MINUTES
Departmental Meeting
Wednesday, December 5, 2012, 9:00 a.m.
129 AGLS

1. 9:00 – 9:20 Welcome/Announcements/Bus Recognition Elliot

SEE ATTACHMENT A
SEE ATTACHMENT B

Tom Payne introduced the new Software Engineer III, Cory Phillips.

Dr. Elliot reminded everyone that Dr. Gary Briers is the Departmental Ombudsman and is the person to contact for concerns or questions.

Annie Specht has taken a position with the University of Nebraska.

Dr. Larke has been appointed to the FFA Board of Directors representing MANRRS.

Dr. Cummings is President-Elect for the National Association of Extension Program and Staff Development Professionals (NAEPSDP).

Reminder that APR – 2012 materials are due to be completed as far as input by January 11. Edits are due by January 18.

Anthony Pannone was recognized for being featured in USA Today on November 30th. Article discussed I Love Farmers and Feed My Soul campaigns. Programs target 14-24 urban youth.

All faculty are invited to Doc At A Distance functions next week. Meetings will be on December 11th and 12th. Clarice will email agenda out to everyone.

Dr. Elliot thanked everyone for their edits on the Policy on Tenure and Promotion, Post Tenure, and Appointment. Document is not ready yet – several clarification issues. It is hoped that a vote to approve the finalized guidelines will come in January.

Landry Lockett brought everyone up to speed on the plans for the Gardens and Greenway Project. Overall the plan is to be purposeful. Will include something like an arboretum and amphitheater. Plans are also for a formal rose garden. Project is a twenty year plan. A budget will be the next step. Dr. Elliot said that he had heard there would be bridges and a coffee shop.

Athletes in Class Policy. Of the over 600 athletes, 120 are in ALEC. It was also announced that Johnny Football had changed majors from Business to ALEC this week. The Associate Director of Athletics would like for attendance to be taken in our classes. Action is taken with as few as two absences. With four the student is in jeopardy. With five the student cannot participate in his sport. Athletics is looking for tutors. Dr. Rutherford said that we are supposed to be notified when athletes are going to miss class. In order for the athletes to let you know they must have a travel schedule in hand. Dr. Elliot reminded faculty that athletics are not to contact us in person.

Study Abroad for 2014. All plans will be made through the Study Abroad Office, not Kenny. You will need to build in the mid-level of service charge.

Registration is open for the AgriLife conference which will be held January 7-9, 2013. The Department will not cover these costs.

ALEC Presidential (Grand Challenge) nominees. Names were requested at the last meeting. They are listed in no particular order (See Attachment A – 2i).

Bus Presentations:
King to Support Staff
M. Payne to Work Study
McKim to Specht and Black
Specht to Roble
Lockett and Rayfield to Maureen Elliot

Peer Advisors to Odom

2. 9:20 – 9:30 ALEC 380 Experiences — ALEC Graduate Students

Slide show of 380 trip. Two minute presentations were given by Anthony Pannone, Will Doss, Crystal Dube, Sarah Ho, Michael Perez, and Austin Williams. Special mention was made on the importance of Dr. Larke's class on diversity. All students commented that service learning and team building were important features of the trip.

3. 9:30 – 9:35 New Development Program Coordinator — Elliot

Debbie read an email from Ambrya Baldwin, the new Development Program Coordinator. "Hello fellow Aggies! I consider it an honor to become the newest addition to the Agricultural Leadership, Education, and Communications department this January! After earning my Business degree from and working several years at the University of Florida, I am no stranger to high-quality universities. Which is why I am excited to begin work with your very distinguished and successful institution, Texas A&M! It's a long drive from the Swamp to Aggieland but my family and I are eager to begin our new life in College Station. My husband, Aaron, is set to begin the Accelerated Paramedic Program at Texas A&M this January and has recently been hired as an E.M.T. for the Washington County EMS department. My four-year-old son, Eli, has talked nonstop about our upcoming move and is excited to start school this January. He keeps asking if he can take the bus and I have to keep assuring him that he is *not* missing anything by being dropped off! My goal is to bring something of value to your department, the university, and the Aggie community through creativity, hard work, and enduring quality. I am beyond excited to take on the newly-formed role of Program Coordinator and look forward to providing solutions and successfully fullfilling my purpose in your department. I look forward to meeting you all and Go Aggies!"

Ambrya will start on January 2.

4. 9:35 – 9:40 Summer/Fall Schedules Audit — Fulton

Moved to faculty section.

5. 9:40 – 9:45 Web Committee — Cochran/Redwine

Redesign of web sites. Focus group being put together. Bill is currently working on making sure the department is compliant as we get ready for an audit.

6. 9:45 – 9:50 AGSS — Andrews/Pannone

Already beginning work on Student Research Week. Applications will be online in January. Also change in format – will be one day of professional development, two ½ day back to back presentations.

7. 9:50 – 10:00 Strengths — Odom/Norgaard

SEE ATTACHMENT C. Great team building exercise.

