



# Blizzard Watch

## NDSU – Department of Plant Sciences

2004



Since it is already mid-January as I begin writing this, I will have to wish all of you a belated “Merry Christmas and a Happy New Year”. I hope all is well with all of you and your loved ones.


the state has a little more than we have in Fargo. Generally, temperatures in November and December have been good, January was average and February cold. It is all a part of one’s perspective. It is always interesting to watch the apparent panic in New York or Boston when temperatures approach or reach zero and wind chills approach -30° F. That would be a reasonable day in North Dakota. I remember when I was a graduate student in Tucson, Arizona, the whole town closed down because we had about an inch of snow which came during the night. It was gone by 10:00 AM, but traffic ground to a halt. Stores and schools were closed and most cars would not start. It was an interesting experience for someone from North Dakota.

### THE YEAR IN REVIEW

- Steele HRSW released
- Stark oat variety released
- Woody plant introductions
- LaMoure and RG405RR soybean varieties released
- Merger with Cereal and Food Science
- Horticulture Garden Dedicated
- Ian Edward honorary degree

For the first time in a while, the growing season was generally very favorable for small grain production. The state generally received plenty of rain and favorable temperatures until the end of the first week in July. The balance of July was very dry and above-normal temperatures. For the most part, however, the small grains were far enough along and there was adequate subsoil moisture to complete the crop. An exception

There have been many changes in the department this year and I have a lot to report. But first the weather. It has been another easy winter for all of us here in Fargo and the state in general. We have had a few nights below zero, but for the most part, the temperatures have hovered between 0° and 30° F. We have about four inches of snow on the ground. Northwestern North Dakota seems to have the most snow. There are a lot of reports of deer eating hay stacks and deer congregating in the smaller towns. The NE part of



I am hoping that this copy of the Blizzard Watch reaches you earlier than last year. I had a graduate tell me that it made nice reading while he was in the tractor seeding. Kind of late for a blizzard, but you never know in North Dakota. Anyway, this is my 11<sup>th</sup> issue I think. As of January 1st, I have been chair or interim chair of Plant Sciences for ten years. Some days it seems like months and other times it seems like 50 years--depending on the nature of the current crisis.

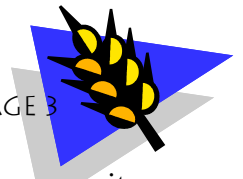


was in the western part of the state where high temperatures reduced potential yields. The temperature in Minot was in excess of 100° F on July 25<sup>th</sup> while I was attending a crop improvement board meeting. The lack of rain held throughout most of harvest, resulting in a bumper crop of high quality spring wheat, durum, barley, oats, flax, and other early maturing crops. It was the second highest wheat crop in recent history. Unfortunately, one of the problems with a bumper crop is that you also need to have storage. North Dakota has the highest on-farm storage in the nation, but could not hold this year's entire crop. The result was the storage of grain in huge piles on farms or at elevators. We also had our usual problem of a lack of rail cars. The cutoff in moisture in early July, coupled with warm, dry days, was good for small grains, but caused problems for soybean and corn growers, especially in the southeastern part of the state, south of Fargo to the South Dakota border. Yields of both crops in this part of the state were lower than normal. State-wide, however, the soybean and corn crops were about average. Wheat acreage was down a little, while corn and soybean acreage continue to increase. Flax acreage continued to climb. Dr. Carter would never forgive me if I did not mention flax.

Last year, for the first time in many years, scab was not a problem in wheat and barley. That trend continued as there were few reports of the disease this

year. Last year I reported that 'Alsen', a NDSU release with good scab resistance and good quality, occupied 30% of the state's spring wheat acreage. This year the percentage of the state's wheat acreage sown to Alsen increased to 38%, with 55-60% of the acreage in north central and northeastern North Dakota being Alsen. All told, NDSU varieties occupied about 60% of the state's total spring wheat acreage. The percentage of durum sown to NDSU varieties is about 90%. This spring the Agricultural Experiment Station released 'Steele' as a replacement for Alsen. This is the first variety for Dr. Mergoum and is from a cross that Dr. Froberg made. It has scab resistance about equal to Alsen, but is higher yielding and has a higher test weight and kernel size. The scab resistance is from a different genetic source than that found in Alsen. We do not have the large amount of initial seed to go out to the county crop improvement associations, as we did when Alsen was released because the need is not as critical. I suspect in a few years Steele will replace most acreage of Alsen. Steele has also performed well in the western part of the state and may begin to replace some acreage of 'Reeder', a NDSU variety commonly grown in the western part of North Dakota and eastern Montana. In other crops, the Agricultural Experiment Station released a transgenic soybean variety 'RG405RR' and a conventional soybean variety named 'LaMoure'. This will be the sec-

ond transgenic variety that Dr. Helms has released from his breeding program. It has resistance to the herbicide Roundup. Currently about 80% of the state's soybean acreage has Roundup resistance. The Agricultural Experiment Station also released a hull-less or naked oat variety named 'Stark'. The variety release committee and I wanted to name it 'Streaker' but were overruled. Stark will replace 'Paul' as it has about a 10% yield advantage. Both of these varieties are from Dr. McMullen's breeding program. Hull-less oat varieties generally yield less than hulled varieties, but have a higher test weight and have been shown to have good feed qualities and are used extensively in animal feeds. Later on this year just before field days in July, we will be announcing the release of a black bean from Dr. Grafton's program, another oat from Dr. McMullen's program and a flax variety from Dr. Hammond's program. This will be the first black bean NDSU has released. The flax will be a yellow-seeded type that has a much higher yield and should replace much of the acreage of 'Omega'. The oat variety to be released will be a conventional hulled type with good yield potential. Always remember that varietal development is a cooperative effort of a lot of different scientists from different departments on campus, the USDA and the Research Extension Centers. It is not just a one person or one department project. They are all team efforts.



Recently we were informed that the NDSU Research Foundation will collect research fees on all registered and certified seed of all newly released NDSU varieties. SDSU has recently implemented the same policy. The major reason for this is to provide supplemental support to the breeding programs and related research efforts, which have been reduced time and time again due to continual reductions in state aid. This may cause some controversy in the state, but I think most producers understand why research fees were added.

There were also a number of woody plant introductions from Dr. Herman's program. These include:

- Prairie Torch<sup>TM</sup> Hybrid Buckeye - *Aesculus* x 'Bergeson'
- Prairie Expedition<sup>TM</sup> American Elm - *Ulmus Americana* 'Lewis & Clark'
- Prairie Spirit<sup>TM</sup> Juniper - *Juniperus* x 'Bison'

Patent applications were submitted for the following introductions:

- Prairie Dream<sup>TM</sup> Paper Birch - *Betula papyrifera* 'Varen'
- Prairie Vision<sup>TM</sup> Asian White Birch - *Betula platyphylla* 'VerDale'

Much of the controversy about transgenic wheat has been in dormancy, but is starting to heat up again. The general consensus is that transgenic wheat release and production is just a matter of when. A critical factor is that we must protect our export markets.

