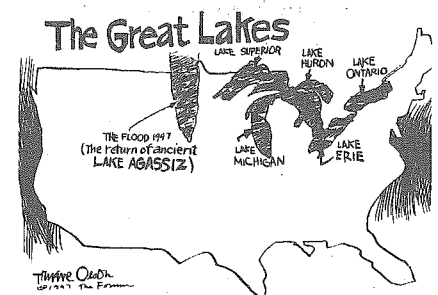
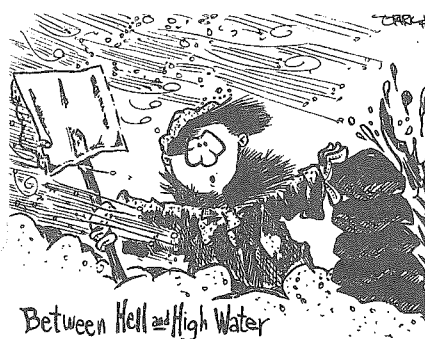
The April blizzard occurred at the same time that the Red River was beginning the first of several crests. At Wahpeton, people were sandbagging against a flood during the blizzard. Where else but North Dakota? Fortunately the cooler temperatures from the storm slowed the melting process.

Fargo was spared a lot of flood damage, although we were the feature of the national nightly news for quite a long period. The university was closed several days so that students, faculty, and staff could go sandbag. I don't know how many of you can recall the large dike by Island Park near what was St. John's Hospital, but the water reached the top and sandbags

were actually placed on the top of the dike.

Most of the damage to Fargo was in the Oak Grove area and in some suburbs in south Fargo. Tough times and times of crisis, however, always brings out the best in people, especially in the heartland. Thousands of citizen volunteers from Fargo and surrounding communities spent days, weekends, and nights filling and carrying sandbags and walking the dikes at night to make sure no leaks occurred. To my knowledge, Burton Johnson was the only one in the department who received major flood-related damage. His house north of Moorhead was destroyed and a new one (on higher elevation) is being built on the same site.

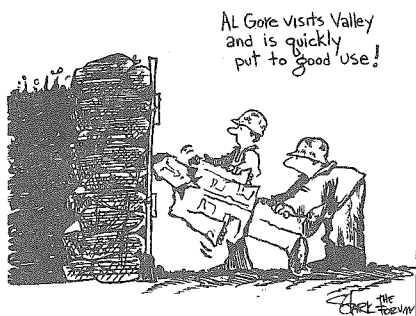
Grand Forks was not as lucky as Fargo. The dikes were breached and the city was evacuated. I recently heard that it was the largest evacuation in U.S. history. Approximately 50,000 people were forced to leave their homes. Many moved to surrounding towns and cities and many were taken in at the



Grand Forks Air Force Base. UND closed early, as did all of the Grand Forks high schools. To add insult to injury, several buildings in downtown Grand Forks burned. Firemen were unable to reach the buildings because of the flood, so water was dropped from a helicopter. I visited Grand Forks in late May and the boulevards were piled high with discarded washers, dryers, beds, sheet rock, stuffed animals, and the list goes on and on. Many people lost their homes along with all their personal belongings. It was one of the most depressing and discouraging sights I have ever seen. As would be expected, the end of the flood spurred a building boom in Grand Forks that still continues.

I will scatter some flood pictures throughout this newsletter.

Statewide, about 1.1M acres could not be sown because of flooded fields. There was about \$27M in building damage and more than 400,000 bushels of stored wheat and



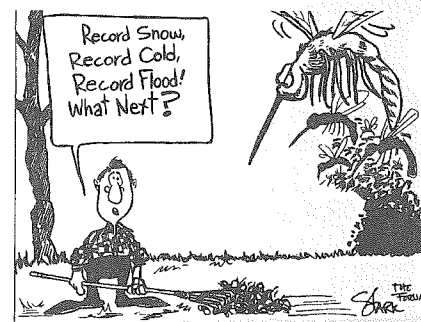
barley were lost. Fortunately, that is all behind us and just a bad memory we can tell our children and grandchildren. Good Grief!! I just realized I end up whining and complaining to all of you even when the weather is good.