8. 10:00 – 10:30 Faculty Meeting

- APR — Elliot

Travel Request Form Deadlines

Domestic (30 days prior to trip): e.g., travel January 1, 2013 due by December 1, 2012
International (60 days prior to trip): e.g., travel February 1, 2013 due by December 1, 2012

Upcoming Events

December 5, 8:00 a.m., Holiday Breakfast, 129 AGLS
December 7, Secret Santa
December 11-12, Doc At A Distance Seminar
December 14, Holiday Lunch and Movie
December 14, Commencement at 9:00 a.m. for COALS
December 24-January 1, Holiday Break

Future Departmental Meetings

January 9, Wednesday, 9:00 am, AgriLife Conference
February 12, Tuesday, 2:00 pm
March 7, Thursday, 9:00 am
April 2, Tuesday, 2:00 pm
May 6, Monday, 9:00 am

ALEC: December 4, 2012

1. Congratulations, Thank You, and Welcome:
   a. **Ambrya Baldwin** - Program Coordinator for Alumni Relations and Development Initiatives position
   b. **Cory Phillips** - Software Engineer III
   c. **Gary Briers** has been serving as ALEC Ombudsman and is the go to person if you have concerns or questions that involve the Department.
   d. **Drs. Moore's** (P&T to associate professor) and **Rayfield's** (mid-term review) P&T packets received favorable votes from the College Committee. The College Administrators weigh in now.
   e. We have a Cornhusker amongst us. Congratulations to **Annie Specht**.
   f. **Dr. Larke** FFA Board of Directors representing MANRRS.
   g. AIAEE Conference Reviews. ALEC (non-AIAEE members) came through.
   h. President-Elect for the National Association of Extension Program and Staff Development Professionals (NAEPSDP) **Scott Cummings.**
   i. **Sarah Ho** International Agriculture Academic Scholarship, College of Agriculture & Life Sciences ($650); International Education Fee Scholarship, Texas A&M University ($1000)
2. Announcements:
   a. **APR - 2012**
      i. **Input completed by January 11**
      ii. **Edits completed by January 18**
      iii. An Impact Report will be a part of the minutes and can be used to enhance our ALEC impact statements
   b. Doc@Distance - December 11 & 12 Dr. Murphy will serve as the lead ALEC Administrator during this event.
   c. Ukulima Farm proposals due December 17.
      i. A team consisting of Drs. **Strong, Briers, Elbert**, and **Wingenbach** with **Chris Beilecki** are assembling a proposal.
   d. Thank you to faculty for working on the "Policy on Tenure and Promotion, Post Tenure, and Appointment." The plan is to have it ready for discussion and voting at the January Faculty Meeting.
   e. TAMU Gardens and Greenway Project.
   f. Athletes in Class Policy.
   g. Study Abroad 2014.
   h. AgriLife Conference January 7-9, 2013; $50.00 registration fee to be paid by your faculty funds.
   i. ALEC Presidential (Grand Challenge) nominees:
      i. Daniel Sherrard, Provost EARTH University since 1987.
      ii. David Acker, associate dean of academic and global programs in the College of Agriculture, Iowa State.
      iii. Dr. Miley Gonzalez is the Former Under Secretary for Research, Education, and Economics at USDA.
      iv. Dr. Don Dillman is Regent's Professor and Deputy Director for Research and Development of the Social and Economic. Sciences Research Center (SESRC) at Washington State University.
      v. Dr. Rick Foster, Professor, W.K. Kellogg Chair in Food, Society and Sustainability, Michigan State.
      vi. Mr. Roger Thurow, Sr Fellow for global agriculture & food policy at The Chicago Council on Global Affairs.
      vii. Mr. Leroy Shafer, Houston Livestock Show and Rodeo (HLSR) vice president and chief operating officer.
   j. **Anthony Pannone,** featured in USA Today 11/30/12
3. Publications/Presentations:
   a. Southern Region AAAE
      i. Using Critical Reflection as a Means of Promoting Social Change in Leadership Development Students. **Sandlin, M.** & **Odom, S.**
      ii. Discrepancy Analysis of Secondary Agricultural Science Teachers Ability to Teach, Ability to Perform and Knowledge Factors of Social Emotional Learning in Agricultural Educational Curriculum. **Hanagriff, R., Odom, S., McKim, B.,** & **Moore L.**
      iii. "The Effects of GPA and Gender on Students' Acceptance of Mobile Learning in a Critical Issues in Agricultural Leadership Course" **Ho, S., Odom, S.,** & **Strong, R.**
      iv. **Murphrey, T. P., Rutherford, T.,** Doerfert, D. Edgar, L. D, & Edgar, E. W. (2013). An Evaluation of Usability of a Virtual World for Students Enrolled in a College of Agriculture.
      v. **Sandlin, M., Murphrey, T. P., Lindner, J.,** & **Dooley, K.** (2013). Agricultural Students' Attitudes and Opinions: Can Reusable Learning Objects Alter Students' Perceptions of an International Setting?
      vi. **Sanagorski, L., Murphrey, T. P.,** Lawver, D., Baker, M., & **Lindner, J.** (2013). Measuring Florida Extension Faculty's Agricultural Paradigmatic Preferences.
      vii. **Strong, R., Irby, T. L.,** & Dooley, L. M**.** (accepted). Students' mobile technology behavioral intentions: The influence of self-efficacy, level of self-directedness, and grade point average.
      viii. **Wooten, K., Rayfield, J. & Moore, L.** Identifying STEM Concepts Associated with Junior Livestock Projects
      ix. **Doss, Hanagriff,** & **Rayfield** Perceptions of {State} FFA Scholarship Recipients Regarding their Level of FFA Involvement, Post-Secondary Preparation, Value of FFA Scholarship Support and Self-Perceived Success in Higher Ed
   b. **Murphrey, T. P., Sandlin, M. R., Lindner, J. R.,** & **Dooley, K. E.** (2012, Accepted). Reusable Learning Objects: Faculty Perceptions and Best Practices in a College of Agriculture. NACTA Journal.