A significant amount of North Dakota's wheat is exported and it is important that we protect our markets and they not be lost. A lot of us are looking to the north to see what Canada is going to do. Other issues are liability, tolerance levels, etc. We also need to maintain as best we can pure seed for non-transgenic producers. We have a lot of work to do.

There has been a recent development concerning transgenic wheat. I have been a member of a co-existence committee that includes representatives from the organic growers, conventional and identity preserved producers, NDSU personnel and the private industry companies that promote and sell transgenic crops. The members that represented the organic industry and one other producer resigned from the committee indicating NDSU and other representatives on the committee were not dealing with the major issues. A number of organic growers and some others are now trying to collect signatures for a referendum to prevent transgenic wheat from being grown in North Dakota unless it is approved by a committee representing different groups, including the North Dakota Secretary of Agriculture. I have no doubt they will be able to collect the signatures for a statewide referendum as the percentage needed for a referendum are small. If there is a referendum, I expect there will be a lot of arm twisting and half truths about the dangers of transgenic wheat and biotechnology in gen-

eral. If the petition passes, it will be meaningless. NDSU could certainly be prevented from releasing varieties, but what about South Dakota, Minnesota and privately developed varieties? If transgenic wheat receives USDA, FDA and EPA approval, it will be impossible to prevent its production in North Dakota. I thought the coexistence committee was doing okay, but everyone has his/her own opinion. This is a time we all need to sit at the table, work hard, and try to solve problems, not walk away from the table. All groups need to be willing to compromise or no progress will be made.

On to more positive issues. It was good to visit and see all of you that attended the ASA meeting and the North Dakota Blizzard Party in Denver. Attendance was down a little at the party and at the meetings in general. This is probably in response to the restricted budgets faced by many states and industry. We only had a total of nine faculty and seven graduate students and postdocs attend. We also had seven undergraduates attend. We had two faculty, two research techs, two graduate and two undergraduate students attend the North Central Weed Science Society meetings held in Louisville, KY in December. Four faculty attended the American Society of Horticultural Science meetings held in Providence, RI in early October. Several faculty just returned from the Western Society of Weed Science meetings in Colorado



Springs.

No new faculty were hired this year and none retired. In response to the slow economy, Governor Hoeven reduced the state budget by 5%. In North Dakota the College, NDSU AES and the NDSU Extension budgets are separate budgets. The reduction affected the AES and Extension more negatively, since they do not receive any funds from tuition increases, which NDSU initiated to offset the cut. To make the cut, Dr. Grafton, the AES Director, closed several vacant positions, including one faculty position in potato germplasm enhancement, one secretarial position and one technical support position in the spring wheat breeding project in Plant Sciences and his own vacant position as dry bean breeder. The legislature, which meets every other year, did not provide any funds for salary increases this biennium. However, Dr. Chapman, the president of NDSU, mandated a 2% salary increase. Some of the funds, about 1%, came from the director's salary savings, while the other 1% came from within the department. This year the president will probably again mandate a salary increase, which will again need to be from internal NDSU funds. Although times are difficult, they pale in comparison to reports I have heard from some other states. The response of NDSU Extension was similar to that of the AES.

Last year I reported that Dr. Paul Schwarz transferred from Cereal



Frank Manthey



Monisha Chakraborty



Truman Olson



Brian Sorneson



Sue Brantseg

and Food Sciences (CFS) to Plant Sciences. This year we gained two more faculty from CFS, Dr. Frank Manthey and Dr. Monisha Chakraborty, who conduct research in durum and spring wheat quality, respectively, along with their support staff and graduate students. Also joining us were Truman Olson, who heads the project that analyzes spring wheat for quality, and Brian Sorneson, who works part time for the Northern Crop Institute and part time for the NDSU Extension in grain quality. Sue Brantseg, who had worked in the Cereal and Food Sciences office, also transferred

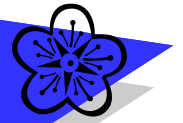
to our department. She has been assigned the responsibility of working with all of our graduate students. All of these faculty have worked closely with many of our faculty and staff for a number of years. A total of 24 individuals transferred to our department. The majority of the transfers took place in August and September of 2003.

This year after the merger of several CFS faculty and staff into our department, I asked Vice President Jensen if she could provide some funds to hire someone part time to give me a hand. She agreed and I asked for volunteers. I selected Dr. Rod Lym who, beginning January 1, is now the Assistant Chair.



My plan is to try to rotate this position every couple of years. Not only will it help me tremendously, but it will also provide experience in administration to anyone who has an interest in that area. Rod will continue with his teaching and research responsibilities so I will do my best not to overburden him. He has started working on a couple of projects that needed to be done, but ones I simply did not have time to do. I look forward to working with him. I know he will do a great job.

Drs. Horsley and Schwarz from Plant Sciences and Dr. Steve



Neate from Plant Pathology, are working to develop the Institute of Barley and Malt Sciences. The purpose is to establish a center of excellence for research and education efforts on malting barley.

This effort has included coordination of a business plan for the Institute, soliciting input from commodity groups and malting and brewing companies, and preparing a request for a USDA-CSREES special grant.

According to Dr. Horsley, the

establishment of the Institute will allow us to focus and enhance our research and teaching efforts in the barley and malting sciences at NDSU.

One of the first jobs I gave Dr. Lym was to develop a plan for the Institute of Grain Quality. This Institute will involve the former CFS faculty and some of our plant breeders. The Institute will have an advisory board made up of several commodity groups and institute representatives. One of the purposes of the Institute is to preserve and

maintain the identity of the CFS discipline and its faculty within our department.

Ultimately, we hope both these Institutes will be vehicles that will allow our researchers to modernize research equipment; attract superior graduate students, and post-doctoral and visiting scientists; and provide solutions to growers and industry on problems in a more timely manner. Both Institutes must be approved by NDSU and the State Board of Higher Education.

## OTHER IMPORTANT AND EXCITING EVENTS

A number of other important and exciting events occurred this year. Last year I reported that a new NDSU business building would be built on what has been for many years the

horticulture perennial and annual floral evaluation plots. At homecoming we broke ground for Phase I of our new Horticultural Demonstration and Research Plots at NDSU (see map pg. 15). Also attached will be turf research plots. The site for Phase I will be directly south of the current plots, which are directly west of the USDA Northern Crops Science Lab. The gardens will be used for research, extension and teaching. Phase I of the new horticulture gardens



Dr. Ron Smith, Andrea Carlson



Bryce Farnsworth, Research Specialist, Plant Sciences; Pat Jensen, VP Ag; John Shotwell, Shotwell Floral; President Joseph Chapman; Sue Andrews, State Board of Higher Education; Andrea Carlson, Barb Laschewitsch, Research Specialist, Plant Sciences.

will include our historic Daylily Garden, and a large collection of Iris donated by the family of Art Jensen. The daylily collection has been listed as the first historic daylily garden at a U.S. Land Grant Institution. Phase I will also include the new sites of our annual and perennial floral beds. We anticipate Phase II will include a small building for classroom purposes, bathroom facilities, and a small greenhouse.

Phase III will include a Rose, Native American, Herb, and Prairie Garden that will contain native grasses and a display of North Dakota crops. The garden was designed by Andrea Carlson, who is a senior in Horticulture and the President of the Horticulture Club. Andrea has done an outstanding job designing each phase. She also works in our office part time assisting the office staff.