In spite of an extremely late spring, crops across the state were generally very good. Wheat and barley scab plagued us again. The disease has caused hardship for many farmers

and has resulted in major shifts of crop acreages. A lot of producers especially in the NE and NC part of the state are looking for alternate crops. Much of the void will be filled by soybean, corn, canola, and sunflower depending upon the specific part of the state in which they are best adapted. We are still a couple of years away from the release of a HRSW that shows some level of tolerance. The process will take much longer until durum and barley reach that same stage of the process. Williams and Mountrail Counties, both in NW North Dakota, are now the major producers of durum. The durum acreage in NE Montana has also increased dramatically.

The last legislature passed laws which established a research board to manage the experiment station. The board consists of producers and ranchers from different parts of the state, the directors of the experiment station and extension service, the vice president of agriculture and the president of NDSU. The board controls the budgets and will make many of the decisions relative to the direction of the experiment station and agricultural research in North Dakota. Also established was a research fund of about \$1M per year from which NDSU researchers can write grants. Some of these grants will be matched by commodity groups. Details are still being worked out but the amounts available for each commodity are based on their relative importance in the state, e.g. approximately 70% crops and 30% livestock. Since wheat is 40% of the state's agricultural income, that amount of the fund will be available for wheat research, barley 11.9% etc. Below a certain point, crops with smaller acreage will be combined. This will provide some much needed funds for some of the department's research projects. The members

of the board are now on a fast-track learning curve as they try to understand all aspects of the breadth and scope of the experiment station. I sympathize with them. I have been at NDSU most of my career and I still do not know or understand all of the workings in the crops area, let alone livestock, economics, etc. The board should provide the experiment station increased credibility with the legislature when money for increased funds and new initiatives are requested. This board is the first of its kind in the nation and a lot of producers, ranchers, and administrators in other states are

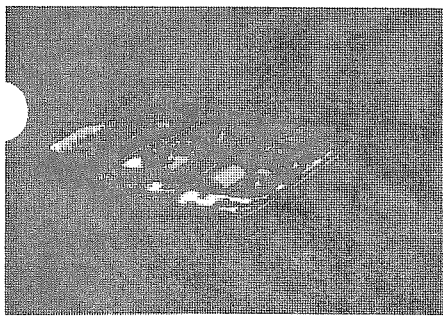


looking to North Dakota to see how this experiment works. If it is successful, it would not surprise me to see other states follow suit.

A very positive action from the legislature was the authorization for the department to hire a second wheat breeder. After a national search and extensive interviews of four outstanding candidates, Dr. Bill Berzonsky joined our faculty in February. Dr. Berzonsky has a Ph.D. from the University of Missouri and was recently involved in wheat breeding at Purdue. Dr. Berzonsky will expand the sawfly wheat breeding, hard white spring wheat breeding, and breeding of speciality hard red spring wheats. All of these are minor aspects of Dr. Frohberg's current breeding program. The hiring of a second wheat breeder will also allow for someone to serve in a carryover capacity for

Dr. Froberg when he retires and his replacement can be hired. The legislature also provided funding for durum quality position in Cereal Science. Dr. Frank Manthey, who was a postdoc in our department, has been hired for that position.

Now the news from NDSU. Dr. Patricia Jensen was selected as Vice President and Dean of Agricultural Affairs and began work July 1, 1997. I have found her extremely pleasant and good to work with and she represents NDSU extremely well. Dr. Glen Statler, Chair of the Plant Pathology Department, is still the Interim Assoc. Dean and Director, College of Agriculture, a search will probably begin soon. Dr. Todd resigned as Director of the Experiment Station



*Water surrounds a farmstead N. of Fargo  
Photo by Garry Smith*

in August and a national search for a replacement is under way.

Greg Dahl, who held the position of extension pesticide training coordinator, left our department to join Cenex Land O'Lakes in southeastern Minnesota. Andrew Thostenson replaced Greg and joined us February 1<sup>st</sup>. Andrew has a M.S. from the University of Idaho and was previously a county agent in Pembina County.

The department is currently conducting a national search for a faculty member to teach crop production classes and conduct

research in sunflower, alternative, and new crops. This is the position that I have held since I came to NDSU. Unfortunately, we have not been able to obtain permission to replace Dr. Bill Ahrens who dealt with weed research in reduced tillage. The department brought Dr. Ahrens back from China in January 1998 to teach his class on "Fate and Action of Herbicides". The class encompassed all information provided in a regular semester but was covered in about two weeks. None of our faculty have the expertise to teach the class. About seven graduate students took the class which is taught alternate years. The replacement of Dr. Ahrens is still a very high priority in the department and we will continue to push for his replacement. Weeds are just too important a crop production factor for our producers not to fill this position and expand the entire area of weed research.

