Mackenzie’s research results show huge change

Research and the findings done at UNL’s Center for Plant Science Innovation could play a role in helping meet the world’s dramatically increasing need for food, said Sally Mackenzie, Department of Agronomy & Horticulture and School of Biological Sciences, plant scientist.

Scientists have focused on a gene called MSH1, short for MUTS Homolog1, which is present in every plant. They discovered that if they “silenced” that gene in some plants, their growth patterns changed dramatically—dwarfed, highly branched and behaving as if they have seen high levels of stress. Then, after they reintroduced the gene and crossbred it with a plant that wasn’t altered, the crossbred plant showed signs of enhanced growth, vigor, lodge resistance, high biomass production and higher yield.

Those changes in some cases were huge: up to a 100 percent increase in above-ground biomass, up to a 70 percent increase in yield in sorghum, for example.

The process is called epigenetics.

Mackenzie stresses these key points about her lab’s work:

- It’s not transgene-mediated modification.
- It’s worked in several crops so far—not so-called model crops, but actual agronomically useful crops, most importantly soybean, sorghum and millet, and also tobacco and tomatoes.
- These changes can occur in just two generations of plants, rather than 10 or more it can take for genetic modifications to take hold.

Besides soybean and sorghum, it seems likely there’s great potential for epigenetics to improve crops such as cotton and dry beans.

“And if you could do this in rice and wheat, you could perhaps change the world,” Mackenzie said. It’s promising, but I don’t want to overhype this.”

It’s important we explore this for every potential it offers for addressing some of the challenges in agriculture,” she added.

See issuu.com/nebraskaalumni/docs/goodnuz2013spring?mode=window.

Paraphrased from “With This Gene, Silence is Golden,” by Dan Moser, GOODNIZ, a Nebraska Alumni Association/University of Nebraska Foundation publication.
Calendar of Events

April 1: Plant Pathology Seminar–“EFR-induced plant immunity can be effective against the Plant Pathogen Pseudomonas syringae,” Fan Yang, 4 p.m., 264 Keim.
April 5: Department Seminar–“Genetic, genomic, biochemical and cell biological insights into maize endosperm texture and protein quality,” David Holding, 3:30 p.m., 150 Keim.
April 8: Plant Pathology Seminar–“Characterizing GATA factor control of nitrogen scavenging by the rice blast fungus Magnaporthe oryzae and its implications for the hemibiotrophy,” Margarita Marroquin and TBA, Jyothi Kumar, 4 p.m., 264 Keim.
April 10: UNL Research Fair 2013, 1–5 p.m., Regency Suite & Centennial Room, NU.
April 11: EHS Safety Colloquium, “Enhancing Laboratory Safety,” Dr. Craig Merlic, UCLA, 1:30-3 p.m., NU, Regency Suite.
April 12: Department Seminar, Natalia de Leon, University of Wisconsin, 3:30 p.m., 150 Keim.
April 12: Agriculture & Horticulture Appreciation Banquet, 6 p.m., Lied Commons, city campus.
April 15: Plant Pathology Seminar–“Multifactorial analysis of mortality of soybean cyst nematode Heterodera glycines populations in Nebraska,” Oscar Perez-Hernandez, 4 p.m., 264 Keim.
April 19: Department of Agronomy & Horticulture Spring BBQ, 11:30 a.m.–1 p.m., 150 Keim and courtyard.
April 19: Department Seminar, Don Blackburn, Dow Agro Sciences, 3:30 p.m., 150 Keim.
April 26: Department Seminar, Tommy Carter, NCSU, 3:30 p.m., 150 Keim.
April 27: Spring Affair, 9 a.m.–4 p.m., Lancaster Event Center.

In the news

Lambe’s Horticulture Entrepreneurship students take top honors

Laura Stevens receives second place at the UNL New Venture Competition March 11.

On March 11, UNL undergraduate and graduate students competed for a $50,000 Grand Prize in the UNL Venture Competition, as part of Entrepreneuring Days@UNL.

This competition provides UNL students with the opportunity to compete in a business planning competition to get feedback and financing for their ideas. The grand prize money must be used to start a business. The winning team is then entered into UNL Global New Venture Competition, which is open to students from around the world.

Two Agronomy & Horticulture graduate students, from Assistant Professor Dave Lambe’s HORT 288 Horticulture Entrepreneurship class, competed in the competition. Lambe helped the students develop their ideas.

Laura Stevens earned second place in the graduate student competition for her Aerial AgVantage business idea.

This business offers detailed, thorough agricultural crop scouting throughout the season with an unmanned aerial vehicle equipped with cameras in the visible and near-infrared spectrums. Aerial images also can be fused with yield and soil test data to create variable rate maps for inputs such as fertilizer, herbicides and seed, allowing farmers to better manage their fields.