c. "Are Undergraduate Teaching Assistants Developing Skills that Enhance the Outcomes of their Discipline? An Examination of the Process and Results of an Assessment of Undergraduate Teaching Experiences in the Leadership Discipline," presentation at the 13th Annual Texas A&M University Assessment Conference. **Odom, S., Ho, S. & Vann, M.**
d. 30th Annual Conference for the Association for Career and Technical Education Research, November 2012, Atlanta, GA
   i. 1st Place, Outstanding Conference Research Paper., Saucier, P. R., **McKim, B. R.**, Muller, J. E., & Kingman, D. M. (2012, November). Assessing performance and consequence competence in a technology-based professional development for agricultural science teachers: An evaluation of the Lincoln Electric Welding Technology Workshop.
   ii. **Rayfield, J., Murphy, T., Briers, G. & Lewis, L.J.** Identifying Innovative Agricultural Education Programs.
e. AIAEE
   i. "A Case Study of Best Practices for Study Abroad Programs" **Lockett, L., Wingenbach, G.** & **Moore, L.**
   ii. "International Service-learning: A Case Study in Chajul, Guatemala" **Black, C., Moore, L., Wingenbach, G.,** & **Rutherford, T.**
   iii. **Sanagorski, L.,** & **Murphrey, T. P.** (2013). Defining Sustainable Agriculture Based on Input from Individuals Involved in International Agricultural and Extension Education.
   iv. **Sanagorski, L.,** & **Murphrey, T. P.** (2013). A Snapshot of the Membership: Examining AIAEE Members' Agricultural Paradigms.
   v. Edgar, L. D., Edgar, D. W., **Rutherford, T. A.,** Doerfert, D., & **Murphrey, T. P.** (2013). An Assessment of Students' Perceptions, Knowledge, and Skills Based on Crisis-Related Tasks and Activities: A Critical Look at Second Life™ Training.
   vi. **Sandlin, M. R., Lindner, J. R.** (Accepted). Consumer attitudes about the fruit and vegetable source in Trinidad and Tobago.
   vii. **Sandlin, M. R., Walker, T. J., Lindner, J. R., & Strong, R.** (Accepted). Faculty abroad programs: Addressing local problems and curricula development.
   viii. **Hardcastle, J. C., James, L. E., Alvis, S., Sandlin, M. R., Rutherford, T., & Wingenbach, G.** (Accepted). Best practices: Using mobile technologies for data collection in a developing country.
   ix. **Strong, R.,** Dooley, L. M., **Irby, T. L.,** & **Snyder, L. U.** (accepted). Acceptance and use of Twitter in disseminating agricultural statistics to Mexican banks.
   x. **Linder, B. W., & Strong, R.** (accepted). Extension solutions for global childhood obesity.
   xi. Wynn, J. T., Coppedge, R. H., & **Strong, R.** (accepted). Future IPM Trends in [Country]: A Qualitative Study of Farmers' Perspectives.
   xii. **Irby, T. L., & Strong, R.** (accepted). A descriptive inquiry into students' mobile learning acceptance.
   xiii. **Luckett, M. & Dooley, K. E.** (2013). Monitoring and Evaluating Adoption Behavior and Integration after an Educational Training Program in Hazaribag, India.
f. **Murphrey, T. P. & McKim, B.** (2012). Technology and Evaluation: How Can Technology Increase the Effectiveness and Efficiency of Evaluation? Presentation for the 2012 Annual American Evaluation Association Meeting, Minneapolis, Minnesota held October 27, 2012.
g. **Boyd, B.L., Moore, L.L., Williams, J. & Elbert, C.D.** (2012). Barriers to the attainment of global leadership competencies. International Leadership Journal, 4(11), 41-55.
h. **Ferrell, S. K., Boyd, B. L., & Rayfield, J.** (2013, in press). Texas FFA Officer Perceptions of Good Followership. Journal of Leadership Education, 12(1).
i. **Bading, C., Boyd, B.L.,** Lawver, D., Ulmer, J., & Boleman, C. (2012, in press). Youth voice: Developing future leaders. Journal of Youth Development - Bridging Research and Practice, 7(3).
j. **Irby. T. L., & Strong, R.** (in-press). Agricultural education students' acceptance and self-efficacy of mobile technology in classrooms NACTA Journal.
k. A Rank Ordered Discrepancy Assessment of Commodity Association Member's Perceptions of Product Value and Breed Performance Data. Global Business and Economics Conference, Miami Florida December 2012 **Hanagriff** & Rhoades.

