A. Goals and Priorities for the Past Year
   To provide high quality education programs for both undergraduate and graduate students in various disciplines pertaining to agriculture, food systems and natural resources
   Perform research in areas that contribute to knowledge pertaining to agriculture, food systems and natural resources for the benefit of North Dakota, the nation and the world
   Provide high quality extension/outreach programs in topics pertaining to agriculture, food systems and natural resources
   Perform service that supports North Dakota State University and the various professions to which members of the College belong

B. Provide Executive Summary of Accomplishments in Achieving the Goals and Priorities
   a. Teaching
      • Continued upward trend in student enrollment with the undergraduate population exceeding 1300 for the first time and graduate enrollment in excess of 200 students
      • Built new curriculum plans to enhance student recruitment and to diversify the student population and career opportunities
      • Restructured internship programs to align more closely with other academic programs
      • Developed more online courses and expanded the use of technology to enhance learning within face-to-face courses
      • Gained approval for joint M.S. degree and Certificate program in International Infectious Disease Management and Biosecurity
      • Developed new courses to expand student awareness of issues facing agriculture, new scientific innovations and the use of technology
      • Expanded opportunities for graduate students to acquire teaching experience

   b. Research/Scholarly/Creative Activities (tabulate totals)
      • Collaboration with Kazakhstan, China and Uzbekistan (included hosting a Fulbright Scholar from Uzbekistan)
      • Opened the Beef Cattle Research Complex (has capabilities that are only available at three other institutions in North America)
      • The Agricultural Experiment Station Greenhouse Complex is open and research is underway in the first two phases. Construction on the third phase of this state-of-the-art facility, which will include space for high level biosafety research, has begun
- Established an initiative, including commitment of faculty and staff, to study soil health
- Established a faculty line to conduct research on trees and other perennial plants of economic and aesthetic importance to homeowners and businesses such as golf courses, vineyards and nurseries
- We observe the tragic loss of Dr. Cole Gustafson by noting that, in addition to outstanding service as an administrator, he also conducted groundbreaking research in the economic viability of biofuel from sugarbeets

c. Service/Outreach/Extension
- Center for Agricultural Policy and Trade Studies organized a national conference: “Farm Bill 2012 – Issues and Challenges”
- David Saxowsky – National co-leader of Agricultural and Environmental Law Program for AG*IDEA
- Dragan Miljkovic – Editor-in-Chief of *The Journal of International Agricultural Trade and Development*
- *BBQ Boot Camp* offered at eight locations with more than 800 participants
- *Moos, Ewes and More* brought more than 500 people to NDSU campus for education activities
- Berlin Nelson – Senior Editor -Plant Disease
- Rod Lym – President - Weed Science Society of America
- Burton Johnson – President – Association for the Advancement of Industrial Crops
- Deland Myers – Vice-President – American Oil Chemists
- Cliff Hall – Vice-President – American Flax Institute
- Faculty from Animal Sciences hosted the Reciprocal Meat Conference
- Birgit Pruess – President – North Central Branch – American Society for Microbiology
- Charlene Wolf-Hall – President of International Gamma sigma Delta

C. Department/Unit/College Goals and Priorities for the Coming Year
   To provide high quality education programs for both undergraduate and graduate students in various disciplines pertaining to agriculture, food systems and natural resources
   Perform research in areas that contribute to knowledge pertaining to agriculture, food systems and natural resources for the benefit of North Dakota, the nation and the world
   Provide high quality extension/outreach programs in topics pertaining to agriculture, food systems and natural resources
   Perform service that supports North Dakota State University and the various professions to which members of the College belong

### Research, Scholarly, and Creative Activities

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</table>
A. Goals and Priorities: 2011

- Hire a permanent chair
- Increase reputation and visibility of department
- Develop department’s strategic vision
- Enhance student learning in both undergraduate programs and graduate programs
- Complete program review

B. Executive Summary of Accomplishments in Achieving Goals and Priorities

Professor Cole Gustafson became permanent chair on July 15, 2011; the department benefitted greatly from his leadership. Tragically, he died in a farm accident on April 28, 2012. The department once again needs to hire a permanent chair.

During his interview for the chair position, Dr. Gustafson heard administrators say that the department needed to increase its visibility within the university and the profession. Dr. Gustafson initiated a biweekly news column (“Spotlight on Economics”) that is intended to provide readers with an update on emerging economic and agribusiness issues and research. The Department also provided more news about its faculty’s accomplishments to “Its Happening at State” and to the professional newsletter (“The Exchange”) of the Agricultural & Applied Economics Association. Professor Gustafson led the department in developing proposals for the “Academic Roadmap” exercise and also for SBARE. Faculty discussions concerning these proposals helped to clarify several issues involved regarding the department’s strategic vision. In addition, he increased collaborations with other units within the College of Agriculture, Food Systems, and Natural Resources and with relevant agricultural groups within North Dakota. The program review was completed during spring semester (2011).

a. Teaching

- Demand continues to be high for department’s undergraduate majors for both employment and for internships; rates of placement is high and salaries are increasing. Indeed, demand for graduates, particularly in agribusinesses, appears to exceed the number of graduates.
- During 2011, faculty restructured the internship course to more closely integrate the internship experience with the student’s academic learning
- Faculty continue to try a variety of new ways to deliver courses. In several cases, online courses have been developed to provide an alternative to an existing face-to-face course. Other faculty have been experimenting with other approaches (for example, using lecture capture software) to create hybrid courses.
- The Commodity Trading Room was not completed during 2011 but faculty continued to discuss how to best revise curriculum to incorporate the potential benefits from using this facility.
- The department continues to have a ratio of produced FTE to budgeted FTE that exceeds two.
- Most M.S. thesis result in peer reviewed journal articles
- Dr. Greg McKee earned the 2011 Outstanding Undergraduate Teaching Award of the Western Agricultural Economics Association with less than 10 years’ experience
b. Research, Scholarly, and Creative Activities

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c. Service/Outreach/Extension
- Center for Agricultural Policy and Trade Studies: Organized national conference: "Farm Bill 2012: Issues and Challenges"
- Extension: Agricultural Lenders Conference (4 sessions)
- Extension: Crop Insurance Conference
- Extension: Producer Outlook Conference
- Worked with North Dakota Tax Department to obtain funding for improving the North Dakota Agricultural Land Valuation Model
- Saleem Shaik: Elected to Executive Committee of Western Agricultural Economics Association
- David Saxowsky: National co-leader of Agricultural & Environmental Law program for AG*IDEA.
- Dragan Miljkovic: Editor-in-Chief of The Journal of International Agricultural Trade and Development (JIATD).
- William Wilson: Nominated to serve on USDA Advisory Committee on Biotechnology and 21st Century Agriculture
- Kathleen Tweeten: Business Retention and Expansion International, Distinguished Lifetime Service Award

C. Goals and Priorities: 2012
- Hire a Permanent Chair
- Increase reputation and visibility of department
- Develop department’s strategic vision
- Enhance student learning in both undergraduate programs and graduate programs
- Complete Commodity Trading Room
- Hire new faculty to replace faculty lost because of resignations and retirements
A. List College/Department Goals and Priorities for the Past Year

- To provide high quality undergraduate educational programs in selected areas of Agricultural and Biosystems Engineering and Agricultural Systems Management.
- To provide high quality MS and PhD educational programs in Agricultural and Biosystems Engineering.
- To attract and retain a large number of quality and diverse undergraduate and graduate students.
- To conduct scholarly activities that extends the knowledge base to; enhance agricultural production efficiency, profitability, and sustainability, maintain quality and/or add value to biological materials, and develop efficient use and stewardship of environmental resources.
- To provide extension and outreach education focused on; agri-production systems, biological materials, environmental resources management, energy production and efficiency, and structures and environment.
- To provide opportunities for professional development of faculty and staff to keep knowledge and skills current in their areas of professional practice.
- To provide greater assistance to graduating seniors in this time of tight job markets.