We just concluded the 20th Annual Graduate Student Symposium. About 20 graduate students from the University of Saskatoon and the University of Manitoba joined our graduate students for a tour of the facilities, presentations and generally good fellowship. Next year the meeting will be held in Saskatoon, Saskatchewan.

New research specialists are Lisa Duppong and Eric Auwarter. Lisa works with Dr. Hatterman-Valenti in high value crop production. She received her B.S. at NDSU and her M.S. at Iowa State. Lisa was a member of the first group



Lisa Duppong



Eric Auwarter

of departmental summer fellowship interns when the program was initiated several years ago. Eric is working with Dr. Thompson in potato breeding. He is the son of Gordon Auwarter, a good friend of mine, and probably a person many of you knew. Gordon unfortunately passed away, but was a technician for several years in one of the weeds projects.


Jeremy Pederson resigned from his position with the durum breeding program and accepted the position of Assistant Seed-

stocks with Dr. Dale Williams. He will work in Roughrider Genetics. For those of you who don't know, Roughrider Genetics is the marketing name of our transgenic varieties.

We have three new adjunct professors:

Shiaoman Chao, Ph.D., working with small grains genomics; Jinguo Hu, Ph.D., working with sunflower genomics; and Douglas Doehlert, Ph.D., working with oat quality research. Doug was from CFS and has worked closely with Dr. McMullen, our oat breeder, for many years.

Several postdocs and one visiting scientist have joined the department-- Junfang Chen in sunflower genomics; Dennis Tobias in barley genetics and biotechnology; Ying Jia in plant science research; Lili Zhou in potato physiology, Liusheng Duan in wheat genetics, Xingyou Gu in weed biology and Jiuhuan Feng in sunflower genetics.



This year on our annual secretarial outing, Dr. Dexter joined us.

We toured the sugarbeet plant at Crookston and then stopped at a nursery near Climax, Minnesota. This is my chance each year to show our office staff some different aspects of agriculture and the department's appreciation for all the hard work that they do to keep us going.

## GRADUATE STUDENTS

The Ph.D. students who have completed their degrees and their advisors are: Nathalie Vignaux (Dr. Kianian) and Guillermo Van Becelaere (Dr. Miller). Nathalie is now a postdoc with Iowa State University and Guillermo is a postdoc at the University of Georgia.

Several M. S. graduates finished their degrees this past year. Their advisors and their present positions are: Chad Anderson (Dr. Frohberg) is the director of the seed increase program at the North Central Research Extension Center in Minot; Kenneth Deibert (Dr. Lym), with BASF, Omaha, NE; Brad Fronning (Dr. Kegode), now a doctoral candidate at Michigan State University; Kirk Hartel (Dr. Berzon-sky), with Dakota Technologies, Fargo; Darrin Hauf (Dr. Grafton) with Pioneer International, Johnstown, IA; Tim Larson (Dr. Johnson) with Pioneer Hi-Bred in Mankato, MN; Jerad Liedberg (Dr. Hatterman-Valenti/Lorenzen) with Peterson Farm Seeds, Harwood; Joel Roehl (Dr. Messersmith) with BASF, Fargo; Don Vincent (Dr. Dexter) with Rosen's, Inc., Moorhead.

New Ph.D. graduate students include Xunfen Chen from China (Dr. Cai), Chu Chenggen from China (Dr. Faris), Mridull Dilawari from India (Dr. Cai), Min Hu from China (Dr. Carena), Melissa Huhn from Darwin, MN (Dr. Elias), Aruna Kandikonda from India (Dr.





Christoffers), Kornelija Matkovic from Yugoslavia (Dr. Chakraborty), Juan Osorno from Colombia (Dr. Carena), Leela Reddy from India (Dr. Faris), Anton Schorno from Moorhead, MN (Dr. Manthey), Diego Vilaro from Uruguay (Dr. McMullen), Tao Wang from China (Dr. Cai), and Guorang Zhang from China (Dr. Mer-goum).

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New M.S. students are Zhiwei (Allen) Chen from China (Dr. Hatterman-Valenti), Lisa Dahl from Sabin, MN (Dr. Howatt), John Eidenshink from Little Falls, MN (Dr. Berzonsky), Pradyot Ghosh from India (Dr. Chakraborty), Kevin Jacobson from Fullerton, ND (Dr. Dexter), Ajay Jha from India (Dr. Dahleen), McDonald Jumbo, a Fulbright Scholar from Malawi (Dr. Carena), Jamie Kloster from Buxton, ND (Dr. Dexter), Sunil Kumar from India (Dr. Faris), Sung Eun (Theresa) Lee from Korea (Dr. Lee), Lesley Lubenow from Morris, MN (Dr. Johnson), Shipra Mittal from India (Dr. Dahleen), Gauri Nazre from India (Dr. Kegode), Rebekah Oliver from Pelican Rapids, MN (Dr. Cai), Clint Ostby from Princeton, MN (Dr. Mer-goum), Carrie Schumacher from Reynolds, ND (Dr. Hatterman-Valenti), Bahadir Sezegen from Turkey (Dr. Carena), Fernanda Silva from Brazil (Dr. Thompson), Keti Singh from India (Dr. Manthey), Shalini Sinha from India (Dr. Manthey), Saujanya Yalla from India (Dr. Manthey), and Chelsea Juricek

from Crete, NE (Dr. Lym).

We went from a total of 37 graduate students last year to 71 this year. You can only guess what the increase in students did to our space problems. All of the student offices are full and I found it necessary to convert the Library in Walster Hall to student offices. As you would also suspect, our graduate classes are full. We had a total of 107 undergraduate students in Crop and Weed Sciences and Horticulture registered fall semester. Overall the College of Agriculture is up about 20 students over last year.

The new Sports and Urban Turfgrass Management Program, led by Dr. Li and Dr. Smith, is in its second year, but already has 30 students. There is a lot of interest among students and the jobs are good.

Resignations include Steve Sebesta, Assistant Seedstocks Director, who accepted a position with the State Seed Department; Brad Ramsdale, a PDRF with Dr. Messersmith, who is now with California State University - Fresno; Sam Lockhart accepted a position with FMC. Other resignations include: Durga Nadella; Vijay Nandula; Mengistu Workineh and Gail Bresnahan.