Alex Kohel placed third in the graduate student competition with his business idea—Kamterter.

This business developed a turf-grass repair kit that can quickly fix dead spots on lawns, athletic fields, and golf courses. The enhanced turf-grass seed will germinate rapidly, uniformly and under stressed conditions. Kamterter Products LLC is an established seed-enhancement company. This product has been researched and statistically analyzed for the past three years at UNL.

Laura Stevens is advised by Dr. Richard Ferguson and Dr. Roch Gaussoin advises Alex Kohel.


Andersen hired as research tech

Aaron Andersen, began the position of Research Technologist for UNL Department of Agronomy & Horticulture on Jan. 1, 2013 and is supervised by Aaron Lorenz.

Aaron is a native of Elkhorn, Nebraska and graduated from UNL with a bachelor’s degree in Agronomy. Aaron hopes to complete his master’s in Agronomy from UNL this May.

Aaron is married to Annie Andersen who is a recent graduate of CASNR.

Aaron enjoys helping out on the farm as much as possible in his spare time.
The UNL Teaching Council and UNL Parents Association honored faculty and staff at an annual recognition ceremony on Feb. 8. Certificates of recognition for contributions to students were given during the ceremony. The awards provide positive feedback to campus faculty and staff about the work they do with students. Agronomy & Horticulture Professor and Geneticist Don Lee was awarded a certificate for the 21st time.

The Parents Association solicits nominations through a mailing, asking parents to nominate a faculty or staff employee who has made a significant difference in their student's life. Congratulations Don!

Staff advisory committee news

SAC Meeting held Jan. 30

Two requests for information were recently received in the Digital Suggestion Box:

1. A question regarding the results of the Five-Year Department Review. Dr. Ferguson reported that the process has not been completed. He and Dr. Gaussoin are still working on finalizing the work, then it will go to the dean for approval.

2. A question regarding the results of the Future Committee minutes, which had been suggested at the staff meeting about that review. Dr. Ferguson agreed to follow-up on this and see if a summarized (and edited for confidential information) version of the minutes could be provided.

The web-based Staff Directory is progressing. Aaron Franco is working to have pictures of staff and some information on the page. Current photos are needed for many staff.

The SAC webpage is now live at agronomy.unl.edu/sac. The site includes photos of SAC members and notation of their terms of office and SAC offices held, and full copies of the minutes of past meetings. There will soon be links to the new department awards and the application and nomination forms.

Further work on the staff evaluation/development forms has been tabled due to the rapid progress IANR appears to be making on a new format that will be mandated to all of IANR.

A proposed form for applications/nominations was furnished to committee members along with some guidelines.

Attention Agronomy and Horticulture staff members—do you have a conference you want to attend, or a training session you are interested in, but your supervisor can’t fund it? Here is your chance to get some assistance paying for it. Beginning this year, the Department of Agronomy and Horticulture will annually fund a professional development award of up to $500. (If two or more applications are made that total $500 or less, the award can be split.) Apply for the award on the form available on the SAC web page agronomy.unl.edu/sac.

A & H Special Contributions Award Nominations Sought

Have you been impressed by a coworker, noticed someone going above and beyond the requirements of their job, or been amazed by someone's dedication to making the Department of Agronomy and Horticulture shine? Then nominate that staff person for a Special Contributions Award. These awards will be granted based on nominations from other members of the department. Anyone in the department may make nominations, not just supervisory personnel. Nominations will be accepted on a rolling basis. Submit nominations on the form available on the SAC web page agronomy.unl.edu/sac.

Condomences

The department offers sincerest condolences to Martin Massengale, whose brother Glen, from Kentucky, passed away on Feb. 24.

And to Laurie Hodges, whose father, Malcom Hodges, passed away on March 1 at the age of 98.
News from the HAPPI Business Center

Changes with P-card purchases

Please start using the new P-card (purchasing card) form with your next P-card purchase. The most significant change is the addition of the justification box (Reason why Prime Vendor not used.) This is used to explain why a P-card is being used instead of eSHOP or a Prime Vendor. This form can be found on the department server under Forms/Purchasing/Pcard Voucher1-2013 REVISED.pdf or on the Office Pros web page at agronomy.unl.edu/c/document_library/get_file?uuid=f5965a81-2ef8-4c9a-98cc-0107957150dd&groupId=4128273&.pdf.

It is fillable and savable for your convenience. If you choose to hand-write your voucher, please be sure that it is legible.

We have had several questions concerning the P-card Voucher and would like to clarify:

1. Business Purpose
   This box is used to describe what business purpose the item is specifically being used for. It is the specific reason why the item is needed for your project or program. An example of an incomplete business purpose we see often is “Lab Supplies.” We need to document the purpose of the supplies.