B. Provide Executive Summary of Accomplishments in Achieving the Goals and Priorities for this Past Year which include the following areas:

a. Teaching

- ABEN student numbers as well as student diversity have been steadily increasing. We taught 33 classes/labs this year. New technology and software were procured for improved hands-on student experience. Several high level guest speakers provided exposure to real life engineering situations. Extreme improvement was seen in class performance according to pre and post testing, exam scores, and student feedback. New curriculum was developed for the Numerical Modeling course, and a new course is in development to expose students to Matlab.
- ABEN department has submitted a program review report for the oncoming review and accreditiation of its undergraduate engineering program by ABET.
- ABEN undergraduate students participated in the international quarter scale tractor competition held by ASABE.
- Tom Bon received H. Roland and Janet Lund Excellence in Teaching Award.
- ABEN faculty participates in the AgIDEA program.

b. Research/Scholarly/Creative Activities (tabulate totals)

- ABEN faculty published 54 peer reviewed journal articles, and 40+ invited research presentations, proceeding papers, and posters were presented by ABEN faculty
- Faculty in this department received 23 grants totaling $3,031,416, and 10 Pending grants totaled $715,000. Two faculty members are collaborating on 2 additional
pending grants totaling from a possible $1 million to $10 million, and 39 grant proposals were submitted that were not funded.

- Scott Pryor received the College of Engineering Best Researcher Award.
- ABEN faculty maintained active international collaboration with Kazakhstan, China and Uzbekistan by serving on thesis committees of graduate students and hosting international scientists including a Fulbright scholar from Uzbekistan.

c. Service/Outreach/Extension
- ABEN faculty generated 45 book chapters, production guides, bulletins, reports, non-refereed articles and abstracts.
- The department faculty prepared 25 videos, news releases, and newsletters.
- ABEN faculty participated in 38 interviews and meetings.
- ABEN faculty were active members of several professional organizations, served on proposal review panels and journal/conference editorial boards, and participated in many service activities including university/college/departmental committees, multistate project groups, ASABE committees, planning committee for BigIron, etc.
- Ken Hellevang received the NDSU Extension Service Program Excellence Award and 2011 AGSCO Excellence in Extension Award while Tom Scherer received NDSU Extension Program Excellence Large Team Award, North Dakota Irrigation Association, Irrigation Excellence Award

C. College/Department Goals and Priorities for the Coming Year
- To attract, recruit and retain a diverse group of highly qualified students into our undergraduate and graduate programs, and provide them the best value education.
- To strengthen research by applying principles of agricultural and biosystems engineering towards solving local and global issues of sustainably providing food, fiber, feed and fuel for a growing population.
- To provide extension and outreach education focused on agricultural production systems, biological materials, environmental resources management, energy production and efficiency, and structures and environment.
- To provide opportunities for professional development of faculty and staff to keep knowledge and skills current in their areas of professional practice.
- To improve ABEN’s visibility in the State by forging new relationships and strengthening existing links to alumni, employers of our students and other stakeholder groups.

### Research, Scholarly, and Creative Activities

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Animal Sciences Department
Annual Report
Calendar Year: January 1, 2011 – December 31, 2011

A. Department/Unit/College Goals and Priorities for the Past Year
   a. Teaching
      i. Implement new Animal Science curriculum
   b. Research
      i. Hire Grant Development Coordinator
      ii. Open and operate the new Beef Cattle Research Complex
   c. Extension
      i. Develop signature Extension programs

B. Provide Executive Summary of Accomplishments in Achieving the Goals and Priorities for the Past Year
   a. Teaching
      i. In 2011, major changes to the Animal Sciences curriculum were implemented. As part of a planning process that began approximately three years ago, the Animal Sciences curriculum was revised to provide additional options for our students. New options within the Animal Science major are: Meat Science; Livestock Media; Biomedical Science/Pre-Vet; Animal Production, Management, and Husbandry; and Animal Agribusiness. These options reflect the growing interests our students and employers have in these areas as well as the views of the faculty as to the need to modernize our curriculum. As part of this revision, our senior level livestock production courses were changed from 2 credits to 3 credits and we also implemented a requirement for an internship. Current students were given the option of continuing with the previous curriculum or picking up one of the new options. The department is experiencing record enrollment, in part, due to the new options we are offering in the Animal Science major.

   b. Research

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i. In 2011, the department hired a grant development coordinator. This position became available through a legislative initiative which enhanced infrastructure in the NDSU Agricultural Experiment Station. This position has proven to be an invaluable help to our faculty as they pursue grant funding by
identifying new grant funding opportunities, assisting with paperwork associated with grant submission, and grant budget development.

ii. In 2011, the department officially opened the Beef Cattle Research Complex, a state-of-the-art facility which will allow our scientists to conduct a variety of beef cattle research. It is one of only four facilities like it in North America, and the only one at a Land Grant university. Research related to nutrition, reproduction, meat science, nutrient management, genetics, animal health, behavior, food safety, economics, as well as a variety of other disciplines related to beef cattle production can be conducted in this facility. Research conducted in this facility will ultimately improve profitability and sustainability of beef cattle production by helping producers to more precisely meet the nutrient needs of their livestock, thus resulting in increased production efficiency. A 10% improvement in feed efficiency for North Dakota’s beef cow herd would translate into a nearly $30 million dollar impact to North Dakota beef cattle producers.

c. Service/Outreach/Extension

i. The department faculty has several highly visible Extension programming efforts, including BBQ Boot Camp, our signature Extension program. BBQ Boot Camp has been quite popular and has allowed us to reach consumer audiences that we have not typically reached with traditional programs. In 2011, the NDSU BBQ Boot Camp team traveled to 8 locations in North Dakota and provided educational programming to over 800 people. The department also hosts Moos, Ewes & More, an annual event designed to showcase the department and our relationship with people in the Fargo-Moorhead community. Last year, nearly 500 people attended the educational event. Both of these events involve a number of faculty, staff, and students who do not have formal Extension appointments.