## SCHOLARSHIP RECIPIENTS

2003-2004 scholarship recipients are as follows: (hometowns are in ND, unless otherwise noted)

**Horticulture Curriculum:**  
**Harry C. Baker Memorial Scholarship**, \$200: Chad Burrer from Wing; **Harry A. Graves Memorial Scholarship**, \$250: Rachel Larson from Winger, MN; **Margaret Huedt Memorial Scholarship**, \$230: Jill Jerve from Montevideo, MN; **Horticulture and Forestry Club Scholarship**, \$300: Andrea Carlson from Hibbing, MN; **Horticulture Scholarship**, \$125: Ashley Braun from Mellette, SD; **Horticulture Scholarship**, \$125: Matthew Kieselback from Park Rapids, MN; **Horticulture Scholarship**, \$125: Pam Murdock from Vadnaie Heights, MN; **Horticulture Scholarship**, \$125: Joshua Peterson, Lakota; **Hovland-Jensen Scholarship Fund**, \$450: Michelle Duppong, Glen Ullin; **Ruth M. Johnson Scholarship**, \$325: Carrie Schumacher from Reynolds; **Mainline Potato Company**, \$175: Chase Thielen from Sacred Heart, MN; **North Dakota State Horticultural Society Scholarship**, \$500: Kari Wanner from Hebron; **Henry R. and Corinne Foley Peterson Horticulture Scholarship**, \$750: Melody Webster from Beulah; **H. Donald Piepkorn Scholarship**, \$500: Rebecca Rogne from Minot; **Earl Scholz Scholarship**, \$125: Rebekah Miller from Lawton;

**A.D. Stoesz Memorial Scholarship**, \$500: Colleen Rasmussen from Lakefield, MN; **Sports and Urban Turf grass Management Scholarship**, \$200: Brian Naas from McVille; **W. Allan and H. Lucile Watt Scholarship**, \$300: Gayle Ferber from Northwood.

**CWS Curriculum:**

**Arthur Companies/Joe Bur- gum**, \$300: Dori Amundson from Hope; **John Breker Crop Science Scholarship**, \$300: Jenna Jansen from Breckenridge, MN; **CHS (Cenex Harvest States) Cooperative Founda- tion Scholarship**, \$500: Seth Fore from Mentor, MN; **CHS (Cenex Harvest States) Cooperative Founda- tion Scholarship**, \$500: Eric Delahoyde from Cogswell; **James R. Dawson Scholarship**, \$500: Aaron Carlson from Milaca, MN; **Irvin T. Dietrich Scholarship (NDAA)**, \$500: Kristin Johnson from Kenmare; **Russell and Anna Dun- can Foundation Scholarship**, \$500: Eric Enerson from Stanley; **Russell and Anna Duncan Foundation Scholar- ship**, \$500: Mark Bata from Adams; **Travis Engstrom Memo- rial Scholarship**, \$500: Andrew Johnson from Cooperstown; **Ernie French CWS Scholar- ship**, \$500: Elizabeth Bruins from Arnegard; **Lars A. Jensen Scholarship (NDCISA)**, \$500: Jared Nitschke from Jud; **Don- ald Kenna Scholarship (NDAA)**, \$500: Jesse Underdahl from Hebron; **H.R. Lund Freshman PLSC Scholarship**,

\$500: Nathan Cook from Valley City; **Monsanto Ag. Products Co. Scholarship**, \$500: Kevin Sinner from Casselton; **Glenn A. Peterson Memorial Scholar- ship**, \$500: Patrick Erickson from Roseau, MN; **Glenn A. Peterson Memorial Scholar- ship**, \$300: Brian Foster from Britton, SD; **Chuck Rongen Scholarship (NDAA)**, \$500: Jesse Moch from Edgeley; **P.C. Sandal Memorial Scholarship**, \$600: Nancy Hillen from Fargo; **Harry and Lillie Seidel Agri- culture Scholarship**, \$1,000: Robbie Holthusen from Wahpe- ton; **Theodore E. and Margue- rite R. Stoa Freshman Scholar- ship**, \$400: Adam Larson from Willow City.

**Graduate Students:**

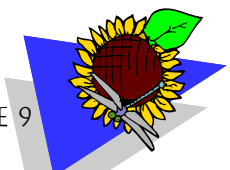
**BASF Graduate Student Scholarship**, \$500: Eric Dvorak from Warren, MN; **H.L. Bolley Graduate Scholarship**, \$515: Mary Osenga from Bejou, MN; **CWS (Plant Sciences) Gradu- ate Scholarship**, \$330: Angela Waletzko from Harvey; **Gustav N. Geizler Memorial Scholar- ship**, \$300: Sudeep Mathew from India; **John H. Longwell, Jr. Memorial Scholarship**, \$300: Marcelo Melani from Ar- gentina; **Devin Miller Memo- rial Scholarship**, \$400: John Davies from Australia; **Eric Matthew Miller Memorial Scholarship**, \$1,000: Angela Sebelius from Overly; **Mon- sonto Graduate Student Schol- arship**, \$200: Snigdharani (Reena) Dash from India; **Mon- sonto Graduate Student Schol- arship**, \$200: Xin Xu from

China; **Monsanto Graduate Student Scholarship**, \$200: Clarissa Carvalho from Brazil; **Monsanto Graduate Student Scholarship**, \$200: Nadejda Krashenninnik from Russia; **Monsanto Graduate Student Scholarship**, \$200: Guotai Yu from China; **John D. Nalewaja Graduate Scholarship**, \$500: Laurie Janzen Richardson from Penn; **John D. Nalewaja Graduate Scholarship**, \$500: Andrea Travnicek from Minot; **Smith Fellowship for Foreign Graduate Students**, \$500: Juan Caffarel from Uruguay.

This year I plan to initiate two scholarships each in the amount of \$1000 in honor of Dr. Carter. One will be awarded to a full time undergraduate major in Crop and Weed Sciences, Horti- culture, or Sports and Urban Turfgrass Management (junior or senior rank) and one to a full time M.S. or Ph.D. graduate stu- dent in the Department of Plant Sciences. Scholastic and leader- ship qualities will be stressed.







Dr. Dwain Meyer was selected as a Fellow of the Crop Science Society of America and was presented his award at the annual meeting held in Denver, CO in November. This is a very prestigious award as only three members are selected for each 1000 members of the society. In addition to doing research in forages and teaching, he also served as Technical Editor for the society and was on several national boards.

**Congratulations Dwain!**

Jerry Miller, USDA-ARS sunflower geneticist, was honored for “Superior Effort in Technology Transfer” for his work in developing NuSun sunflower. Miller also played a key role in the development of Clearfield™ sunflower.

**FACULTY, STAFF & STUDENT AWARDS & HIGHLIGHTS**

Dr. Elias Elias was promoted to full Professor and Dr. Shahryar Kianian was promoted to Associate Professor and granted tenure this past year. This year we have several individuals up for promotion and tenure. No final decisions have been announced at this time.

Congratulations to Andrew Thostenson, pesticide programs specialist, who has been elected to the Certification and Training Assessment Group (CTAG) Board of Directors. CTAG was established in 1996 to assess the current status and provide future direction for the national pesticide applicator certification and training program.

At the American Society of Agronomy meeting in Denver, Colorado, a certificate of excellence was presented to several of our faculty and some from our department in the educational materials program for the North Dakota State University Crop and Pest Report. Those being recognized include Duane Berglund, Phil Glogoza (Entomology), Rich Zollinger, Joel Ransom, Marcia McMullen (Plant Pathology), Carl Bradley (Plant Pathology), Dave Franzen (Soil Science), Alan Dexter, and Mohamed Khan (Soil Science).

LOFTSGARD HALL



One of our former students, Dr. Ian Edwards from Perth, Australia, received an honorary degree from NDSU this past spring. For those of you that ever knew Ian, his enthusiasm has not diminished very much. He is the president of Grain BioTech, a wheat breeding and biotechnology company.