In late June 1997, the department underwent an external review by USDA and university researchers. The three-day review included an evaluation of all aspects of the department: teaching, service, outreach, and research. The review team was very complimentary of the department. Most of us in our department already knew our strengths and our weaknesses. It was good, however, to have an outsider's perspective to let those of us in the department know we are on the right track in what we are trying to do and improve. Overall, it was a good experience. Needless to say, I was and still am extremely proud of our faculty, staff, and students.

We graduated 7 M.S. and 6 Ph.D. students during the 1997 Commencement. Those receiving M.S. degrees and their advisors were: Tony Capps (Herman), Marci Green (Horsley), Doug Jorgenson

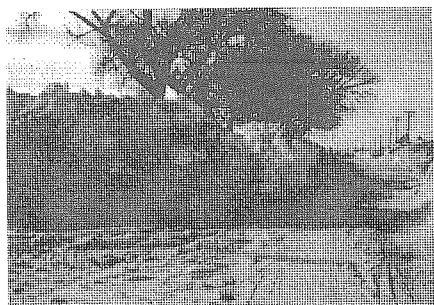
(Spilde), Thomas Kleven (Zollinger), Lestari Ujianto (Hammond), Jon Warner (Dexter), and Peng Zhou (Ahrens). Those receiving Ph.D. degrees were Dain Bruns (Nalewaja), Oswald Chicaiza (Franckowiak), Victor Gonzalez (Grafton), Jim Harbour (Messersmith), Shanqiang Ke (Lee), and Molly Welsh (Grafton).

Our number of graduate students, like that of many universities, continues to decline and as I indicated last year I am not sure what to do about it. There are so many jobs available for undergraduates that many good students are going into the job market rather than continuing their education. This year we have only 29 graduate students of which 15 are international students representing 10 different countries.

New graduate students since our last report and their advisors are: Gioconda Garcia (Horsley), Mary Gill (Horsley), Shannon Oltmans (Novy), Ines Rothe (Dexter), and John Sterling (Lym). The department also had Zenon Woznica and Xiaodong Song here as visiting scientists.

Postdoctorates during 1997 were Nikolay Balbyshev, Albert Fisher, Frank Manthey, Asfaw Mesfin, Ben Moreno-Sevilla, and Mark Rivkin. Ben Moreno-Sevilla left in May to join HybriTech International at Boise, Idaho. Albert Fisher resigned in October to take a position with the Department of Vegetable Crops at the University of California at Davis. Frank Manthey, as I mentioned earlier, joined the Cereal Science Department in February 1998. The weeds group has just hired three postdocs, Mike Christoffers from University of Missouri-Columbia, Vijay Nandula from Virginia Polytechnic Univ., and John Zhang from Ag. and Agri-Food Canada.

In contrast to the graduate program, undergraduate numbers are steady. We have 75 undergraduates in the Crop and Weed Sciences option and 45 in the Horticulture and Forestry option. Last spring our numbers in the two disciplines were 82 and 58 respectively. In the Crop and Weed Sciences option we have about two job opportunities for each graduate. The job market is a little less strong in Horticulture and Forestry, but our graduates are finding jobs. The undergraduate Plant Sciences Learning Center in the basement of Loftsgard Hall is nearing completion. We still have some furniture to be built for the horticulture classes, but that is about all. We currently are teaching some of the labs using CDROM and the campus computer system, replacing some of the audio tutorial slide projector tape sets many of you are probably familiar with.



15<sup>th</sup> Ave. N. of Loftsgard-one lane only  
Photo by Shirley Bertsch

Several of our plant breeders, their cooperating scientists in other departments, research centers, and their support staff became parents again this year. Dr. Elias Elias released 'Belzer' durum. Belzer was named after the late Terry Belzer, a durum producer near Cando who was instrumental in NDSU receiving monies for durum research. 'Frontier' is a new pinto bean variety released by Dr. Ken Grafton, while 'Traill' is a new soybean variety released by Dr. Ted Helms.

In other news, Dr. Carter and Dr. Mike McMullen will co-teach 'Grain Grading' one more time. Next year, Mike is on his own.