C. Department/Unit/College Goals and Priorities for the Coming Year

a. Overall Departmental Goals

i. Improve visibility with students, stakeholders, and alumni
   1. Revamp the departmental web site
   2. Create an alumni newsletter

ii. Develop an ‘onboarding’ process to more effectively integrate new employees into the department

b. Teaching

i. Prepare for accreditation visit for the Veterinary Technology Program

ii. Fill vacancy created by the promotion of Dr. David Buchanan

c. Research

i. Develop a more sustainable funding model for operation of the Advanced Imaging and Microscopy Laboratory

d. Extension

i. Develop more in-depth training opportunities for county Extension agents
Annual Report
Department of Plant Pathology
January 1 – December 31, 2011

A. Department/Unit/College Goals and Priorities for the Past Year
The primary objective of the department in 2011 was to meet its core mission of conducting research, teaching and extension activities on plant diseases of economic importance to the state. The department accomplishes this with 15 faculty lines, 12 with primary appointments for research and three for extension. Dr. Jared LeBoldus joined the faculty with a research, teaching and extension emphasis on diseases of trees, turf and other ornamentals. This was a redirection of a vacant faculty line previously created by a retirement and initiates pathology activities at the faculty level on perennial plants of interest urban clientele. Two Assistant Professors left NDSU in 2011. Both vacant positions were filled, one with a female, with summer 2012 start dates. With faculty from eight countries, the department is proud of its diversity. The 15 faculty in 2011 included one Native American and three women, including one U.S. Hispanic. The department enrolled a record of 36 graduate students, including four who completed Ph.D. degrees and two the M.S. The department hosted a Borlaug Fellow from Guatemala – to our knowledge the first Borlaug Fellow at NDSU - and a Fulbright Fellow from India. The department continues to make health insurance for its graduate students a priority.

B. Executive Summary
a. Teaching
Dr. Acevedo developed and taught for the first time the Population Biology of Plant Pathogens (PPTH 755); enrollment was 21 graduate students. The addition of this course was the first significant change of departmental curriculum in several years. An additional laboratory section was added to PPTH 324 (Introduction to Plant Pathology) to accommodate student demand. The course is required for three majors in the college. More teaching FTEs (2.174) were generated by teaching faculty than was allocated to them (1.6). The department has no undergraduate program so a key objective is to grow and strengthen the graduate program. Approximately 2/3 or the 36 graduate students were Ph.D. students. Three nontraditional graduate students are enrolled; each is “older than average”, is employed full-time in the private agricultural sector off campus and is working toward the Ph.D. The department is considering ways to make it easier for this kind of student to meet the requirements of the Ph.D. without sacrificing quality. One option is to modify the curriculum so that lectures are in one longer block (e.g., deliver lectures in one three hour block per week rather than three 50 minute sessions per week). Nontraditional students such as this are viewed as an avenue to grow the graduate program while simultaneously meeting the needs of our stakeholders. Dr. Meinhardt was placed in charge of departmental assessment activities and is coordinating graduate recruitment.

b. Research
The department conducted basic and applied research on economically-important diseases of major crops in the state. Major goals of the research were to: 1) advance the science of plant pathology, including the identification of efficient and sustainable ways to control plant diseases of importance to the state, and 2) assist other units in their efforts to complete their research missions.
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**c. Service/Outreach/Extension**

Gudmestad, McMullen and Rasmussen chaired NDSU searches for the new Provost, Director of Extension, and Associate Dean of the COAFSNR, respectively; each search was successful. Faculty, led by Extension Specialists Markell, McMullen and Khan, delivered 114 invited outreach presentations to venues ranging from the local to international. Gudmestad chaired the Faculty Senate Standing Committee on Academic Integrity and was member of Texas Department of Agriculture Technical Advisory Committee on Zebra Chip. At NDSU, he was an ad hoc member of the FORWARD Faculty Mentoring Committee. Secor chaired the Editorial Committee of the commodity specific web portal “Focus on Potato” for the Plant Management Network. Brueggeman and Acevedo were instrumental in planning the design of and securing funding for BL3 facilities in new greenhouse complex. Brueggeman also was a member of the National Barley Improvement Committee and the Barley Coordinated Project Steering Committee of the U.S. Wheat and Barley Scab Initiative (USWBSI). Zhong served on the Winter Wheat Subcommittee for the USWBSI; he also was on the Editorial Advisory Board for The Open Mycology Journal. Adhikari was a Senior Editor for Phytopathology, the premiere international journal of general plant pathology, published by the American Phytopathological Society (APS). Nelson was a Senior Editor for the APS journal Plant Disease, the premiere journal in the world of applied plant pathology; he also chaired the college PTE Committee. Acevedo served on the APS Host Resistance Committee and Zhong on both the APS Genetics Committee and the APS Mycology Committee. Acevedo also taught the leaf rust section of the 3rd Course on Standardization of Stem Rust Note-taking and Evaluation of Germplasm Training, Njoro, Kenya.

**C. Department Priorities for the Coming Year**

Goals for the coming year include:

- Meet core departmental mission of conducting research, teaching and extension activities on economic plant diseases in the state.
- Integrate three new faculty members into the department.
- Conduct formal evaluations of two faculty submitting portfolios for promotion to Associate Professor with tenure and of one faculty member submitting a portfolio for the 3rd year review.
- Complete the scheduled departmental program review.
- Continue efforts to enhance the graduate program.
- Continue efforts to solve long-standing laboratory and office space constraints.
A. Department/Unit/College Goals and Priorities for the Past Year
The goals of the department are to continue to fulfill department mission of teaching and research in basic and applied plant breeding and genetics, weed science, biotechnology, horticulture, and agronomic crop production and turfgrass management; reevaluate, update, and revise the Plant Sciences curriculum; respond to evaluation of advisors and students; peer evaluation of courses; address the assessment/student outcome; and to reprioritize teaching, research, and extension activities in light of decreased funding and continually shifting priorities. Currently the department consists of 43 faculty, 75 technical and office staff, and 78 graduate students. The department has 215 undergraduate students with 147 enrolled in Crop and Weed Science, 42 in Horticulture and 26 in the Sports and Urban Turfgrass majors.

B. Executive Summary
a. Teaching
The department continues to maintain high standards for its excellent graduate and undergraduate programs by actively recruiting highly qualified students and faculty. The department provides undergraduate and graduate students with the knowledge, skills and understanding critical for professional success in a changing global economy. Several classes are taught for the science General Education option. Two classes are taught via distance education and four more are being developed. The faculty encourage students to interact with faculty in other disciplines to broaden their experiences. Involvement in interdisciplinary undergraduate programs, such as Plant Protection and Biotechnology, allow our faculty to better address the needs of both agricultural and nonagricultural students.