JERRY FRANCKOWIAK AND DUANE BERGLUND BECAME MEMBERS OF THE QUARTER CENTURY CLUB



Jerry Franckowiak



Duane Berglund

A recognition coffee was held on April 23, 2003 to honor the following employees for their years of service: Gail Bresnahan, Gene Leach, Melissa Welter, Paula Peterson - 5 years; Janet Davidson-Harrington, Justin Hegstad, Theja Wijetunga - 10 years; Katheryn Christianson, Bob Baumann, Ron Roach - 20 years and Kay Carlson - 35 years. Two new members of the Quarter Century Club are Duane Berglund and Jerome Franckowiak.



Roger Genoch, Ron Roach, Burton Johnson, Kathy Christianson, Kirk Howatt



Justin Hegstad, Kathy Christianson, Janet Davidson-Harrington, Ron Roach

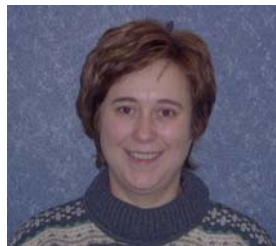
In November Bryce Farnsworth was the recipient of the Prairie Garden Award for Excellence



from the Prairie Garden Committee, Manitoba, Canada. Bryce works

with horticultural gardens in the Northern Great Plains, and is especially well known for his work with daylilies.

In September Kornelija Matkovic, a Ph.D. student, was



selected winner of an Advancing Association of Cereal Chemists graduate

fellowship in cereal chemistry and technology funded by the AACC Endowment Fund. Her advisor is Monisha Chakraborty.

Nadejda Krashenninnik was selected by a faculty committee for the Gerald Mott Meritorious Graduate



Student Award from the Crop Science Society of America. Nadejda is a Ph.D. student from Russia working with Dr. Franckowiak.

Robbie Holthusen was chosen as the outstanding Crop and Weed Sciences Senior from our department for recognition by the American Society of Agronomy, Crop Science Society and Soil Science Society of America. His picture will be included in the April issue of *CSA News*.



Our Plant Sciences research undergraduate fellowship interns for the summer of 2003 were (l to r) Kevin Sinner with Dr. Rich Zollinger; Anusha Mishra with Dr. Rich Horsley; Aaron Carlson with Dr. Alan Dexter; Pabalu Karunadharma with Dr. Shahryar Kianian; and Jim Loken with Dr. Harlene Hatterman-Valenti. On the average, about 80% of those selected as interns go on to graduate school, generally at NDSU.







At the annual faculty/staff awards on February 5th, Dr. Helms won the Senior Faculty Research Award and Roger Genoch won the Technical Support Award.



Ted Helms

These, like the student scholarship awards, are always a highlight of the year for me. I cannot understand why our faculty does not win every award in the category in which they are nominated. I may be a little biased, I guess.



Roger Genoch

A daughter, Sheyenne Grace, was born to Rob & Angela Waletzko on October 27, 2003.

A daughter, Eesha, was born to Monisha and Partha Chakraborty on November 8, 2003.

A son, Valentin, was born on November 19, 2003, to graduate student Marcelo and Maria Melani.

Lisa L. Bergh, graduate student of Rich Horsley, was selected as a Graduate Teaching Intern in the ND Biomedical Research Infrastructure Network Program. She is teaching at the Turtle Mountain Community College with Dr. Scott Hanson as her mentor, Spring 2004 semester.

In September Paul Sadosky, graduate student of Paul Schwarz, was awarded an American Society of Brewing Chemists Foundation scholarship in brewing and malting science. The scholarship is funded by the Sierra Nevada Brewing Company.

Dr. Marcelo Carena was the recipient of the Dupont Young Professor Award. Dr. Carena is an Assistant Professor and the leader of the NDSU corn breeding project.

Our Holiday Party was held at the Alumni Center in December. Dr. Ron Smith was the MC and again, he was the recipient of the "Bison Chip Award". Other socials held this past year were a dessert fest, a chili feed, and ethnic food lunch.

Duane Berglund was recently honored by the Manitoba-North Dakota Zero Tillage Farmers Association for his years of work in the organization. Duane was one of the original organizers of this association.

Robert G. Askew, Professor Emeritus and former Extension Horticulturist at NDSU for 21 years, retiring in 1988, passed away on August 23, 2003 in Fargo at the age of 77.

Ron Smith was awarded the Blue Key "Distinguished Educator's Award" by Blue Key members during a departmental faculty meeting on Friday, November 7th.

A son, Albert Edward, was born to Dr. Deying and Liying Li on April 2, 2003.

A boy, Ethan Patrick was born to Vicki and Joe Magnusson on October 21, 2003.

I have a new assistant to help me with the Blizzard Watch this year. Edie Nelson drew the short straw among the office staff and now needs to decipher my handwriting. She is doing great and has a good sense of humor. That helps especially since she has to work with me. I think that is about it for this year.

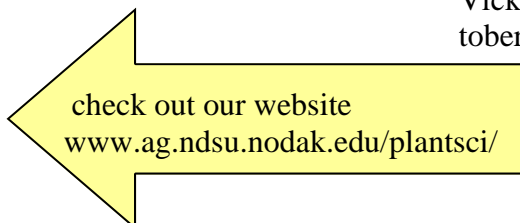


As soon as the Blizzard Watch gets to press, I am sure I will think of other things I should have mentioned. I hope all of you have a good year in your professional and personal lives. Our warmest wishes to all of you. See you again next year.

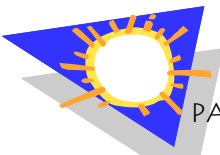
If you want to contact us, please email me at:  
 albert.schneiter@ndsu.nodak.edu  
 Phone: 701-231-8137  
 Fax: 701-231-8474

*Al Schneiter*  
*Professor and Chair*

*Edie Nelson*  
*Administrative Secretary*







Dr. Jack &amp; Imogene Carter

First, thank you for the holiday messages that came from you to the department or to us personally, and other messages via e-mail coming mostly to Mrs. Carter at [imsym@aol.com](mailto:imsym@aol.com). 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 84 years last October 2003! Imogene is not far behind, passed 39 for sure!! And we will have our 63rd wedding anniversary October 19, 2004. Some of you donated to the Jack Carter Endowed Professorship fund, too, and thanks, or if not, it's not too late to give. Send to the NDSU Development Foundation, 1241 North University Drive, Fargo, ND 58105.

My health problem reported last year fortunately seems quite stable, although took a little dip for 2 to 3 weeks in February due, the experts think, to bad interaction of two prescribed medicines. It seems that one of us has a clinic visit every week or two for routine or other reasons. I mostly feel good and continue usual activities at home or NDSU most days, and outdoors in growing season. Imogene continues to be troubled by an imbalance problem that is not treatable. She had a knee replacement in September of 2002 and is doing very well after 14 months of “recovery”. Our five children and families continue to live and work as in past years--some of you know them. Our oldest grandson was married in 2002 and we have been great-grandparents of a precocious young lady since June, 2003.