The 16th Annual Crops and Soils 'Blizzard Party' was held on October 28 during the ASA meetings in Anaheim, California. About 70 current and former faculty and graduate students from our department and the Soil Sciences Department enjoyed the opportunity to renew acquaintances and visit with friends. It is always a pleasure to visit and see so many of you there. The numbers of faculty and students attending the ASA meetings was up this year. A total of seven faculty, three research specialists and two graduate students attended the meetings. An undergraduate from the Crops and Soils Club also attended. I was also very honored to be named ASA Fellow at the meetings.

The 1997 North Central Weed Science Society meetings were held in Lexington, Kentucky this year. A total of four faculty, one visiting scientist, one postdoc, four technicians/research specialists, two graduate students and one graduate research fellow attended. A total of 12 presentations or posters were made by our department. Dr. Richard Zollinger was selected as the 1997 recipient of the North Central Weed Science Society Distinguished Achievement Award in Service. Chris Mayo, a graduate research fellow, took 1<sup>st</sup> place in the Poster Contest and Emilie Bergeson, a graduate student, took 2<sup>nd</sup> place in the Poster Contest. Brad Ramsdale took 2<sup>nd</sup> place in the graduate student oral presentations.

The number of Plant Sciences faculty, staff and students involved in professional organizations and in service at the national, state, regional, university, and college

level and those receiving awards continues to be very high.

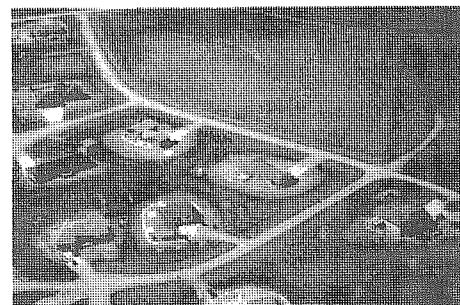
The national Weed Science Society of America meeting was held in Orlando, Florida in early February. Dr. Cal Messersmith was elected President of the WSSA in February, 1997.

Dr. Rod Lym is president of the Western Society of Weed Science. There was tremendous interest by faculty, technicians, and students to attend the meeting in March. You should hear some of the reasons for attending that I received. I suspect the fact that the meeting was in Hawaii may have something to do with it.

Rod and Cal will do a great job as president of these two groups, a favorable reflection on our department and NDSU.

Dr. Rich Zollinger received the Amber Award from the U.S. Durum Growers Association in November.

Dr. Alan Dexter and former faculty members Charlotte Eberlein and Steve Miller were named as Fellows at the WSSA meeting to be held in Chicago in February, 1998. CONGRATULATIONS TO ALL THREE OF YOU!



South side of Fargo, Rose & Meadow Creek  
Photo by Garry Smith

Each year the College of Agriculture, Experiment Station and the Extension Service honor faculty and staff. Dr. Duane Berglund won the AGSCO

Excellence in Extension Award, Senior Career. Dr. John Nalewaja won the Eugene R. Dahl Excellence Research Award, Senior Career. Myron Thoreson won the Technical Staff Award for Excellence and John 'Lenny' Luecke won the Professional Staff Award for Excellence.

NDSU faculty and USDA researchers were significant contributors to Sunflower Production and Technology, Agronomy Monograph No. 35. The monograph was edited by Al Schneider and published by ASA, CSSA, and SSSA. Dr. Jerry Miller and Dr. Dwain Meyer in our department were associate editors.

Dr. Duane Berglund received the Distinguished Service Award from Epsilon Sigma Phi, a professional organization for extension workers in North Dakota.

Dr. James Lorenzen and Dr. Zong-Ming Cheng received promotion and tenure and Dr. Chiwon Lee who came to NDSU as an associate professor received tenure.

Dr. Don Galitz received the 1997 Samuel N. Postlethwait Award from the Botanical Society of America's Teaching Section.

Dr. Prem Jauhar, research geneticist with the USDA-Agricultural Research Service at Northern Crop Science Laboratory, served on the International Scientific Advisory Committee for the XIII International Chromosome Conference in Italy in September.

Dr. Chiwon Lee and Dr. Rich Novy were elected to the University Senate. Dr. Lund is on the Senate Executive Committee; Dr. Dale Herman is the Senate Program Review Committee alternate; Dr. Dwain Meyer is on the Senate

Scheduling and Registration Committee; and Dr. Ken Grafton was elected to serve on the College of Agriculture PTE Committee. Dr. Rich Horsley is on the Nominating Committee for the College of Agriculture Curriculum Committee.



South Fargo

Photo by Garry Smith

Dr. Larry Campbell was presented with an outstanding research award by the Sugarbeet Research and Education Board of Minnesota and North Dakota in December.

