



North Dakota Soybean Growers Association
1555 43rd Street South, Suite 103, Fargo, ND 58103
(701) 640-5215 | www.ndsoygrowers.com

North Dakota Soybean Growers Association Testimony on Ag Research and Education Priorities State Board of Research and Education December 15, 2015

Good Morning Chairman Beltz and State Board for Agricultural Research and Education members. I am Scott Rising and serve as the legislative director for the North Dakota Soybean Growers Association, representing soybean growers in North Dakota. We appreciate this opportunity to come before you and outline some of our Association's agricultural research and extension priorities for your consideration.

The NDSGA and our sister agency, the North Dakota Soybean Council, have enjoyed an excellent partnership with SBARE and NDSU Research and Extension. We look forward to working with you to help make your SBARE priorities a reality for the benefit of all of North Dakota's agricultural community.

Before we begin, thank you for your collaborative contributions to past SBARE successes. The following are priorities that our Association would like you to incorporate into the coming biennium's funding request.

Soil and water constitute the core elements of our food and fiber, the foundation of our fruitful existence. Soil Health and Water Quality constitute the heart of our SBARE requests.

Water Quality Specialists & Operational Support - The old adage, "Whiskey is for Drink'n and Water is for Fight'n" rings louder each day. Water "rights", who gets what, where, when and how are at the core of the ole adage. While the citizens of our state have plenty of emotional attachment to water resource, what is needed are more effective opportunities to understand the "Science" of our finite resource.

The "Science" includes effective care, efficient use, effective preservation and restoration of the surface and subsurface water resources. Increasing opportunities for understanding water and nutrient management best practices is what we seek in our request.

Water is not an important element to life in our state . . . it is critical. It is the land of 10,000 needed answers . . . to both simple and complex questions. Topics range from water quality for human and livestock consumption; emerging nutrient management requirements and practices; quality water delivery to needed locations; best practices for economic development in our agricultural, manufacturing and urban settings.

The direct transmission of accurate information on the “Science” of water through educational programming and is critical for decision-making by individual citizens, as well as our community and state leaders.

Waldron Hall Replacement – (Capital Project) This facility was initially designed and built in the 1950’s with an addition in the 1960’s and is used as laboratory space for plant-based research programs.

When built, there were less than a dozen field related programs involving plant based research; today, there are more than 13 breeding programs, as many pathology programs, and several soils programs that occupy the space. It is poorly designed for 21st Century Agricultural Sciences, and the numerous program requirements make it very cramped, resulting in inefficiencies and frustrating researchers. There is no adequate long-term seed storage space for breeding and pathology programs – close proximity of field labs to short, mid, and long- term seed storage is critical for efficiency. Effective seed drying and cleaning facilities providing for worker safety and improved efficiencies is critical.

Waldron Hall simply does not have the capability or capacity to meet the day-to-day needs of complex laboratory research necessary in today’s competitive environment and most importantly, the our state’s needs in a food security or crop disease crisis.

Departments and offices located in, or utilizing laboratory space, in Waldron Hall include:

ND Agricultural Weather Network (NDAWN Center)

The North Dakota Agricultural Weather Network, known as NDAWN, is celebrating it’s 26th year of providing weather data to enhance crop management in North Dakota.

Originally designed specifically for agriculture, the network’s 75 stations have proven useful in other areas as well. In a state with extreme weather conditions, access to detailed local weather data can be a valuable resource for everyone.

The network provides weather data that is used in developing various agricultural models such as late blight, degree-day and growth stage for barley, corn, canola, potatoes, sugar beets, sunflowers, wheat and other small grains. NDAWN users also can monitor irrigation scheduling, crop water use and conditions for detrimental insect development.

Plant Diagnostic Lab

For over 40 years, the NDSU Plant Diagnostic Lab has provided unbiased assistance to the general public and professionals in agriculture and horticulture to identify plant pest and disease problems. The lab has been a member of the Great Plains Diagnostic

Network, a region of the National Plant Diagnostic Network, since 2002. A goal of this network is to enhance our ability to detect and diagnose high-risk plant problems more quickly.

Local university plant pest diagnostic labs can provide assistance in solving plant problems. Local experts are often better equipped to address particular questions in our area, since crops, lawns, and other plants and trees around the country experience different problems.

Modest service fees apply on submitted samples for routine diagnosis to the NDSU Plant Diagnostic Lab, and a surcharge is applied to out-of-state samples. The NDSU Plant Diagnostic Lab also independently performs limited seed health testing.

Soil Science

Soil Science is the key factor in food production and is at the forefront of environmental and natural resource issues such as land use, soil contamination, ground water quality and waste disposal.

The Soil Science Department is home to a robust array of sub-disciplines researching every aspect of the soil, including:

Environmental Quality	Soil Fertility
Soil Physics and Hydrology	Soil Management
Agricultural Meteorology and Climatology	Soil Chemistry
Soil Genesis, Morphology, and Classification	Soil Health

Our Soil Science disciplines demand a 21st Century laboratory facility to accommodate successful research facilitating the needed care and maintenance of our soils as we pass them to successive generations.

Plant Pathology

Plant Pathology finds itself similarly situated. Its bachelors, masters and doctorate programs all ache for a 21st Century laboratory facility to accommodate successful analysis of current diseases, while looking to future prevention opportunities.

The faculty has expertise in host-parasite genetics, microbiological ecology, epidemiology, tissue culture, molecular biology, genetic resistance, nematology, bacteriology, mycology, virology and electron microscopy. The Plant Pathology Department faculty has been successful in developing management practices and controls for major diseases.