I'm still President of the Flax Institute and the last two-day program was March 17-19, 2004, at Fargo--the 60th Flax Institute, with 23 papers and 81 attending from 12 states, three Canadian provinces, two from Poland, one from Czech Republic, one from Russia, one from Pakistan, and one from the Netherlands. Dr. Jim Hammond is still flax breeder and did much of the organizing and planning for the 60th Flax Institute. I also serve as “flax consultant” to the North Dakota Oilseed Council and supervise the research that they fund. Flaxseed provides healthful omega 3 fatty acid, lots of dietary fiber and anticarcinogenic lignans in human nutrition, and for other animals. I recommend your eating about 30 grams or 1/5 cupful of ground flax per day in orange juice, baked foods, or whatever. Flaxseed has been consumed for hundreds of years by people in the countries of some former international students.

Mostly at home I have been doing more cooking than formerly, some maintenance, gardening, and fishing. I grafted five apple trees to multi-variety trees to sell at Bidder's Bowl, and for special friends, and attended Bidder's Bowl (raises funds for NDSU Development Foundation) in October, 2003. Also, we attend home games of Bison football and basketball, especially the lady basketball Bison, and occasionally a baseball game of Fargo-Moorhead Redhawks professional team. The lady Bison basketball team tied for the title this year and are going on to Regional play and maybe National Division II finals, if they play well all games. NDSU moves on to Division I next year.

In retrospect, many of you have influenced our work and lives favorably, and we yours, we hope. We are unlikely to attend future Agronomy meetings and the Blizzard Party, so please stop to see us as you pass this way, or write or e-mail, and best wishes for a HAPPY and HEALTHFUL 2004.

*Dr. and Mrs. Carter*

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*(NDSU e-mail [lisa.johnson@ndsu.nodak.edu](mailto:lisa.johnson@ndsu.nodak.edu))*



## PLANT SCIENCES FACULTY

Schneider, A. A.	Prof. & Chair ( <i>crop production</i> )
Berglund, D. R.	Prof. ( <i>ext. agr., row crops, specialty crops</i> )
Berzonsky, W. A.	Asst. Prof. ( <i>HWS, spec./sawfly wheat brdg.</i> )
Cai, X.	Asst. Prof. ( <i>wheat genetics</i> )
Carena, M. J.	Asst. Prof. ( <i>corn breeding and genetics</i> )
Chakraborty, M.	Asst. Prof. ( <i>HRS wheat end-quality</i> )
Christoffers, M. J.	Asst. Prof. ( <i>weed science/genetics teaching</i> )
Dai, D. W.	Asst. Prof. ( <i>woody plant phys./biotech.</i> )
Deckard, E.L.	Prof. ( <i>crop physiology</i> )
Dexter, A. G.	Prof. ( <i>ext. weed phys., sugarbeets</i> )
Elias, E. M.	Prof. ( <i>durum wheat breeding</i> )
Franckowiak, J. D.	Prof. ( <i>2-row barley breeding, genetics</i> )
Grafton, K. F.	Prof. ( <i>dry bean breeding</i> )
Hammond, J. J.	Prof. ( <i>flax/crambe brdg, computer prog.</i> )
Hatterman-Valenti, H.	Asst. Prof., ( <i>high value crop prod.</i> )
Helms, T. C.	Assoc. Prof. ( <i>soybean breeding, genetics</i> )
Herman, D. E.	Prof. ( <i>woody plants, ornamentals</i> )
Horsley, R. D.	Prof. ( <i>6-row barley brdg, genetics</i> )
Howatt, K. A.	Asst. Prof. ( <i>weed science-annual weeds</i> )
Johnson, B. L.	Asst. Prof. ( <i>sunflower, minor, new crop prod.</i> )
Kegode, G. O.	Asst. Prof. ( <i>weed biology &amp; ecology</i> )
Kianian, S. F.	Assoc. Prof. ( <i>HRS, durum wh. germ. enhanc.</i> )
Lee, C. W.	Prof. ( <i>ornamentals, turf/biotech.</i> )
Li, D. M.	Asst. Prof. ( <i>sports turf management</i> )
Lym, R. G.	Prof. ( <i>perennial weed control</i> )
Manthey, F. A.	Asst. Prof. ( <i>durum and pasta quality</i> )
McClellan, P. E.	Prof. ( <i>dry bean genetics, biotechnology</i> )
McMullen, M. S.	Assoc. Prof. ( <i>oat breeding and genetics</i> )
Mergoum, M.	Assoc. Prof. ( <i>HRSW breeding</i> )
Messersmith, C. G.	Prof. ( <i>weed science, physiology</i> )
Meyer, D. W.	Prof. ( <i>forage prod. and physiology</i> )
Ransom, J. K.	Assoc. Prof. ( <i>ext. agronomist, sm grains</i> )
Schwarz, P.	Assoc. Prof. ( <i>malting barley quality</i> )
Smith, R. C.	Prof. ( <i>extension horticulture/turfgrass</i> )
Thompson, A. L.	Asst. Prof. ( <i>potato breeding</i> )
Thostenson, A.	Ext. Spec. ( <i>pesticide program spec.</i> )
Williams, M. D.	Seedstocks Director
Zeleznik, J. D.	Ext. Forester ( <i>urban/rural forestry</i> )
Zollinger, R.K.	Assoc. Prof. ( <i>extension weed control</i> )

## ADJUNCT PROFESSORS

Anderson, J. V.	USDA ( <i>plant biochemistry</i> )
Campbell, L. G.	USDA ( <i>sugarbeet genetics</i> )
Carr, P. M.	Dickinson Res/Ext Center ( <i>sustainable ag.</i> )
Chao, W. S.	USDA ( <i>molecular biology/weeds</i> )
Dahleen, L. S.	USDA ( <i>barley genetics, biotechnology</i> )
Faris, J. D.	USDA ( <i>wheat molecular genetics</i> )
Foley, M. E.	USDA ( <i>weed biology</i> )
Henson, R. A.	Carrington Res/Ext. Center ( <i>crop prod.</i> )
Horvath, D. P.	USDA ( <i>perennial weed physiology</i> )
Hu, Jinguo	USDA ( <i>sunflower genomics</i> )
Jan, C. C.	USDA ( <i>sunflower cytogenetics</i> )
Jauhar, P. P.	USDA ( <i>wheat cytogenetics</i> )
Klotz, K. L.	USDA ( <i>sugarbeet physiology</i> )

Lulai, E. C.	USDA ( <i>potato physiology</i> )
Miller, J. F.	USDA ( <i>flax and sunflower genetics</i> )
Seiler, G. J.	USDA ( <i>sunflower/sugarbeet germplasm</i> )
Sowokinos, J. R.	USDA ( <i>potato physiology</i> )
Suttle, J. C.	USDA ( <i>potato physiology</i> )
Xu, S. S.	USDA ( <i>HRS development</i> )