At the ASA meetings in Anaheim, Dr. Carl W. Johnson, who received his M.S. in plant breeding in 1967 was the recipient of the National Council of Commercial Plant Breeders Genetics and Plant Breeding Award for Industry. Working for the California Rice Institute Foundation, he has released 24 varieties which are grown on 96% of the California rice acreage. Actually some of us are quite disappointed—let's work hard on the remaining 4% Carl! Seriously, you and all of our graduates are a credit to North Dakota, NDSU, and Plant Sciences.

Christopher D. Green, a Soil Science student, was named the 1996-97 outstanding senior at NDSU by the American Society of Agronomy.

The department is launching a campaign for the J.F. Carter Endowment to provide a source of funds for the permanent support of a teacher/researcher in crop

production. Dr. Lund is the leader of this drive. A brochure is included with this letter.

The Graduate Student Symposium, which involves Plant Sciences graduate students from NDSU, the University of Manitoba, and the University of Saskatchewan, was held at NDSU in March.

One of our graduate students, Mary Gill, was named Cross Country Athlete of the Year for 1997. She was the North Central Region Athlete of the Month for September. Mary is an eleven-time All-American in track and field.

That sums up the 1997 news. Please drop us a short message and keep us posted on information that might be of interest. Let us know of address changes for yourself or others, or if there is incorrect information. If you know the address of any of those for which we do not have an address, please provide it to us. My Email address is:

[aschneit@plains.nodak.edu](mailto:aschneit@plains.nodak.edu)

Our fax number is: 701-231-8474

If you have an Email address you can send us, we can use it for next year's Blizzard Watch.

This year we are not including the 'Graduates and Friends' address section. This section will be posted on the WWW under the Plant Sciences Dept. home page located at the NDSU website.

We acknowledge Steve Stark, Garry Smith, and Shirley Bertsch for allowing us to use their cartoons and photos in the *Blizzard Watch*.

If you are traveling in the area, stop by and visit. We always enjoy visiting with you. All of us in the department extend our best wishes to you for 1998.

*Al Schneider*

## "Jack's Corner"

I'm pleased to send you a short message as it is not feasible for me or my wife to write each of you individually. 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've survived 10½ years of retirement successfully, I believe. I'm reading some papers in Agronomy and Food Science and "talking flax" for food and feed for poultry, pets, etc. My wife says that I'm not doing a lot differently than in past but we start more slowly in the morning, don't work many nights or weekends, and more or less are doing the "agronomic things" as I please.

I taught Grain Grading in 1997 for the 47<sup>th</sup> and probably the last time at NDSU plus two years at Washington State. Dr. Jim Anderson taught the course in 1996, but alas, Jim moved to Washington State. So, I taught in 1997 with Dr. Mike McMullen as a teacher-in-training for 1998 onwards. Lori Baumann is a great teaching assistant and has been in this course for many years now. Now, January 1998, Dr. McMullen has started class and I'll help him as needed with some details.

I lectured about flax-as-food twice at Concordia College, Moorhead, in 1997. I answer hundreds of letters and phone calls, now even E-mail with Eileen Buringrud as my 'middle man' about flax as food or to feed poultry, pets, etc.

I'm President of the Flax Institute and have a two-day program March 26-28, 1998 at Fargo, the 57<sup>th</sup> Flax Institute. We will have a mini-symposium on LIGNANS with four experts on the subject.

I've been replaced as the Experiment Station Director's appointee to the North Dakota Oilseed Council but serve as their "flax consultant"--for a little pay now.

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 and linolenic acid content (omega 3) that will have some interesting and valuable developments in the future. People in the countries of some former foreign students may have consumed flax seed for hundreds of years, or should if they have not, for the omega 3 and fiber benefits.

I got funding for, and am supervising, two projects feeding flax to laying hens at the Univ. of Nebraska and Texas A & M, producing eggs 6-8 times higher in polyunsaturated fatty acids than generic eggs--the eggs are now being fed to people, including 450 athletes at the training table of the Huskers, University of Nebraska--and also sold at the campus store. The research on feeding hens was reported at the 55<sup>th</sup> and 56<sup>th</sup> Flax Institutes and to the Poultry Science Society. The research on feeding "flax eggs" to people reported to the 56<sup>th</sup> Flax Institute in 1996 showed a person may consume two flax eggs per day with improvement in omega 3/omega 6 ratio in blood, less sticky platelets and no increase in triglycerides.