Loss of a weed science position led to restructuring course responsibilities within the department and has affected many teaching responsibilities. The weed science faculty felt that Dr. Kirk Howatt was best suited to teach the Principles of Weed Science course, PLSC 323. This course is the primary undergraduate course for the discipline. It is required in all majors in the department and, as such, has an important role in relating the intrigue and importance of weed science within agriculture. This course is offered spring of each year and includes five lab sections. This change required that someone else teach PLSC 453/653 ‘Advanced Weed Science’ and Dr. Mike Christoffers is the new instructor for that course. Dr. Christoffers will no longer teach PLSC 315 every fourth semester. Instead, Dr. Penny Kianian and Dr. Juan Osorno will each teach PLSC 315 once per year. Dr. Ted Helms who also taught PLSC 315 every fourth semester is currently developing a new course in genetics and will no longer teach PLSC 315.

b. Research/Scholarly/Creative Activities (tabulate totals)

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c. Service/Outreach/Extension
Marcelo Carena - Represented NDSU at the United Nations World Food and Agriculture Organization (FAO) as one of the founders of the Global Plant Breeding Initiative for Capacity Building in its third year of activity, which received $1.2 million from the Gates Foundation.

Richard Horsley - Supervised the program of summer intern fellows from the University of Puerto Rico, Mayagués. In 2011, two Puerto Rican female students and one Puerto Rican male student were recruited to serve as summer interns on two projects in Plant Sciences and one project in Plant Pathology.

Thomas Kalb – Established a 1.5-acre site in Bismarck superior rose and annual flower trial garden and named Dragonfly. North Dakota State University took the lead in designing and establishing the garden.
Rod Lym was elected President of the Weed Science Society of America.

Senay Simsek received the NC-213 Andersons Cereals and Oilseeds 2011 Early-in-Career Award of Excellence.

Ken Grafton, Phil McClean, Bill Wilson, and Sharhryar Kianian of NDSU Plant Sciences and the Center of Excellence for AgBiotechnology are representing NDSU in a partnership with the Department of Primary Industries of Australia to develop improved crop varieties.

Kirk Howatt was named Educator of the Year by the Mid America Croplife Association.

Serving as president of the Association for the Advancement of Industrial Crops (AAIC), Burton Johnson hosted the 23rd Annual AAIC Meeting in Fargo on Sept. 11-14, 2011.

Phil McClean was awarded the Frazier-Zaumeyer Distinguished Lectureship at the biennial Bean Improvement Cooperative (BIC) meeting in San Juan, PR, in November.

Ken Grafton received the Meritorious Service Award at the Bean Improvement Cooperative meeting in San Juan, PR, in November.

Harlene Hatterman-Valenti was recognized as a Fellow of the North Central Weed Science Society (NCWSS).

Potato breeder Susie Thompson received the National Potato Council’s Meritorious Service Award.

C. Department/Unit/College Goals and Priorities for the Coming Year

Ensure the Plant Sciences office maintains a functional work environment. Given the progress that has been made in having a functional work environment in the department’s office, it would be unwise to take for granted that this atmosphere would continue if left unmonitored. It is important to maintain an environment where office staff members feel safe in bringing to you concerns they have with their work setting.

Continue the process of updating pre-release and variety release protocols for all plant materials developed in Plant Sciences. I need to make sure that this process is moving forward under the stewardship of Dale Williams and to keep the faculty updated on its progress. This will prevent faculty working on crops/plants without previous guidelines to think that they can move ahead with discussions on release without first contacting the department head and the AES director.

Create a new position for assistant head in the department and update the responsibilities of the associate head of Plant Sciences. The topic of creating the assistant head for the department was brought to the department’s faculty advisory committee. They were supportive of the proposal. This assistant head would be responsible for handling academic items, including assessment of student learning and reinvigorating the peer-review process of Plant Sciences teaching. Additional responsibilities for the assistant head will be defined in discussions with the associate head. Likewise, the role of the associate head will be further defined in these discussions.

Continue to work on getting the department faculty members to think more of their role to the department and not their discipline. As stated last year, this is a goal that will take some time to accomplish, but I think it can be done by having faculty focus on their role within the mission of the department.

Continue to introduce myself to the different commodity groups our department serves.

Items needed by the department

Timelier processing and completion of jobs by Facilities Management (discussed in a meeting with Mike Ellingson and VP Bollinger on March 28).

New field crops facility to replace Waldron Hall and the quality laboratories in Harris Hall.
School of Food Systems – Cereal and Food Sciences Program
Annual Report for Calendar Year 2011
Submitted to College by Deland J. Myers Sr. on July 15, 2012

A. Department/Unit/College Goals and Priorities for the Past Year
- Hire a faculty member to replace Dr. Khalil Khan who retired in August 2011.
- Continue to work toward better professional development of our undergraduate students focusing on improving curriculum, providing internship and undergraduate research opportunities, facilitating leadership development, and identifying global experience opportunities.
- To increase grant writing efforts in our traditional areas of funding support including commodity boards, industry, and USDA, and identify opportunities to obtain funding support from nontraditional programs, i.e., NIH, NSF, DOE, etc.

B. Provide Executive Summary of Accomplishments in Achieving the Goals and Priorities for this Past Year which include the following areas
   a. Teaching
      - Dr. Dilrukshi Thavarajah successfully transitioned as lead professor in the CFS/SAFE 790 seminar and the CFS 450/650 Cereal Technology course replacing the retired Dr. Khalil Khan and adding revised syllabi in each course.
      - CFS 793, Individual Teaching Experience, was successfully implemented to provide valuable teaching experience for graduate students and provide support for teaching CFS 370 (Food Processing I) and CFS 474 Sensory Evaluation of Foods.
      - Dr. Pushparajah Thavarajah was employed as lecturer for CFS 460/660 and 461/661 (Food Chemistry and Food Chemistry Laboratory), a food chemist with expertise in state-of-the-art analytical techniques to provide new insights in food chemistry to the class.
      - New food security/function foods concepts was added to CFS courses to include pulses and global food systems to CFS 450/650 and micronutrient chemistry and analysis in CFS 460/660 & 461/661.
      - We continued to improve online CFS 210 (Introduction to Food Systems) course in preparation for planned application for General Education Status and Distance Education Delivery.