4. Grant Management 101 (should provide 3 out of 4 of these to the Department - meaning faculty become managers or facilitators of the grants).
   a. Salary Savings (100% to Department [50% - department] and PIs [50%] - restricted discretionary)
   b. Indirect (40% to be split 60/40 between Department and PIs - discretionary)
   c. Personnel (project director, support staff, GTAs, etc.)
   d. Operations (e.g., travel, supplies, copying, printing, etc.)
   e. Funded:
      i. AgCert@TAMU Program Plan $40,000.00 - **John Rayfield** and **Robert Strong**
5. Dutch treat lunch with Dr. E. -
   a. Contact Debbie King to schedule and leave a contact number (for rescheduling): December 20, 21; January 11, 14, 15, 18, 22, 23, 24, 25, 29, 30, & 31

Multistate Research & Impact Reporting

Multistate research allows State Agricultural Experiment Stations (SAES) to interdependently collaborate in projects that two or more states share as a priority, but which no one state could address alone. This is a very high standard for any research project and has become a hallmark of the Multistate Research Program's management objectives. The Multistate Research Program allows other non-SAES partners to join in these project-based collaborations. Thus, many multistate projects include Extension Specialists and Agricultural Research Service or Forest Service scientists. Many projects even have private sector and foreign participants. Moreover, the majority of multistate projects have participants from more than a single region, with many having representation from all regions, such that they are national in scope.

Communicating research outcomes is crucial to maintaining as well as building support for our programs. In order to increase the visibility of the outcomes and importance of the multistate research program, the Experiment Station Committee on Organization and Policy (ESCOP) launched a nationwide impact reporting initiative in 2012. Impact statements are being developed for all terminating multistate research/coordination projects. As part of this effort, a professional writer has been engaged to help prepare effective impact statements for all terminating multistate projects. The Western Association of Agricultural Experiment Station Directors (WAAESD) Office is providing coordination, editorial oversight, and physical space for this effort.

This year, we honor multistate project NCERA-208 "Response to Emerging Soybean Rust Threat" with the 2012 Experiment Station Section Award of Excellence in Multistate Research for responding rapidly to the threat of soybean rust. In addition, we commend the efforts of three projects recognized at the regional level for their outstanding contributions to addressing important agricultural issues: NE-1025 "Biology, Ecology and Management of Emerging Pests of Annual Bluegrass on Golf Courses," S-009 "Plant Genetic Resources Conservation and Utilization," and WERA-1009 "Systems to Improve the End-Use Quality of Wheat."

Support for these projects came from the Multistate Research Fund established in 1998 by the Agricultural Research, Extension, and Education Reform Act (an amendment to the Hatch Act of 1888) to encourage and enhance multistate, multidisciplinary research on critical issues that have a national or regional priority.

WERA-1009 (2007-2012)

Improving End-use Quality of Wheat

This project improved the quality of existing and new wheat varieties, giving growers more profitable choices, helping U.S. wheat compete in domestic and international markets, and providing a stable supply of high quality wheat products for industrial partners and consumers.

Who cares and why?

There are many varieties of wheat, each with unique traits that influence its quality and how it can be used. Because they have diverse uses for wheat, different industrial partners prefer specific varieties. In the Pacific Northwest (PNW), about 85% of the wheat is exported, mostly to Asian and Middle Eastern countries where it is made into noodles, cookies, steamed breads, flat breads and other similar products. The total market value of U.S. wheat exported to Asian countries alone is estimated at over $400 million per year; however, exports have been declining over the last 20 years because of increased competition from Australia, Canada and eastern European countries. In order to remain competitive, PNW producers need to be continually improving overall grain quality and developing innovative wheat varieties. This requires a clear understanding of how wheat quality is affected by genetics and agricultural practices, such as tilling, fertilizing, and processing. The farming community and wheat industries must collaborate to set quality standards and make sure that technologies and practices protect wheat quality. If wheat quality is not improved, U.S. wheat producers will not be able to provide a steady supply of high quality wheat for industrial partners and consumers.