Also, flax is high in anticarcinogenic LIGNANS and soluble fiber and is one of five plant products being studied in very large experiments concerning Designer Foods by the National Cancer Institute and Food & Drug Admin. for the next several years.

Mostly at home I have been doing some maintenance, helping an older neighbor, gardening, fishing, hunting, grafted 9 apple trees for Bidder's Bowl and special individuals, and attended Bidders Bowl in October.

Also, we attend home games of Bison football and basketball, especially the lady Bison, Div. II National Championships in 1994, 1995, and 1996, and 4 of the last 6 years.

Imogene, Imy to some of you, works less with clubs, church women groups, has retired playing the organ full time from church, still does the usual household duties from which women never retire, I guess. She entertained International women for their November meeting at our home--like "old times". Imogene would like to travel more to some other countries and maybe we will get going on that if her balance improves. She had shingles disease in

her ear in 1995 which has upset her equilibrium for 2½ years and treatment by a specialist at the University of Minnesota has not helped. If you know of a super ear specialist, let us know please. We visited our son Brian in Baton Rouge, LA, in January for two weeks.

In retrospect, many of you have influenced our work and lives favorably, and we yours, we hope. We hope to see some of you at a Blizzard Party, ASA--one more at least, although I know only the older members now. Stop to see us as you may pass this way and best wishes for a HAPPY and HEALTHFUL 1998.

*Dr. and Mrs. Carter*

## PLANT SCIENCES FACULTY

- A. A. Schneiter, Prof. & Chair
- R. G. Askew, Prof. Emeritus, Ext. Horticulture
- D. R. Berglund, Prof., Ext., Row Crops & Specialty Crops
- W. A. Berzonsky, Asst. Prof., Hard Spring Wheat Breeding
- A. A. Boe, Prof. Emeritus, Vegetable Breeding/Tissue Culture
- L. G. Campbell, Adj. Prof., Research Geneticist, Sugarbeets (USDA)
- P. M. Carr, Adj. Prof., Sustainable Agriculture
- J. F. Carter, Prof. Emeritus, Flax Promotion
- Z. M. Cheng, Assoc. Prof., Woody Plants, Biotechnology
- H. Z. Cross, Prof., Corn Breeding
- L. S. Dahleen, Adj. Prof., Barley Biotechnology (USDA)
- E. L. Deckard, Prof., Crop Physiology
- A. G. Dexter, Prof., Ext., Weed Science, Sugarbeets
- M. E. Duysen, Prof., Crop Physiology
- D. C. Ebeltoft, Prof. Emeritus, Seedstocks
- E. M. Elias, Assoc. Prof., Durum Wheat Breeding
- A. E. Foster, Prof. Emeritus, Barley Breeding
- J. D. Franckowiak, Prof., Barley Breeding
- R. C. Froberg, Prof., Wheat Breeding
- D. S. Galitz, Prof., Crop Physiology
- K. F. Grafton, Prof., Dry Bean Breeding
- J. J. Hammond, Prof., Flax Breeding