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<th>Total</th>
<th>Avg SROI</th>
<th>Fall Undergrad</th>
<th>Graduate</th>
<th>Total</th>
<th>Avg SROI</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFS 200</td>
<td>12</td>
<td>0</td>
<td>12</td>
<td>4.20</td>
<td>24</td>
<td>0</td>
<td>24</td>
<td>3.72</td>
</tr>
<tr>
<td>CFS 464/664</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>3.25</td>
<td>14</td>
<td>0</td>
<td>14</td>
<td>3.00</td>
</tr>
<tr>
<td>CFS 470/670</td>
<td>5</td>
<td>1</td>
<td>6</td>
<td>4.25/5.00</td>
<td>14</td>
<td>6</td>
<td>20</td>
<td>4.01/4.00</td>
</tr>
<tr>
<td>CFS 471/671</td>
<td>5</td>
<td>1</td>
<td>6</td>
<td>3.64</td>
<td>7</td>
<td>0</td>
<td>7</td>
<td>4.21</td>
</tr>
<tr>
<td>CFS 480</td>
<td>6</td>
<td>0</td>
<td>6</td>
<td>4.58</td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>3.75/5.00</td>
</tr>
<tr>
<td>CFS 760</td>
<td>0</td>
<td>8</td>
<td>8</td>
<td>4.50</td>
<td>6</td>
<td>1</td>
<td>7</td>
<td>4.33</td>
</tr>
<tr>
<td>CFS 766</td>
<td>0</td>
<td>10</td>
<td>10</td>
<td>4.42</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>4.67</td>
</tr>
<tr>
<td>CFS 790</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td></td>
<td>0</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>CFS 798</td>
<td>0</td>
<td>6</td>
<td>6</td>
<td></td>
<td>0</td>
<td>8</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>CFS 798R</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td></td>
<td>0</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>CFS 799</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td></td>
<td>0</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>CFS 799R</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td></td>
<td>0</td>
<td>7</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

Total 31 35 Total 74 50
Total Spring = 66 Total Fall = 124 Grand Total = 190


b. Research/Scholarly/Creative Activities

| Peer Reviewed Publications (published or accepted) | 21 |
| National or International Invited Presentations | 15 |
| Books and Book Chapters | 5 |
| Research Grants and Contracts (Note: 12 Grants not funded at 4.6 MM) | Estimated Funds $660,000 |

<table>
<thead>
<tr>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
</tr>
</tbody>
</table>

c. Service/Outreach and Extension

- **State and Region**
  - Worked with food grade soybean growers and processors to expand the market for food grade soybeans grown in North Dakota and the Upper Great Plains region.
  - Worked with flax processors and producers to expand the value-added use of flax grown in North Dakota and the Upper Great Plains region.
  - Worked the pulse producers, commodity boards, and processors for the purpose of continuing to establish the pulse industry in North Dakota and the Upper Great Plains region.

- **National**
  - Worked with soybean and dry bean processors to resolve processing formulation issues with beans grown in North Dakota and the Upper Great Plains region.

- **International**
  - Collaborated with numerous companies, universities, and commodity groups in the Pacific Rim for the purpose of expanding the use of food grade soybeans Upper Great Plains region.
  - Collaborated with numerous universities, government, and nongovernment agencies in Southeast Asia and Canada to enhance research efforts with pulses and global food security.
  - Visited universities in China and Ecuador to enhance the overall education and research efforts of the School of Food Systems.

- **Professional Service**
  - Faculty were members of editorial boards for journals including: Agricultural and Food Chemistry, Food Processing and Preservation, Food Science, and American Oil Chemists.
  - Recognition for faculty included: K.C. Chang for most cited publication by Institute of Food Technologists (IFT) and D. Myers elected as Vice President of American Oil Chemists. C. Hall served as Vice President of the American Flax Institute.
  - The SFS was very active in MN-IFT for the purpose of obtaining scholarships for students and expanding our program visibility in the region.

- **Diversity**
  - Active participant in the NATURE program including Sunday Academy and Summer NATURE camp.
  - D. Myers served as Professor-in-Charge of the NDSU Summer STEM Program for underrepresented students and C. Hall served as a faculty mentor for the program.
  - NDSU was awarded two grants from the USDA to enhance the outreach efforts to Native American Students in both Food Science and Food Safety.

C. Department/Unit/College Goals and Priorities for the Coming Year

- Reorganize teaching advising and office assignments in the light of the departure of Dr. K.C. Sam Chang and the addition of Dr. Pushparajah Thavarajah.
- Work to facilitate the collaboration with the Global Institute of Food Science and International Agriculture.
- Continue to enhance our outreach efforts in North Dakota and the Upper Great Plains region.
- Continue to enhance the teaching, research and outreach efforts in Food Security and Foods for Health.
School of Natural Resource Sciences Annual Report
January 1, 2011 – December 31, 2011

The School of Natural Resources Sciences (SNRS) is one of the most, if not the most, complex units on campus. Formed in 2008, SNRS is composed of the Department of Entomology, Natural Resource Management (NRM), the Range Program, and the Department of Soil Science. This annual report attempts to capture the impact of all our programs and its 25 faculty in two pages.

A. Unit Goals and Priorities for the Past Year:
While the structure of the School is in place we had made little progress on developing an overall vision, missions, or the goals needed to accomplish these. Previous annual review goals were all practical, such as conducting searches and updating websites.

B. Executive Summary of Accomplishments in Achieving the Goals and Priorities for 2011:

a. Teaching: We have recently developed two broad goals for improving our teaching: (i) Enhance learning experiences and improve critical thinking; and (ii) Develop collaborations among SNRS programs. Lists or accomplishments and new initiatives highlight our efforts toward improving the educational experiences we provide while working synergistically.

<table>
<thead>
<tr>
<th>Changes made:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Experiences and Critical Thinking</td>
</tr>
<tr>
<td>Design and measurement modules added to several classes: regionally important agriculture pests (ENT350), managing insect pests (ENT 431/631), water content (SOIL 210), infiltration (SOIL 721), meteorological observations (SOIL 217), case studies (SOIL 644, SOIL 721, RNG).</td>
</tr>
<tr>
<td>Critical thinking added: original research (ENT 761), writing a scientific lit review (ENT 790-02), undergraduate participation in new manuscripts (SOIL 721 &amp; SOIL 644), critical reading and writing assignments (ENT 210).</td>
</tr>
<tr>
<td>Developing Collaborations among SNRS Programs</td>
</tr>
</tbody>
</table>

Progress made:

[Table containing list of accomplishments]

We are developing students’ experiences in designing experiments, making measurements and publishing their results. Here are three recent examples of such peer-reviewed publications (Students’ names bolded):


We are developing students’ experiences in designing experiments, making measurements and publishing their results. Here are three recent examples of such peer-reviewed publications (Students’ names bolded):


Our first collaborative teaching efforts among faculty in different SNRS programs were successful. One example was a case study in SOIL 644 in which Drs. Hopkins (Soils) and Prishman (ENT) looked at land use changes using soil and invertebrate indicators. The students benefited greatly and a peer-reviewed publication is in preparation. Another example was SOIL 721 in which Drs. DeSutter (Soils) and Norland (NRM) wrote a paper with students on sampling soils in Fargo Dog Parks with their students (listed above).

List new initiatives, innovative teaching approaches providing evidence of quality improvements in teaching and learning.

1. Include student experience and critical thinking in more classes and curriculum
2. Develop additional and improved capstone experiences
3. Develop collaborative teaching and curriculum among SNRS’ programs that benefits students.
4. Obtain additional resources to teach more sections of SOIL 210

b. Research/Scholarly/Creative Activities: Since our faculty cover a range of disciplines, their research activities take a number of different forms. We tabulate the requested information while providing some additional details.