Most Western states test new wheat varieties during on-farm trials to determine how they are affected by environmental conditions and how well they could adapt to different farm settings. Above, Jianli Chen stands in fields of University of Idaho varieties. Photo by Cindy Snyder. Below, Bon Lee conducts bread baking tests in the Wheat Marketing Center lab. Measurements of texture and other qualities tell wheat breeders and industrial partners which wheat varieties are best suited for baking. Photo by Andrew Ross.

What has the project done so far?

This project has created a multidisciplinary committee that has shared wheat quality information among growers, researchers, and industrial partners. Using standardized testing methods that they developed, WERA-1009 scientists have evaluated wheat quality and measured how it is affected by specific plant genes, environmental factors, and grower practices. Over the last five years, the group has developed and released a number of unique new varieties of spring and winter wheat that have been top-yielding and have demonstrated excellent pest resistance, extreme weather tolerance, and desirable traits, such as better coloration and softness. Many of these varieties have become the most planted wheat varieties in western states. For their accomplishments, WERA-1009 received the Western Region Award of Excellence in Multistate Research in 2012.

Impact Statements

Engaged scientists and domestic and foreign industrial partners in research and development that led to improved wheat quality.

Reduced economic losses due to poor crop yield and/or quality and enhanced wheat production's resilience to climate change by developing and releasing new wheat varieties that are high yielding, drought tolerant, disease resistant, and/or have desirable traits for diverse uses.

Improved farmers' understanding of how their agricultural practices impact the ways their wheat crops can be used, thus helping them select higher quality varieties, use best management practices, and ultimately earn more for their crops.

Promoted domestic and international wheat trade by using knowledge about the quality and uses of different wheat varieties to predict how they will behave in markets and by increasing the overall acreage of valuable wheat varieties across the western region.

What research is needed?

Environmental conditions are constantly changing, as are customer needs. The median income level of Asian and Middle Eastern countries is increasing, which translates into increased demand for existing and new wheat products. Additional research on the genetics and environmental factors that affect wheat quality is needed so that the wheat industry can continue to adapt to climate change, new pests and changing customer needs. All western states are encouraged to participate in wheat breeding and testing programs. There is also need to begin investigating how different qualities of wheat affect human health.

Want to know more?

Administrative Advisors:
Russ Karow (russell.s.karow@oregonstate.edu)
Bill Boggess (bill.boggess@oregonstate.edu)

This project was supported by the Multistate Research Fund (MRF) established in 1998 by the Agricultural Research, Extension, and Education Reform Act (an amendment to the Hatch Act of 1888) to encourage and enhance multistate, multidisciplinary research on critical issues that have a national or regional priority. For more information, visit *http://www.waaesd.org/*.

Compiled and designed by Sara Delheimer

With the exception of soft red wheat, all classes of wheat are grown in the Western region. Photo by Rob Valkass, Flickr.

S-009 (2003-2013)

Conserving Plant Genetic Resources

S-009 has coordinated efficient acquisition, preservation, evaluation, and distribution of plant genetic resources, thus enabling a wide variety of current and future research projects and improving food security.

Who cares and why?

Different peanut samples show the genetic diversity in the Griffin peanut collection. Images courtesy of USDA-ARS.

Plant genetic resources (living plant materials that include genes) are essential parts of the agricultural production system that sustains the world's population. Seeds, plant tissues, and other genetic resources collected from throughout the world provide the raw materials that farmers and plant breeders use to improve crop quality and productivity. Furthermore, genetic diversity makes crops less vulnerable to widespread damage from pests, diseases, and stresses. Preserving genetic resources is vital for the homeland security of American food and fiber, especially in the Southern Region where agriculture is based primarily on crops such as peanuts and sorghum that were imported centuries ago from other parts of the world. Moreover, many samples can no longer be obtained from their native environments due to changes in land use or policies. Conserving genetic resources in "gene banks" ensures that these materials are available to farmers for years to come. It also ensures that these materials are available for current and future research projects. Researchers use plant genetic resources to breed new crop varieties with specific characteristics like disease resistance, drought tolerance, or color; develop pharmaceutical or medical products; and determine the origins of a particular species. This research provides the public with a more abundant, stable, and environmentally sustainable food supply with improved nutritional or pharmaceutical qualities. In order for plant breeders, pathologists, anthropologists, ecologists, and other scientists to be able to make the best and most efficient use of plant genetic resources, they must be properly classified, well-described, routinely evaluated for quality, and easily accessible. Proper conservation of plant genetic resources enables valuable research and provides security from devastating crop disasters, agroterrorist attacks, and other possible blows to crop production.

What has the project done so far?

Dr. Gary Pederson weighs sorghum seed, preparing samples for storage. Proper classification, evaluation, and storage of plant seeds makes it easier to scientists to identify and use the right samples for their projects. Photo courtesy of USDA-ARS.