T. C. Helms, Assoc. Prof., Soybean Breeding  
 D. E. Herman, Prof., Woody Plants, Ornamentals  
 A. Holland, Prof. Emeritus, Fruits, Woody Plants  
 R. D. Horsley, Assoc. Prof., Barley Breeding, Genetics  
 M. B. Jackson, Extension Forester  
 C. C. Jan, Adj. Prof., Sunflower Cytogenetics (USDA)  
 P. P. Jauhar, Adj. Prof., Wheat Cytogenetics (USDA)  
 L. R. Joppa, Adj. Prof., Res. Geneticist, Durum Genetics (USDA)  
 S. F. Kianian, Asst. Prof., HRS & Durum Wheat Germpl. Enhancement  
 E. P. Lana, Prof. Emeritus, Vegetable Crops  
 C. W. Lee, Assoc. Prof., Ornamentals, Turf, Biotechnology  
 J. H. Lorenzen, Assoc. Prof., Potato Physiology  
 E. C. Lulai, Adj. Prof., Potato Physiology (USDA)  
 H. R. Lund, Prof., Potato Breeding/Genetics  
 R. G. Lym, Prof., Weed Science  
 S. S. Maan, Prof., Wheat Cytogenetics  
 E. McClean, Assoc. Prof., Molecular Genetics, Dry Bean  
 M. S. McMullen, Assoc. Prof., Oat Breeding  
 C. G. Messersmith, Prof., Weed Science  
 D. W. Meyer, Prof., Forage Crops  
 J. F. Miller, Adj. Prof., Res. Geneticist, Flax & Sunflower Breeding (USDA)  
 J. D. Nalewaja, Prof., Weed Science  
 D. C. Nelson, Prof. Emeritus, Potato Physiology  
 R. G. Novy, Asst. Prof., Potato Breeding/Genetics  
 M. D. Peel, Ext. Agronomist, Small Grains  
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 G. A. Smith, Adj. Prof., Sugarbeet Genetics (USDA)  
 G. S. Smith, Prof. Emeritus, Wheat Breeding  
 R. C. Smith, Prof., Ext. Horticulture & Turfgrass  
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 Gail Bresnahan, weed science  
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 Larry Chaput, woody plants  
 Kathy Christianson, perennial weeds  
 Mark Ciernia, weed control  
 Janet Davidson, weed science  
 Brenda Deckard, student services officer  
 Steven Ellefson, barley breeding  
 Ann Erickson, potato breeding/genetics  
 James Faller, HRS wheat breeding  
 Bryce Farnsworth, potato breeding  
 Scott Fitterer, weed science  
 Roger Genoch, barley breeding  
 Marci Green, barley breeding

Pete Gregoire, crop physiology  
 Darrin Hauf, dry bean breeding  
 Justin Hegstad, wheat germplasm enhancement  
 Jeffrey Huckle, HRS wheat breeding  
 Burton Johnson, crop production  
 Gerald Johnson, durum wheat breeding  
 Daryl Klindworth, wheat genetics, USDA  
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 Lyle Lindberg, flax breeding  
 John Luecke, sugarbeet weed control  
 Josef Maianu, seedstocks  
 Sandra Mark, weed science  
 Larry Martin, soybean breeding  
 Wayne Norby, forage crop production  
 Jeff Prischmann, biotechnology  
 Dale Rehder, sunflower breeding, USDA  
 Ron Roach, weed control  
 Wayne Sargent, molecular biology  
 Galen Schroeder, foundation seedstocks  
 Mike Schwalbe, potato breeding  
 Stan Stancyk, durum breeding  
 Jody VanderWal, dry bean breeding  
 Duane Wanner, corn breeding  
 Theja Wijetunga, crop physiology

#### GRADUATE STUDENTS, NDSU-FALL, 1997

Abrahamson, Rick	Self
Bergeson, Emilie	GRA
Bosela, Michael	GRA-DOE/EPSCOR
Bruniard, Jose	Self
Chee, Peng	GRA
Dai, Wenhao	GRA
Fan, Yongyi	GRA
Garcia, Gioconda	GRA
Gelin, Jean	GRA
Gill, Mary	GRA
Gonzales, Jose Luis	Self
Gu, Weisong	GRA
Haagenson, Darrin	GRA
Heinze, Ann	GRA
Kalavacharla, V.	GRA
Markle, Denise	GRA
Nelson, Jeff	GRA
Oltmans, Shannon	GRA
Rai, Satish	GRA
Ramsdale, Bradford	GRA
Rojas, Gonzalo	GRA
Sagredo, Boris	GRA
Urrea, Carlos	GRA
Vallad, Gary	GRA
Varberg, Jordan	Self
Vilaro, Diego	GRA
Zhou, Jing Kai	GRA

Department of Plant Sciences  
166 Loftsgard Hall  
North Dakota State University  
Fargo, ND 58105



## How You Can Help

- Your contribution to the J.F. Carter Endowment will honor an outstanding teacher and scholar who has helped shape the careers of generations of undergraduate and graduate students.
- You will help attract outstanding students to graduate programs in the Department of Plant Sciences at NDSU.
- And you will help ensure continued excellence in a graduate program that Jack Carter helped build into one of the finest in the country.

The Carter Endowment is part of the Agricultural Development for North Dakota State University. For more information, contact the Department of Plant Sciences (701) 231-7971 or the NDSU Development Foundation (701) 231- 8971  
North Dakota State University,  
Fargo, North Dakota 58105.

## The J.F. Carter Endowment

for integrated crop production will enhance educational and research efforts in the Department of Plant Sciences at NDSU that focus on agronomic crops including plant breeding, production, and the evaluation of major crops grown in North Dakota and the region. Excellence in graduate education and research will be a significant focus.