<table>
<thead>
<tr>
<th>Peer Reviewed Publications (published or accepted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Includes: 38 Refereed articles, 2 Edited works, 2 Book chapters, 25 Published proceedings</td>
</tr>
<tr>
<td>Total: 67</td>
</tr>
<tr>
<td>National or International Invited Presentations</td>
</tr>
<tr>
<td>In addition: 65 non-invited research presentations and 48 published presentation abstracts</td>
</tr>
<tr>
<td>Total: 20</td>
</tr>
<tr>
<td>Juried presentations/performances/exhibitions</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td>Research Grants and Contracts</td>
</tr>
<tr>
<td>103 Total grant submitted (&gt;$12mil); 67 Funded grants (total grants &gt;$9mil) 20 Grants pending ($1.4mil); 16 grants not funded ($1.2mil)</td>
</tr>
<tr>
<td>Total Funded: $9,153,539 Faculty Portion: $1,764,118</td>
</tr>
<tr>
<td>Total: 67</td>
</tr>
</tbody>
</table>
SNRS faculty provide significant services to NDSU and the larger community through different activities. Below we highlight some of our accomplishments in the areas of professional service, extension/outreach activities, and academic advising.

**c. Service**: Service to the scientific and professional communities are provided by SNRS faculty by their memberships on unit, college, university, and broader committees. Additionally, professional recognition at the national and international levels is recognized through services such as manuscript reviews, editorial panels, grant panel service, and external evaluations.

<table>
<thead>
<tr>
<th>Manuscript Reviews</th>
<th>Editorial Boards</th>
<th>Grant Reviews &amp; Panels</th>
<th>External PTE /Personnel Evaluations</th>
<th>Officer National /International committees</th>
<th>Nat./Int. Science Advisor</th>
<th>Memberships Nat./Int. Societies</th>
<th>Memberships Regional Committees</th>
<th>Memberships Univ./Coll. Committees</th>
<th>Memberships SNRS Committees</th>
</tr>
</thead>
<tbody>
<tr>
<td>98</td>
<td>13</td>
<td>10</td>
<td>6</td>
<td>18</td>
<td>9</td>
<td>40</td>
<td>34</td>
<td>84</td>
<td>64</td>
</tr>
</tbody>
</table>

d. **Extension Activities**: The tabular information below captures the breadth of extension activities by SNRS Extension personnel. In addition, SNRS Extension faculty have >5,800 face-to-face communications, disseminating practical research to ND citizens, and impact thousands more through numerous electronic materials (e.g. YouTube videos).

<table>
<thead>
<tr>
<th>Events Planned Exclusively by SNRS Extension Faculty</th>
<th>Events</th>
<th>Youth Attendance</th>
<th>Adult Attendance</th>
<th>Total Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>136</td>
<td>728</td>
<td>864</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Extension Presentations Made</th>
<th>Presentations</th>
<th>Youth Attendance</th>
<th>Adult Attendance</th>
<th>Total Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>69</td>
<td>50</td>
<td>4971</td>
<td>5021</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Peer-Reviewed Extension Outreach Publications</th>
<th>Popular press</th>
<th>Media</th>
<th>Stakeholder reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>127</td>
<td>13</td>
<td>54</td>
<td>18</td>
</tr>
</tbody>
</table>

e. **Advising**: Academic impact is also indicated by student advising. In SNRS, the Entomology Department is the only program without a BS degree. Range, NRM and Soils all have BS, MS and PhD degrees.

<table>
<thead>
<tr>
<th>Majors of graduate students advised by SNRS faculty. Grad Advising by degree and major</th>
<th>Major</th>
<th>PhD</th>
<th>MS</th>
<th>MNRNM</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Entomology</td>
<td>4</td>
<td>7</td>
<td>11</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>ECS</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>NRM</td>
<td>13</td>
<td>33</td>
<td>23</td>
<td>69</td>
<td>69</td>
</tr>
<tr>
<td>PLSC</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Range</td>
<td>2</td>
<td>10</td>
<td>12</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Soils</td>
<td>5</td>
<td>9</td>
<td>14</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>62</td>
<td>23</td>
<td>111</td>
<td>111</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Graduate students advised by faculty in SNRS, regardless of student major. Grad Advising by Major Advisor’s Program</th>
<th>Program</th>
<th>PhD</th>
<th>MS</th>
<th>MNRNM</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENT</td>
<td>4</td>
<td>9</td>
<td>13</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>NRM</td>
<td>5</td>
<td>12</td>
<td>23</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>RNG</td>
<td>8</td>
<td>29</td>
<td>37</td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>SOIL</td>
<td>9</td>
<td>16</td>
<td>25</td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>66</td>
<td>23</td>
<td>115</td>
<td>115</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BS students enrolled in SNRS program. Undergrad. Advising</th>
<th>Program</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NRM</td>
<td>127</td>
</tr>
<tr>
<td></td>
<td>Range</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Soils</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>149</td>
<td></td>
</tr>
</tbody>
</table>

SNRS faculty also serve as advisors for 8 co-curricular clubs.

C. **Department/Unit/College Goals and Priorities for the Coming Year**

1. Be accountable to stakeholder needs:
   a. Meeting legislative directive for Soil Health and Land Management Initiative
   b. Commodity groups: sugarbeet, wheat, soybean, etc.

2. Develop mission and goals for SNRS

3. Meet overall goals of NDSU in striving for national recognition in each of the SNRS programs

To create quantitative goals, we compare our metrics with similar programs using NRC data (Table below) and then calculate what we need to do to stand out (reach the 70th percentile nationally) in PhD graduations, publication, and faculty diversity.

<table>
<thead>
<tr>
<th>Program Size</th>
<th>% Female</th>
<th>Approximate Percentile Rank Nationally</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRM</td>
<td>0.10</td>
<td>0.90</td>
</tr>
<tr>
<td>SOIL</td>
<td>0.20*</td>
<td>0.70</td>
</tr>
<tr>
<td>ENT</td>
<td>0.10</td>
<td>0.90</td>
</tr>
<tr>
<td>RNG</td>
<td>0.10</td>
<td>0.50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Program</th>
<th>% Female</th>
<th>Publication Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRM</td>
<td>0.10</td>
<td>0.25</td>
</tr>
<tr>
<td>SOIL</td>
<td>0.20*</td>
<td>0.30</td>
</tr>
<tr>
<td>ENT</td>
<td>0.10</td>
<td>0.15</td>
</tr>
<tr>
<td>RNG</td>
<td>0.10</td>
<td>0.15</td>
</tr>
</tbody>
</table>

*This could potentially move to >0.5 if vacant position was filled.

a. **Increasing PhDs** (current annual commencements --> quantitative goal to help reach national prominence)
   i. NRM: 2.6 --> 5 moves NDSU NRM to 70th percentile nationally
   ii. SOIL: 0.4 --> 2 moves NDSU Soil Science to 70th percentile nationally
   iii. ENT: 2.2 --> 4 moves NDSU ENT to 70th percentile nationally
   iv. RNG: 0.5 --> 1.5 moves NDSU RNG to 70th percentile nationally

b. **Publication rate** (current annual # of publications/faculty --> quantitative goal to help reach national prominence)
   i. NRM: 0.05 --> 0.8 moves NDSU NRM to 70th percentile nationally
   ii. RNG: 0.32 --> 1.5 moves NDSU RNG to 70th percentile nationally
   iii. ENT: Current publication rate (1.81) is at the 70th percentile nationally
   iv. SOIL: Current publication rate (2.24) is second highest nationally

c. **Diversity**: for all four programs in SNRS the % female faculty are all nationally ranked≥50th percentile. Moreover, NRM is 1st in the nation in this category, Soils is 2nd, and Entomology is 3rd. Therefore the goal is to maintain this diversity within SNRS programs.
Appendix

(i) Publications by program in SNRS obtained from Web of Knowledge.