For over 60 years, the S-009 project has helped coordinate the acquisition, preservation, evaluation, and distribution of plant genetic material for key Southern Region crops. Over the last five years, this collection (maintained at the Griffin Campus of the University of Georgia) has provided over 163,000 samples to users in all 50 states and 70 foreign countries. In addition, the S-009 team has acquired substantial new materials that have filled taxonomic gaps in the collection. S-009 studies have also identified and categorized samples that were previously unknown, misidentified, or mis-categorized. The S-009 team has pioneered the use of portable data logging devices and barcodes to increase the speed and accuracy of data handling. S-009 has also applied new or improved procedures for assessing the diversity of genetic resources. The team has taken digital images of flowers, fruits, and seeds and has described and categorized the characteristics (such as color, biomass, seed oil content, fatty acid composition, glucose content, etc.) of a variety of species in the collection. These detailed descriptions have helped researchers select

Impact Statements

Increased availability of and access to genetic resources, distributing over 35,000 seed, tissue culture, and clonal resources to users in 47 states and 45 foreign countries in 2011—a dramatic increase in demand from the average of 13,000 accessions distributed per year in the 1990s.

Enabled a widening array of studies across the world, including plant pathology, anthropology, medical, pharmaceutical, and food security projects.

Provided genetic resources that have been used in new ways beyond research, such as in classroom activities, charity/aid project demonstrations, wildlife management, biofuels, gourmet foods, and art.

Enabled plant breeding and crop improvement. For example, a single peanut sample (collected from a Brazilian market in 1952) with resistance to a major peanut disease (tomato spotted wilt virus) has been bred into 24 cultivated peanut varieties, including the five varieties currently dominating Southeastern U.S. peanut acreage. The economic return for this sample is estimated at $200 million per year.

Helped researchers use the collection more efficiently and select the most appropriate samples for their research objectives by thoroughly describing, classifying, and evaluating genetic resources.

Completed disease screening on many collections, assuring safe genetic resources for research and other uses—a big step toward controlling the introduction and spread of pathogens in U.S. agriculture.

Ensured high seed quality and encouraged user confidence by conducting germination tests and by putting samples into -18° C storage.

the right materials to use in their studies. S-009 has also tested the viability of seeds in the collection through germination tests on new and backlogged seed samples. Since 2002, germination tests have been conducted on over 80% of the Griffin collection. With this data, S-009 members have been able to better determine which seeds need to be regenerated. In addition, S-009 has taken steps to increase seed longevity. Currently, almost 75% of the entire Griffin collection has at least one sample in -18° C storage, an increase from only 58% in 2004. Collaborating with state and federal agencies, S-009 has made significant quarantine and inspection efforts that have minimized the threat of introducing or spreading pathogens and pests. Furthermore, S-009 has stored a duplicate of Griffin's genetic resource collection at another site to protect it from natural or other destructive disasters.

Watermelons are being grown in cages in order to increase the number of samples in the Griffin collection. Photo courtesy of USDA-ARS.

What research is needed?

Evaluating and adapting molecular biology breakthroughs will help researchers understand the genetic make-up of the collection samples and improve the efficiency of the collection's conservation.

Want to know more?

Administrative Advisor:
Gerald Arkin (garkin@uga.edu)
Project Website:
http://www.ars-grin.gov/ars/SoAtlantic/Griffin/pgrcu/s9.html

This project was supported by the Multistate Research Fund (MRF) established in 1998 by the Agricultural Research, Extension, and Education Reform Act (an amendment to the Hatch Act of 1888) to encourage and enhance multistate, multidisciplinary research on critical issues that have a national or regional priority. For more information, visit *http://saaesd.ncsu.edu/*.

Compiled and designed by Sara Delheimer

Emerging Pests of Annual Bluegrass

This project has refined our understanding of annual bluegrass, annual bluegrass weevil, and anthracnose diseases. New chemical treatments and maintenance practices are now available to the turfgrass industry, making pest management on golf courses safer, more affordable, and more successful.

Who cares and why?

Anthracnose diseases cause yellow lesions on annual bluegrass leaves and rot stems and roots. Dead, collapsed plants result in poor turf for golf courses. If the disease is detected in early stages, properly applied fungicides can protect other plants. NE-1025 researchers have also investigated ways to prevent and control anthracnose diseases with new fertilization, irrigations, and mowing practices. Above photo by Ned Tisserat, CSU. Photos below by John Kaminski, PSU.

Cultivated turfgrass (including lawns and recreational surfaces) covers 12 million hectares in the U.S. Turfgrass is an important source of green space and provides numerous ecosystem services (such as reduced soil erosion, mitigation of heat islands, soil carbon sequestration, and air pollution control). Golf is a major component of the turfgrass industry, with over 16,000 courses in the U.S. Golf courses provide important opportunities for jobs, economic development, and tax revenues. A recent report by the World Golf Foundation stated that golf contributes $62.2 billion worth of goods and services each year to the national economy. Golf courses maintenance in the Northeast and Mid-Atlantic is becoming increasingly complicated by two pests: the annual bluegrass weevil (ABW), which inflicts heavy damage to the visual and functional quality of the turfgrass, and fungal anthracnose diseases that result in damaging leaf blights, leaf rot, and/or root rot. With limited knowledge about these pests and few effective management options, golf course managers increasingly rely on chemical pesticide use. However, pesticides provide limited control of ABW and anthracnose diseases. In addition, increased reliance on pesticides has resulted in a greater incidence of pesticide-resistant ABW and anthracnose fungus populations. Furthermore, the general public is increasingly concerned about pesticide exposure and the potential for water contamination and long-term effects on human health and the environment. Improved pest management strategies can reduce pesticide use, thereby alleviating public concerns and minimizing economic losses in the golf industry.