A couple examples of good business purposes are:
- Item/Description: Virus detection kits Business purpose: Used for identification of viral plant pathogens
- Item/Description: Repair of moisture machine Business purpose: Machine used in research for determining crop yield

2. Location of Items Purchased or Item Location
   This line on the P-card voucher is meant for the information of where the item is stored or located, not the address of the store where the item was purchased.

3. If using your P-card for Conference Registration
   When paying for conference registrations please attach documentation that includes the name of the individual registered, title of conference, place where conference will be held and dates of conference. If the conference registration is paid for with personal funds, please include an agenda with your expense voucher and receipts.

Here are several reminders:
- When ordering on-line, please do a screen print of every page of the order.
- If you are not familiar with eSHOP or need access and training, please visit with one of the HAPPI Business Center staff.

Conflict of Interest Policy

Faculty and staff are reminded to follow and review UNL’s “Conflict of Interest” policy. The policy (No. 6.2.1.12, approved by the NU Board of Regents) states that the university is not permitted to purchase any goods or services from faculty or staff without prior approval of Chris Jackson, Vice Chancellor for Business and Finance. Also, university funds shall not be used for personal use of employees.

A conflict of interest can exist when a UNL employee or faculty member’s immediate family member engages in business with UNL.

For more information, see these links: nebraska.edu/docs/board/RegentPolicies.pdf, research.unl.edu/orr/conflict.shtml, or procurement.unl.edu/news/purchases-involving-university-personnel.

Please contact the HAPPI Business Center with any questions.

Spring BBQ to be held April 19—RSVP by April 9

The Agronomy & Horticulture Spring BBQ will be held April 19, 11:30 a.m.–1 p.m. in 150 Keim and the courtyard.

Go to agrohortspringbbq.eventbrite.com and choose either a hamburger or veggie burger by April 9.

Bring a side dish to share if your last name begins with A–L or a dessert, if your last name begins with M–Z.

The Activities Committee will provide burgers, drinks, baked beans, condiments, and table service.
News from the safety committee

Laboratory Safety Colloquium to be held April 11

Environmental Health & Safety (EHS), in partnership with the Office of Research & Economic Development, is sponsoring a campus-wide Laboratory Safety Colloquium, “Enhancing Laboratory Safety,” presented by Dr. Craig Merlic, UCLA Department of Chemistry and Biochemistry. This will take place Thursday, April 11 at the city campus union in the Regency Suite from 1:30–3 p.m.

At this session, to be held in conjunction with the Spring UNL Research Fair 2013, Dr. Merlic will share his experience in building the laboratory safety culture at UCLA following a laboratory accident that claimed the life of a staff researcher in 2009.

Use shipment/package log

A new shipment/package log folder is now located on the coffee table, next to shipments in 279 PLSH. The Office Pros would like everyone to sign next to their name upon receiving packages so that the shipments can be tracked and stay organized. Thank you.

Help for travel planning

The Office Professionals can assist department faculty, staff and students with travel arrangements and completing a pre-trip Travel Authorization. Please contact Kathy Schindler at kschindler1@unl.edu or 2-1508 to get started on your travel plans today.

Office pros news and updates

Office Pros welcomes new office associate

Please welcome Nesrin (Nes) Gomez-Vance as a new Office Associate in the Department of Agronomy & Horticulture. Nes started working with the Office Pros in 279 PLSH on March 4.

Prior to working for the university, she lived and worked in New Orleans, LA as the Operations Supervisor at Marriott International. She has also worked as a Control Room Technician at Churchill Downs Simulcast Broadcasting, as a R&D photographer at Lucid SFX Development, and as an interpreter and translator at Multi Language Solutions.

Nes earned her bachelor’s degree from Hacettepe University, Ankara, Turkey and majored in American Culture and Literature, and minored in photography. Nes also completed a certification program in photography through Nazim Photography School, and a hospitality management internship with Columbia Sussex and CIEE.

Nes’ biggest passion is photography, and travel. She also tries to make time for reading, painting, cooking, gardening, swimming, and a long list of creative activities. She enjoys extreme outdoor sports and has a parachuting licence through Turkish Aeronautical Association, and Rock Climbing and Winter Camping licences through HUDOS.

She lives in Lincoln with her husband Joseph Vance and 16 year-old daughter Kali. Joseph is a VSFX Supervisor, currently working with USCIS in Mission Support. Kali is a sophomore at Northeast High School. Nes is originally from Antalya, Turkey.

Student Appreciation Awards Banquet

The student organizations of Agronomy & Horticulture at UNL cordially invite everyone to attend the annual Agronomy & Horticulture Department Appreciation Awards Banquet.