<table>
<thead>
<tr>
<th>Program</th>
<th>Published Items in Each Year</th>
<th>Citations in Each Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RANGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENTOMOLOGY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOIL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SNRS TOTAL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The publication rate of NRM faculty was 0.4 publications per faculty over a five year average. This publication rate, as defined by NRC, ranked near the 10th percentile among NRM programs reporting.

The publication rate of Range faculty was 1.17 publications per faculty over a five year average. This publication rate, as defined by NRC, was near the 35th percentile among departments reporting.

The publication rate of Entomology faculty was 1.81 publications per faculty over a five year average. This publication rate, as defined by NRC, ranked in the 70th percentile among departments reporting.

The publication rate of Soils faculty was 2.24 publications per faculty over a five year average. This publication rate, as defined by NRC, was near the 90th percentile among and ranked 3rd highest of the 26 programs reporting.
(ii) Probability distributions of four factors (i.e., faculty size, % female faculty, PhDs commenced and publication rate) for departments listed in the NRC database. The red dots represent the NDSU SNRS program (i.e., NRM, Soils, Entomology, or Range) and fall within this distribution. Regression and 95% confidence intervals are provided.
Natural Resources Management Interdisciplinary Program
Academic Annual Report – Fiscal Year: 1 July 2011 – 30 June 2012

A. List Program Goals for the Past Year

1. Continue to increase undergraduate/graduate student enrollment.
   Success: net-total-enrollment increased from 174 (April 2011) to 186 (April 2012).
2. Continue to graduate students in all degree programs.
   Success: Twenty-five students received BS degrees; three students received MS degrees; twelve students received MNRM degrees; one student received his PhD degree during the 2011-2012 academic year.
3. Continue to increase course offerings.
   Success: One new course was offered: NRM 421/621 Environmental Outreach Methods and was enrolled to capacity; NRM 702 Natural Resources Management Planning was team-taught, completely redesigned, and offered after several semesters hiatus; this course was enrolled to capacity.
4. Continue to increase graduate student enrollment with additional NRM department/program affiliates.
   Success: NRM engaged one new NRM-MS student in the Department of Emergency Management and one new NRM-PhD student in the Department of History, Philosophy, & Religious Studies.
5. Continue to increase student diversity, equity, and global outreach in all degree programs.
   Success: one Native American man is enrolled in the PhD Program; one black American man is enrolled in the MNRM program; one Native American woman is enrolled in the BS program. Eleven international students are enrolled in the program; four men and seven women. Three of the international students are enrolled in the PhD program, two international students are enrolled in the MS program, and four international students are enrolled in the BS program. The countries represented are: France, India, Japan, Kazakhstan, Kyrgyzstan, Mongolia, Nigeria, Niger Republic, Sri Lanka, Sudan, and Zimbabwe
6. Continue to increase international students from international scholars programs.
   Success: two Muskie Scholars and one Fulbright Scholar
7. Continue to encourage exemplary levels of academic achievement.
   Success: Dean's List Fall 2012 – 25 students; Dean’s List Spring 2011 – 22 students
8. Continue to encourage Community Service activities by NRM students.
   Success: Tallgrass Prairie Reconstruction Project at the Campus Technical Park; North Country Trail Construction Project at the Ekre Ranch (NDSU); Volunteered at Theodore Roosevelt National Park on National Public Lands Day (trail reconstruction).

B. Executive Summary of Accomplishments in Achieving the Goals:

a. Teaching: The NRM Interdisciplinary Program offered nine courses for the 2011-2012 academic year. All of these courses exceeded expected enrollment, as a result two of these courses (NRM 421/621 and NRM 431/631) will be offered each semester on a trial basis for the upcoming year. NRM 702 was team-taught for the first time this year following a hiatus of several semesters. This course was completely redesigned to incorporate an extensive amount of team work and in-class activities by the students. NRM421/621 was initially offered this past year and exceeded enrollment expectations. This course engages students in an extensive amount of hands-on learning activities. Assessments are conducted for all NRM courses as covered in the NRM Annual Assessment Report.

b. Research/Scholarship: NRM is an interdisciplinary academic program and as such all research/scholarship is reported by affiliate faculty in their home departments/programs. No research FTEs are allocated to the NRM program. However, NRM faculty affiliates are active researchers and authors of scientific literature published in refereed journals. Please consult respective Annual Reports from respective departments and programs.
c. Outreach: NRM is an interdisciplinary academic program and as such all outreach activity by affiliate faculty is reported in their home departments/programs. Several NRM faculty affiliates are extremely active in outreach activities, primarily associated with water issues, but also a variety of natural resources related issues off campus.

NRM is an interdisciplinary / academic program and as such, does not directly engage in research or outreach activities but does add unique value to the mission of NDSU as follows and inter alia:

- By enabling traditional departments to broaden their focus toward an interdisciplinary perspective, which is a 21st century forward-looking, non-traditional educational model.
- By increasing student diversity, equity, and global outreach in all degree programs offered by NRM.
- By providing departments with students who would not otherwise be able to enroll in the department because their international scholarship (Muskie Scholars) requires/prefers an interdisciplinary program affiliation.
- By enabling departments not offering doctoral degrees the opportunity to host graduate students pursuing a PhD in an interdisciplinary program.
- By enabling departments to host students pursuing a "Plan-B" Master's Degree option, if the department does not offer this option or does not have available GRAs.
- By providing departments with an additional pool of students from which to select GRAs.
- By generating tuition funds issuing from student enrollment in the new MNRM Professional Degree Program.
- By providing departments with the opportunity to engage in cross-discipline granting and funding opportunities that may require an interdisciplinary component/affiliation for eligibility.
- By serving as a recruiting catalyst for Departments.
- By increasing the pool of undergraduate students who elect to minor or double-major in a discipline outside of NRM.
- By increasing across-campus departmental FTEs as a result of increased enrollment in courses comprising the NRM curriculum.
- By increasing the number of graduate students enrolled and graduating from NDSU with graduate degrees.