What has the project done so far?

NE-1025 has been instrumental in building a network of turfgrass entomologists, management specialists, breeders, and pathologists in the Northeast and Mid-Atlantic U.S. Participating scientists have improved procedures for breeding programs that have been used to analyze turfgrass resistance to ABW and anthracnose diseases. Researchers have also enhanced models that describe and predict pest infestation severity. The NE-1025 team has conducted numerous field trials that have evaluated the effectiveness of new maintenance practices and biological, chemical, and genetic options for controlling these pests. Studies in several states have demonstrated that a slight increase in the rate of nitrogen (a

major element in fertilizers) significantly suppresses anthracnose diseases, particularly when quick-release forms of nitrogen are used. Scientists have also shown that increasing mowing height as little as 0.4 millimeters can reduce disease severity and that more frequent mowing does not increase the incidence or severity of anthracnose diseases. Other studies have found that the organic compound, piperonyl butoxide, helps successfully control ABW populations that are resistant to pyrethroid insecticides. Researchers have distributed kits to golf course managers for testing whether ABW are resistant to pyrethroids and have published several articles on best management practices in turfgrass industry magazines across North America.

Growing concerns about the cost of using pesticides on golf courses and their possible environmental and human health impacts have propelled research on alternative ways to control ABW and anthracnose diseases. For example, a mower manufacturer altered a product line as a direct result of anthracnose research at Cornell University, and many golf course managers have increased mowing height, adjusted mowing and rolling frequency, and modified fertilizer and irrigation programs. Top photo by Brett Chisum. Bottom photo courtesy of Christa Conforti, Presidio Trust.

Impact Statements

Coordinated the exchange of datasets, knowledge, and culture collections among scientists, pest control specialists, and plant breeders, advancing research and filling critical knowledge gaps.

Helped golf course managers decide which control tactics to use and when to use them by sharing information about ABW and anthracnose diseases and the potential for pesticide resistance.

Updated the WeevilTrak website weekly, helping golf course managers make informed, timely, and effective choices about pest control.

Improved knowledge about alternative pest control options, limiting unnecessary and ineffective pesticide use, and thereby reducing costs for the golf course industry, minimizing human and environmental health risks, and protecting recreational opportunities.

Influenced golf course maintenance guidelines and new mower designs that have reduced overall levels of anthracnose diseases and pesticide use.

What research is needed?

Additional research using cutting-edge technologies is needed to gain a deeper understanding of the biology of ABW and anthracnose diseases. Scientists also need to test new treatments and techniques, monitor pesticide resistance, and track pest distributions across the U.S.

Want to know more?

Administrative Advisor:
Richard C. Rhodes III
rcr3@uri.edu

This project was supported by the Multistate Research Fund (MRF) established in 1998 by the Agricultural Research, Extension, and Education Reform Act (an amendment to the Hatch Act of 1888) to encourage and enhance multistate, multidisciplinary research on critical issues that have a national or regional priority. For more information, visit *http://www.nera.umd.edu/*.

Compiled and designed by Sara Delheimer

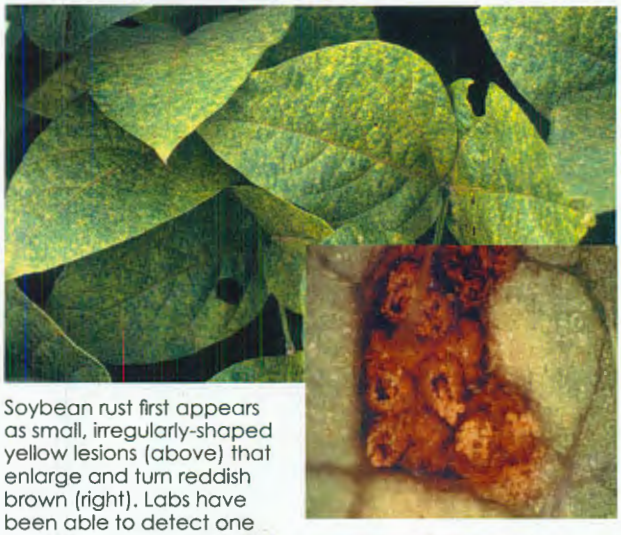
NCERA-208 (2006-2011)

Emerging Soybean Rust Threat

This project has saved the soybean industry hundreds of millions of dollars and minimized human and environmental health risks by identifying soybean rust management strategies that protect soybean yields and optimize fungicide use.