The event will honor and highlight the activities and achievements of students over the past year. This year’s banquet will be held on the evening of Friday, April 12 at the Lied Commons on city campus. A silent auction and social hour will begin at 6 p.m. with the program and meal beginning at 7 p.m. A keynote address and presentations will begin after the meal.

The Lied Commons is located at 301 N. 12th street in Lincoln. Parking is available at city garages Due Place Garage, 1111 Q street and Larson Building Garage, 1317 Q street.

Family and friends are invited and encouraged to come. RSVPs are needed by Wednesday, April 3.

Please enclose $10 per person attending and make checks out to AHGSA Banquet Fund. An RSVP is REQUIRED to attend this banquet. Questions can be directed to Katherine Frels at 641-740-0270 or email katherine.frels@gmail.com.
NCR-SARE Graduate Student Grant Call for Proposals

The 2013 North Central Region Sustainable Agriculture Research and Education Program (NCR-SARE) Graduate Student Grant Call for Proposals is now available online at www.northcentralsare.org/Grants/Our-Grant-Programs/Graduate-Student-Grant-Program.

Graduate students enrolled at colleges or universities in the North Central region can submit proposals for up to $10,000 to fund sustainable agriculture projects that will be part of their educational programs.

New this year, NCR-SARE will be accepting online submissions for the Graduate Student Grant Program using our online submission system. More information about the online submission system can be found in the call for proposals.

Proposals must be completely submitted to the online system by 4 p.m. CDT, May 9.

Potential applicants can contact Beth Nelson with questions at bethnelson@umrn.edu or 612-626-4436.

Travel grant for Ph.D. students available

This Conference Travel Grant will provide up to $250 per eligible Ph.D. student traveling to national conferences to give first- or single-authored presentations, solo performances or exhibitions at a conference/meeting of regional, national or international stature. Expenses may include transportation registration, lodging and meals. Students must be enrolled at UNL at the time they are presenting their research.

Please contact Marlene Busse at 2-1560 or marlene.busse@unl.edu for an application. The deadline for applications is April 15.

News for and about graduate students

Larrick-Whitmore Travel Grant Program due May 15

The Larrick-Whitmore Graduate Student Travel Grant Program provides funding for travel expenses not to exceed $500.

All currently registered graduate students, whose advisor or co-advisor currently has an ARD research appointment, are eligible to apply. This includes graduate students supervised by research professors of any rank and others with IANR adjunct appointments that have been previously grant-active and such grants or proposals have been recorded with a PCS code of Research and routed via IANR within UNL’s NUGrant system.

The David H. and Annie E. Larrick Student Support Fund was established at the University of Nebraska Foundation in 1998 by Ronald Larrick in honor of his grandparents. It was decided that these funds would be devoted to supporting graduate student travel to professional and scientific meetings. Larrick funds are used to support travel in those fields not specified in the Whitmore Memorial Fund.

The William G. Whitmore Memorial Fund was established at the University of Nebraska Foundation in 1980 as a memorial to William G. Whitmore, a member of the Board of Regents at the University of Nebraska from 1902–1916. The Whitmore fund is specifically designated to support travel of graduate students in the fields of Animal Science, Agricultural Leadership, Education & Communication and Veterinary & Biomedical Sciences.

The application deadline to the department is May 10, 2013, for travel from July 1–Dec. 31. For travel from Jan. 1– June 30, the deadline is Nov. 11, 2013.

Current application forms can be found at ard.unl.edu/awards. If you have questions please contact Marlene Busse at 2-1560 or marlene.busse@unl.edu.

New scholarship available to floriculture grad students

Applications are now being accepted for the Richard T. Meister Scholarship. This new program is open to graduate students in floriculture intending to pursue a career in the land-grant university system with an interest in research, extension or teaching. A $2,500 scholarship will be awarded annually.

The scholarship honors Richard T. Meister, chairman emeritus of Meister Media Worldwide, the company his father founded in 1932 and Greenhouse Grower’s parent company. A staunch supporter of the land grant college system, Meister dedicates this scholarship to the outstanding accomplishments of those in university extension, many of whom he worked with during his long career.

The scholarship is administered by the American Floral Endowment.

To apply for the Richard T. Meister Scholarship, visit Endowment.org. Deadline for applications is May 1, 2013.

Dworak earns award

Scott Dworak, Ph.D. graduate student advised by Dr. Roch Gaussoin, has been selected to represent our department for the 2013 Gerald O. Mott Award.

The selection was based on Scott’s academic achievements, research and teaching contributions, leadership accomplishments, service activities, and personal qualifications.

The award is offered by the Crop Science Society of America (CSSA) and recipients receive a certificate and are recognized in the CSA News. The award honors the first CSSA President, Gerald O. Mott, who trained 75 graduate students during his 45 year career at Purdue University and the University of Florida.

Congratulations Scott!