The endowment is named for Dr. Jack Carter in recognition of his contributions to North Dakota agriculture, to the education and careers of generations of students, and to building the NDSU Department of Plant Sciences into one of the outstanding agronomy departments in the nation.

The  
J.F. Carter  
Endowment

*A program of excellence for  
integrated crop production,  
research and education*

Department of Plant Sciences  
College of Agriculture  
North Dakota State University

NDSU

## About the Endowment

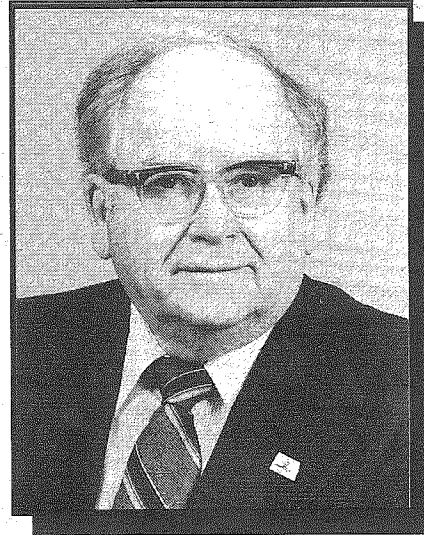
The fund will provide a source for the permanent support of a teacher/researcher in crop production in the Department of Plant Sciences that:

- Emphasizes a research, teaching and extension program that integrates all production variables in one package including plant breeding and crop evaluation.
- This holistic outlook will provide the basis to excel in maximum economic benefit, preservation of soil quality and fertility, and while using best pest control management; all as related to producing best crop quality and value.
- Will provide vision to seek and evaluate alternative crops, practices, markets and utilization that will lead to a more profitable agriculture in North Dakota.
- Will evaluate and incorporate the rapidly advancing technologies for precision farming and site specific agriculture into an integrated crop production paradigm of the future.
- Fundamental concepts of plant growth and the accumulation of value in the products of plants be elucidated and published in order to provide a framework for continued advances of integrated crop production.

Also, the fund will provide the incentive for the accumulation of brain power at NDSU if North Dakota and U.S. agriculture are to remain strong in the face of global competition. It is crucial, therefore, that the Department of Plant Sciences attracts outstanding students and faculty to its graduate programs. To do this, We will need:

- Excellent and continuing graduate fellowship stipends.
- State-of-the-science equipment and technology.
- Opportunities and support for graduate students to attend and present papers at professional meetings.

## About Jack Carter



Teacher, mentor, scientist and administrator, Dr. J.F. Carter joined the faculty at North Dakota State University in 1950 and from 1960 to 1987 served as chair of the Department of Agronomy, now Plant Sciences.

He earned a bachelor's degree in 1941 from the University of Nebraska, a master of science degree in 1947 from Washington State University, and a Ph.D. in 1950 from the University of Wisconsin, all in agronomy. He served in the U.S. Navy, 1942-45 in WWII.

Dr. Carter was instrumental in the process through which NDSU became a Ph.D. granting institution, in 1950. He subsequently led the department in building a highly respected graduate program, and he and his wife, Imogene, served as hosts and advisors to dozens of graduate students and their families from throughout the United States and the world.

His skills as a teacher were recognized by students in 1979 when he was awarded the Alpha Zeta Agricultural Teacher of the Year Award, and in 1990 when he received the Blue Key Outstanding Educator Award. Students often remark of his grain grading course, "the best course and the best teacher I have had at NDSU."

NDSU and North Dakota also have benefited from Dr. Carter's commitment to research. He was instrumental in strengthening the department's respected plant breeding programs and in initiating a weed science research group, and is a recognized expert in the area of grain grading and on seedstocks and seed distribution systems.

Dr. Carter served as president of the Crop Science Society of America and on the Board of Directors of the American Society of Agronomy and was elected a fellow of both organizations. He received the Polish Badge of Merit in Agriculture from Agriculture University of Pozan in 1977. Also a charter member, CSSA representative and president of CAST, Council for Agriculture Science and Technology.

Following his retirement, he was named professor emeritus. He has continued to teach the department's grain grading course and has been president of the Flax Institute of the United States since 1972, and continuing after retirement in 1987. In 1995 he was awarded an Honorary Doctor of Science degree from North Dakota State University, and Loftsgard Hall 102 was dedicated as the J.F. Carter Lecture Room in his honor.