Who cares and why?

Soybean rust, a disease caused by the fungus *Phakopsora pachyrhizi*, was first discovered in the U.S. in 2004 and poses a serious threat to soybean production. The soybean industry is especially concerned because of severe yield losses from this disease in Africa and South America. In recent years, soybean rust (SBR) has spread throughout the southeastern U.S. and as far north as Canada, with some areas suffering high yield losses. Because the SBR pathogen is distributed by airborne spores, the disease can travel long distances quickly (Mexico and Caribbean islands harbor sources of the fungus even though below freezing winter temperatures kill off the disease in the U.S.). This potential for rapid spread calls for multistate, multidisciplinary coordination in order to respond rapidly to outbreaks and implement long-term strategies to prevent an epidemic. Despite many seasons of dealing with SBR, scientists still lack key information about the disease and how to best manage it. Because no U.S. soybean varieties are resistant to SBR, the disease has been managed primarily with increased fungicide applications. Though scientists and regulators have worked quickly to register and release selected fungicides in the U.S., farmers often spray too little, too late, or unnecessarily. Spraying too little can lead to severe yield loss from uncontrolled SBR, while spraying too much can raise the growers' costs, damage crop quality, pose risks to human and environmental health, and hasten fungicide-resistant disease strains. Furthermore, soybean producers often do not know when to spray; spraying too early (or when environmental conditions are not favorable for disease development) wastes spray, time, and money, while spraying too late may be ineffective. To keep the U.S. soybean industry profitable and competitive, scientists are trying to expand and standardize disease monitoring efforts, encourage cost-effective fungicide use, and develop viable long-term disease management strategies.



Soybean rust first appears as small, irregularly-shaped yellow lesions (above) that enlarge and turn reddish brown (right). Labs have been able to detect one tiny SBR pustule out of 100 leaves, giving a heads up that scouting efforts should be intensified in certain areas and fungicide sprays could be necessary.

What has the project done so far?

NCERA-208 has been instrumental in building relationships among researchers, soybean growers, industry associations, and international partners in Canada and Mexico and mobilizing regional resources to provide a structured, efficient response to the emerging SBR threat. Over the past five years, scientists have closely tracked the disease using a network of over 2,300 "sentinel plots." Using the sentinel plot data, researchers have created maps and models to predict where SBR is likely to occur. In addition, NCERA-208 has assisted with registering a new class of fungicides, tested the efficacy of fungicides, and determined proper amounts and timing. Researchers have also made significant progress in identifying promising soybean lines with resistance to the rust pathogen. NCERA-208 researchers and extension specialists have provided many educational materials that have helped growers identify and manage SBR. These include scouting videos; field ID cards in English, Spanish, and French; radio and television appearances; telephone hotlines; websites; newsletters; and over 200,000 *Using Foliar Fungicides to Manage Soybean Rust* manuals (*http://oardc.osu.edu/soyrust/*). Scientists have also shared recent findings during conferences, workshops, and in over 50 peer-reviewed journal articles.

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Formed a network of soybean producers and industry personnel across the U.S., Mexico, and Canada, which has helped provide the up-to-date information needed to prevent major problems in the U.S.

Alerted the soybean industry when and where SBR was detected, thus saving North American soybean producers over $600 million in unnecessary fungicide costs, reducing chemical exposure to the environment and food supply, and diminishing apprehension among the soybean industry.

Prevented disease spread and soybean yield losses by designing maps, models, and hands-on training programs that enhanced farmers' ability to predict, detect, and control SBR early on.

Refined protocols for disease management that are being used to prevent yield loss in many different environmental conditions and levels of disease pressure.

Provided online data and state-specific recommendations, saving the soybean industry nearly $300,000,000 in 2005 alone.

Strengthened defenses against SBR and protected tens of thousands of soybean acres by determining the most effective fungicides and the right amount and time for spraying and working with state and federal agencies to make them available to farmers.

Discovered soybean varieties that have high levels of resistance to SBR—a key step towards more sustainable, long-term disease management.

Since 2006, hands-on training sessions in Quincy, Florida, have taught over 750 soybean specialists, crop advisors, industry associations, and farmers to diagnose SBR on soybean and other host plants.

What research is needed?

Expanded monitoring efforts are essential to ensure that fungicides continue to contain SBR spread. In order to prevent and combat outbreaks, scientists need a better understanding of the pathogen's genetic diversity, lifecycle (especially during winter), geographic range, and potential hosts. Scientists also need to improve methods for trapping pathogen spores and for determining if fungicide-resistant spores from Brazil could deposit in U.S. Research is needed to identify resistance genes and make resistant soybean varieties commercially available. Researchers also need to improve yield loss assessments and develop economic management strategies so that the soybean industry is more resilient if faced with serious outbreaks.

Want to know more?

Administrative Advisor:
Steven A. Slack
oardc@osu.edu

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THE NUMBER GAME