## PROFESSOR EMERITUS/RETIRED

Boe, A. A.	Prof. Emeritus ( <i>veg. brdg/tissue culture</i> )
Carter, J. F.	Prof. Emeritus ( <i>flax utilization</i> )
Cross, H. Z.	Prof. Emeritus ( <i>corn genetics, breeding</i> )
Duysen, M. E.	Prof. Emeritus ( <i>cellular regulation</i> )
Foster, A. E.	Prof. Emeritus ( <i>barley brdg., biometrics</i> )
Frohberg, R. C.	Prof. Emeritus ( <i>HRS brdg, genetics</i> )
Holland, N.	Prof. Emeritus ( <i>fruits, woody plants</i> )
Lund, H. R.	Prof. Emeritus ( <i>potato brdg./genetics</i> )
Maan, S. S.	Prof. Emeritus ( <i>wheat gen., cytogenetics</i> )
Nalewaja, J. D.	Prof. Emeritus ( <i>weed sci., physiology</i> )
Nelson, D. C.	Prof. Emeritus ( <i>potato physiology</i> )
Smith, G. S.	Prof. Emeritus ( <i>wheat breeding</i> )
Spilde, L. A.	Prof. Emeritus ( <i>seedstocks director</i> )
Whited, D. A.	Prof. Emeritus ( <i>genetics teaching</i> )

## POSTDOC. RESEARCH FELLOW/VISITING SCIENTISTS PROJECT LEADER, COUNTRY, AREA OF RESEARCH

Abu Hamad, W.	Elias (Jordan - <i>durum wheat breeding</i> )
Chen, J.	Hu (China - <i>sunflower genomics</i> )
Duan, L.	Cai (China - <i>wheat genetics</i> )
Feng, J.	Jan ( <i>sunflower cytogenetics</i> )
Gelin, J.	Grafton (Haiti - <i>bean breeding</i> )
Gonzalez, J.	Kianian (Spain - <i>scab resistance/spr wht</i> )
Gu, X.	Foley (PRC - <i>weed biology</i> )
Hossain, K.	Kianian (Bangladesh - <i>wheat genomics</i> )
Jia, Y.	Chao (China - <i>perennial weeds</i> )
Lee, S.	Lee (Korea - <i>ornamentals, turf</i> )
Lu, H.	Faris (China - <i>wheat genetics</i> )
Niu, Zhi Xia	Elias (China - <i>durum breeding</i> )
Rojas-Cifuentes, G.	Grafton (Chili - <i>bean breeding</i> )
Satyavathi, V.	Jauhar (India - <i>wheat cytogenetics</i> )
Zhou, L.	Lulai ( <i>potato physiology</i> )

## RESEARCH SPECIALISTS/ TECHNICIANS/CHEMISTS

Auwarter, Eric	(potato breeding)
Barr, John	(malting barley)
Baumann, Robert	(oat breeding)
Bellon, Mike	(seed processing)
Berglund, Lois	(HRS wheat end-quality)
Carlson, Kay	(wheat cytogenetics)
Chaput, Larry	(woody plants)
Christianson, Kathryn	(perennial weeds)
Ciernia, Mark	(weed control)
Davidson-Harrington, Janet	(weed science)
Deckard, Brenda	(student services director)
Doehler, Eric	(wheat breeding/USDA)



**RESEARCH SPECIALISTS/TECHNICIANS/  
CHEMISTS CONTINUED**

Duppong, Lisa (high value crop production)  
 Erickson, Ann (potato breeding/genetics)  
 Faller, James (HRS wheat breeding)  
 Faller, Jason (barley breeding)  
 Farnsworth, Bryce (potato breeding)  
 Friederichs, Steve (high value crop production)  
 Genoch, Roger (barley breeding)  
 Gillespie, James (malting barley quality)  
 Green, Marci (barley breeding)  
 Gregoire, Pete (crop physiology)  
 Gulleson, John (HRS wheat breeding)  
 Hanson, Dave (soybean breeding)  
 Hatzenbeller, Debra (malting barley quality)  
 Hegstad, Justin (wheat germplasm enhancement)  
 Hinsz, Brent (durum and pasta quality)  
 Hochhalter, Martin (barley breeding)  
 Kercher, Kreg (durum wheat breeding)  
 Kimberlin, Cheryl (plant physiology/USDA)  
 Klindworth, Daryl (wheat genetics/USDA)  
 Lafta, Abbas (potato physiology)  
 Laschkewitsch, Barb (vegetables & perennials)  
 Leach, Gene (hard spring wheat)  
 Lee, Rian (dry bean genetics/biotechnology)  
 Lindberg, Lyle (flax breeding)  
 Luecke, John (sugarbeet weed control)  
 Magnuson, Victoria (woody plants biotechnology)  
 Maianu, Josef (seedstocks)  
 Mark, Sandra (weed science)  
 Martin, Larry (soybean breeding)  
 Mayland, Paul (high value crop prod)  
 McArthur, Rachel (barley genetics/biotech/USDA)  
 McNamara, Heather (malting barley quality)  
 McMonagle, Kelly (durum quality)

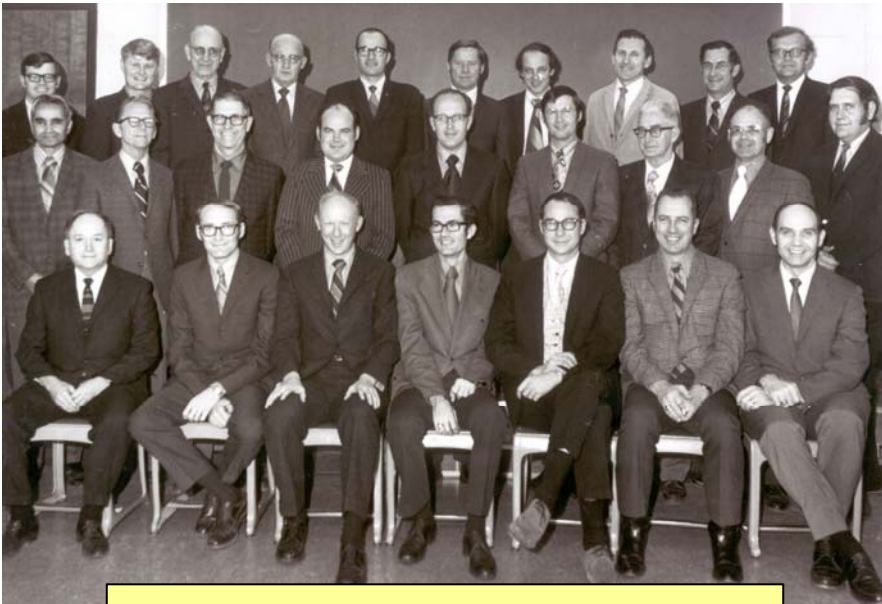
Meyer, Scott (extension small grains)  
 Nudell, Robert (forages)  
 Olson, Rachel (wheat quality)  
 Olson, Truman (wheat quality)  
 Osborne, John (durum and pasta quality)  
 Pederson, Jeremy (seedstocks)  
 Pederson, Shauna (weed science)  
 Petersen, Paula (crop production)  
 Ries, Jerry (weed survey)  
 Roach, Ron (weed control)  
 Stancyk, Stan (durum breeding)  
 VanderWal, Jody (dry bean breeding)  
 Wanner, Duane (corn breeding)  
 Wentz, Mary (wheat germplasm enhancement)  
 Wijetunga, Theja (molecular markers)  
 Zhou, Zhingkai (weed science)