The research emphasis within the department is placed on small grains, potatoes, oilseeds, beans and prairie forestry. Research projects cover root rots, head blights, foliar diseases, stem rust, leaf rust and viruses of cereals as well as diseases of canola,

dry edible beans, flax, potatoes, soybeans, sugar beets, sunflowers, urban forestry and shelterbelts.

NDSU plant pathologists constantly seek to improve control programs to meet market demands, address environmental concerns and apply emerging technologies. With plant breeders, pathologists find disease resistant genetic materials from domesticated and wild varieties worldwide. New biotechnology techniques enable incorporation of genetic resistance into crop varieties. Pathologists seek safer and more effective pesticide use, including biological controls, for crop protection until adequate genetic resistance is available. They also examine cultural practices to reduce disease threats.

The Forest Pathology conducts one of the only US University research programs in prairie forest pathology; monitoring tree and shrub diseases and developing integrated disease management practices

Seed Health Testing Laboratory identifies seed borne pathogens.

Extension plant pathologists have major outreach programs. They help growers apply research results controlling plant diseases.

Weed Resistance Research and Outreach

Our position is that effective weed resistance solutions are a mix complex issues ranging from research, human understanding and behavioral modification opportunities, and perhaps public policy adaptation.

Weed resistance is an expensive and growing threat to farmers and ranchers today for which there does not seem to be any "silver bullets." Resistance, rooted in a plant's natural ability to adapt in the presence of threats, is a long-term issue.

Effective plant pathology and/or other advanced research field practices may ultimately provide simpler answers for agriculture and others. New or changes in known chemical, biological and cultural practices are also potential solution ingredients. However, we believe the most promising advances available involve human behavioral change in producers understanding, their solution related role acceptance and responses to their particular issues. It is critical for producers to understand and accept that the weed resistance challenge is a long-term battle.

Effective eradication requires correct identification of the offending weeds, timely and correct application elimination processes and continual follow-up to ensure success. There are an abundance of identification and elimination practice guides available, but we are convinced that producer ability to effectively identify and treat threats is not available in abundance.

We understand the difficulty of increasing producer capabilities, but we must find a way to crack the code on this critical issue. We believe producers will need solid educational opportunities beyond what is currently available. They must be provided scenarios of the longer-term importance to their economic future to fight these battles effectively . . . and win!

Unfortunately, we do not have specific solutions to offer. But we know our agricultural community must start the conversation and quickly turn those conversations into effective strategies and activities. A suggested starting point maybe a Weed Resistant Summit to bring producers, producer educators and researchers together to present current information and explore strategy and activity options.

Precision Agriculture Position and Operational Funding in Agricultural & Biosystems Engineering

Precision agriculture isn't just the wave of the future; it is the Now for many crops. Tech savvy farmers are employing precision farming techniques to better manage their cropping operations. Technology adoption rates are rising and the technology life-spans are decreasing. Newer technologies need exploration and adaoption to expand potentials of sensors, sensor vehicles, robotics and computing processes to maintain and grow our competitiveness in global markets.

UAS technology, coupled with other precision Agricultural technologies such as GPS instrumentation, variable rate technology, fertilizer placement options, soil and crop sensors, complemented with ground-based research will provide increasing opportunities our state's farmers and ranchers to manage their resources for maximum profit. Know also that investments in these agricultural technological areas already provide economic deployment well beyond the Ag and academic communities of our state.

Keep North Dakota Farmers and Ranchers competitive in the world marketplace needs to be a priority item in your SBARE deliberations.

Farm Safety Position and Operational Funding in Agricultural & Biosystems Engineering

Agricultural statistics show that Farming and Ranching are among the most dangerous occupations. Far too often those statistics include family members, friends, neighbors and others we are acquainted with. All too often, we, and many we are close to, can tell of near disasters that had potential to claim lives or mane severely. Identification and sharing of evolving safe farm and ranch practices is critical.

Our own experience reminds us that a strong outreach education program focused on safe practices is one of the most effective tools in the safety toolbox. Identifying

elements in the accident chain of events and sharing their role in accidents and near accidents are critical to prevention programming. Equipment and process safety engineering are also essential ingredients in helping to keep our selves alive and whole.

A SBARE priority to maximize our effort to reduce farm and ranch accidents and near misses is a worthwhile and timely goal.

Oaks Irrigation Site Support

The Oaks Irrigation Research Site needs to be a SBARE priority. The site has been an unpolished jewel representing Agricultural Research in southeast North Dakota for too long. The site is valuable irrigation research facility. It is in dire need of core infrastructure improvements, including: the chemical storage shed; rinse pads, etc; shop, office, lab and bathroom faculties.

Robert Titus (local farmer and longtime research site landlord) has bequeathed acreage to the test site, it is time for SBARE to reciprocate and appreciate his action by initiating the updating of the site's infrastructure.

It is our vision that increasing the North Dakota's irrigated lands is low hanging economic development fruit and that every effort must be made to accomplish a vision that incorporates many thousands of additional irrigable acres in North Dakota.

Success Pathways

In conclusion, providing farmers and ranchers with pathways to success is your and our success. Dividends are dependent on investments. Agricultural research success is rooted in people, facility and equipment investments. Peoples' talents, skills and creativity are the most important ingredients, and the most difficult to fund, attract and effectively employ.

We ask that you fully consider our priorities, while stand beside you supporting SBARE's final priority determinations.

Thank You for your time and attention.