**OFFICE STAFF**

Aanstad, Robin Johnson, Lisa  
 Blaskowski, Michelle Nelson, Edie  
 Brantseg, Sue Odegaard, Mary Beth  
 Buringrud, Eileen Perrin, Char  
 Erdmann, Tammy Welter, Melissa  
 Heinz, Louise

**GRADUATE STUDENTS AND  
ADVISORS 2003/2004**

Bergh, Lisa Horsley  
 Bhamidimarri, Suresh Kianian/Elias  
 Caffarel, Juan Carlos Franckowiak  
 Carvalho, Clarissa Carena  
 Chen, Xunfen Cai  
 Chen, Zhiwei (Allen) Hatterman-Valenti  
 Chenggen, Chu Faris



**DO YOU RECOGNIZE ANY OF THESE FACULTY  
FROM 1971??**

**HOW ABOUT THIS  
YOUNG MAN??**



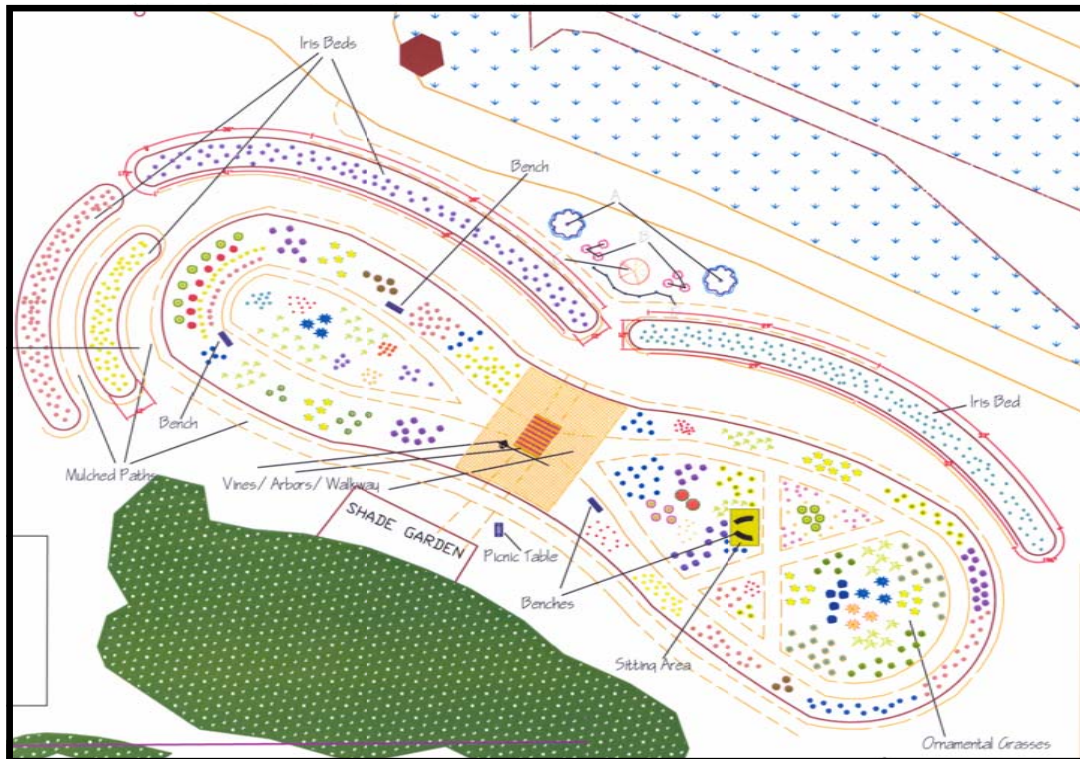
**SNAPS FROM  
THE PAST**





Dahl, Lisa	Howatt	Melani, Marcelo	Carena
Dash, Snigdharani	Johnson	Mittal, Shipra	Dahleen
Davies, John	Berzonsky	Nazre, Gauri	Kegode
Dilawari, Mridull	Cai	Oberoi, Kiran	Kianian
Dvorak, Eric	Howatt	Odron, Genaro	Schwarz
Eidenshink, John	Berzonsky	Oliver, Rebekah	Cai
Gebhard, Bryan	Berzonsky	Osenga, Mary	Kianian
Ghosh, Pradyot	Chakraborty	Osorno, Juan Manuel	Carena
Hatzenbeller, Mark	Schwarz	Ostby, Clint	Mergoum
Hu, Min	Carena	Reddy, Leela	Faris
Huhn, Melissa	Elias	Rust, Jamie	Kianian
Hyrkas, Alyson	Carena	Sadosky, Paul	Schwarz
Jacobson, Kevin	Dexter	Schorno, Anton	Manthey
Janzen Richardson, Laurie	Lym	Sebelius, Angela	McMullen
Jha, Ajay	Dahleen	Sezegen, Bahadir	Carena
Johnson, Chris	Dai	Singh, Keti	Manthey
Jumbo, McDonald	Carena	Sinha, Shalini	Manthey
Kandikonda, Aruna	Christoffers	Travnicek, Andrea	Lym
Kloster, Jamie	Dexter	Van Becelaere, Guillermo	Miller
Krashenninnik, Nadejda	Franckowiak	Varanasi, Vijaya	Thompson
Kumar, Sunil	Faris	Vilaro, Diego	McMullen
Lamb, Kenneth	Horsley	Waletzko, Angela	Hatterman-Valenti
Lee, Sung Eun (Theresa)	Lee	Wang, Ju	McClellan
Lewis, Ruth	Lym	Wang, Tao	Cai
Li, Runzhi	Xu	Werk, William	Helms
Lin, Rongshuang	Horsley	Xu, Xin	Elias
Lubenow, Lesley	Johnson	Yalla, Saujanya	Manthey
Matkovic, Kornelija	Chakraborty	Yu, Guotai	Franckowiak
Mathew, Sudeep	Hatterman-Valenti	Zhang, Guorang	Mergoum

FUTURE HORTICULTURAL RESEARCH AND DISPLAY GARDENS PHASE I





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Phone: 701-231-7971  
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Email: [albert.schneider@ndsu.nodak.edu](mailto:albert.schneider@ndsu.nodak.edu)

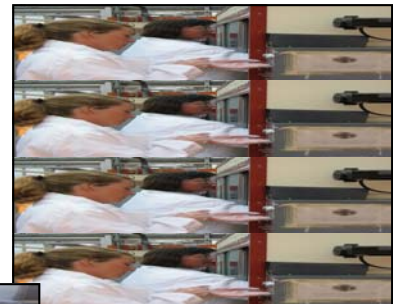
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Enjoying Dessert Fest 2003



Dr. Schneider and Ian Edwards



Kathy Christianson and  
Laurie Janzen Richardson  
spraying grasses



Mum Show held in Loftsgard  
Hall December, 2003



Andrea Travnicek watering seedbank trays



Kirk Howatt, Brad Ramsdale,  
Janet Harrington-Davidson  
at Brad's going away party.