C. Program Goals for the upcoming academic year

See "A" above for NRM Program Goals and in addition, present two courses that are new offerings: NRM 401/601 Urban Ecosystem Management and NRM 402/602 River & Stream Resource Management.

NRM is an interdisciplinary / academic program and as such, does not directly engage in research and/or outreach activities (see B-b and B-c above), therefore, the following chart is non-applicable.

Research, Scholarly, and Creative Activities

<table>
<thead>
<tr>
<th>Category</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Reviewed Publications (published or accepted)</td>
<td>N/A</td>
</tr>
<tr>
<td>National or International Invited Presentations</td>
<td>N/A</td>
</tr>
<tr>
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<td>N/A</td>
</tr>
<tr>
<td>Research Grants and Contracts</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Cumulative Amount:</strong> $ N/A</td>
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</tbody>
</table>

**NOTE:** To review the complete “NRM Annual Report and Assessment Report – 2011-2012” please select the link on the NRM Webpage www.ndsu.edu/nrm
A. Department/Unit/College Goals and Priorities for the Past Year
The department received the NDSU Advance FORWARD award. The department conducted a national search for a new department head. The position was filled on October 16, 2011. 2011 was concluded by initiating a national search for three new faculty to replace two faculty and to support the new MPH program. Other major undertakings for the department included the implementation of a joint M.S. with Makerere University in Kampala Uganda.

B. Provide Executive Summary of Accomplishments in Achieving the Goals and Priorities for this Past Year which include the following areas:

- Teaching
  - A Joint MS degree & Graduate Certificate in “International Infectious Disease Management & Biosecurity was approved at NDSU by the North Dakota State Board of Higher Education
  - Accreditation standards were evaluated and plans made for the Infectious Disease Management track of the new MPH program
  - The assessment process the department had been utilizing was deemed to be not functioning as intended. New plans for assessment were discussed and are in development and implementation.
  - Information regarding peer programs and national guidelines, such as those provided by the American Society for Microbiology for undergraduate microbiology programs and graduate program information available through the NRC were collected.

- Research/Scholarly/Creative Activities (VMS faculty in bold)
  - Peer-reviewed publications (published or accepted)

<table>
<thead>
<tr>
<th>#</th>
<th>Citation</th>
<th>Type</th>
</tr>
</thead>
</table>

1 Schuh, J. M. Modeling allergic bronchopulmonary Aspergillosis in the mouse. Invited talk, Pulmonary Medicine Depr. and Environmental and Occupational Health, University of Nebraska at Omaha, July 2011. Edited Peer


10 Schuh, J. M. Construction of the antibody repertoire in the mouse. Invited talk, Pulmonary Medicine Department and Environmental and Occupational Health, University of Nebraska at Omaha, July 2011. Reviewed Peer


16 Wadhawan, T., Khan, E., Chiu, M., Khan, E. 2011. Adsorption of Cryptosporidium parvum oocysts on soil samples obtained from North Dakota. 2011 Land Grant & Sea Grant National Water Conference, Washington DC, USA. Invited Peer

17 Wadhawan, T., Khan, E. Chiu, M., Khan, E. 2011. A method to determine biodegradable dissolved organic nitrogen in water. 4th IWA Specialty Conference on Natural Organic Matter: From Source to Tap and Beyond, Irvine, CA, USA. Invited Peer

8 Grant S

2011 Joint Eisenhower (Experimental Program To Stimulate Competitive Research) (ESPR) Conference, October 4, 2011 at NDSU Memorial Union, Fargo, ND. Reviewed Peer

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Posters

10 Porter (Univ. of Utah), Hanson (Co-PI, Univ. of Utah), Schuh (major collaborator), NDSU, NIH/NIAID 1R21 AI085476-01, Innovative assay development for the diagnosis of invasive Aspergillosis, 2010-2012. Invited Peer

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The following grants have been awarded to the college:

- $2,000,000 from the National Institutes of Health (NIH) for a project titled "Evaluating the Impact of Antimicrobial Resistance on Enteric Pathogens in Cattle" (2015-2016)
- $1,000,000 from the Bill & Melinda Gates Foundation for a project titled "Advancing Diagnostics for Infectious Diseases in Developing Countries" (2016-2018)
- $500,000 from the USDA for a project titled "Improving the Detection of Foodborne Pathogens in Livestock" (2017-2019)
- $100,000 from the Fulbright Commission for a project titled "Fostering International Collaboration in Agricultural Research" (2020-2022)

In addition, the college has received several smaller grants and donations from various organizations, including the University of Nebraska, the Nebraska Department of Agriculture, and private foundations. The total amount of funding received by the college is not specified in the document.
Agriculture Communication Annual Report
July 1, 2011 – June 30, 2012
www.ag.ndsu.edu/agcomm

Goals and Priorities for the Past Year (copied from Planning in 2009-2011 biennial report)

- Start developing landing pages that provide an introduction to each publication’s PDF in Ag CMS
- Improve the process to get old publications reviewed
- Review the billing process for walk-up copiers; possibly let key operators look up data and ask
  departments to split the month’s bill
- Explore electronic IDBs
- Explore pulling finished data out of Digital Storefront to copy directly into a spreadsheet for Accounting
- Have all county Extension websites in Ag CMS by Dec. 1, 2011
- Coordinate with University Relations on the Web template update, and convert when Plone is upgraded
- Explore mobile Web compatibility and phone apps
- Ask the Ag Budget Office to conduct a financial analysis of Print and Copy Services, Graphics and Video
- Have Ag Comm use Communicator instant messaging and LiveMeeting
- Host a communications camp that gives faculty and staff hands-on experience incorporating a variety of
  media

Major Accomplishments of the Past Year

Teaching

- Led June 25-27 Communications Camp for four Extension program teams (15 agents and specialists)
- Provided information via Web Services Facebook page, blog, Live Meeting trainings; and Let’s
  Communicate
- Taught many breakouts related to communications and technology at Extension/REC Fall Conference and
  spring Support Staff Conference
- Led two 4-H film-making hands-on trainings
- Developed online Ag CMS How-To Guide
- Facilitated a second Twitter cohort for immersive learning
- Led use of immersive learning for social media adoption in Cooperative Extension with a model adopted
  by Extension educators at University of New Hampshire, Ohio State University and Penn State
- Led national eXtension Learn sessions on Pinterest, Google Alerts, RSS Feeds, Twitter and mobile
  applications
- Taught multiple breakout sessions at International Association for Communication Excellence, National
  Extension Technology Conference (via technology) and Extension Disaster Education Network meetings

Research/Scholarly/Creative Activities

- Completed transition of Ag content management system servers to Plone 4 and new template similar to
  NDSU standard
- Developed new process for printing and shrink wrapping pesticide, fungicide, insecticide and weed
  control guides for easier handling and shipping
- Leased updated digital press with new technology that provides glossy pages, reduces cracking and
  streaking, and includes a booklet maker
- Printed more publications in color on the digital press, which also allows for print on demand and
  improved quality
- Worked with Publication Services to redesign NDSU business cards for printing in three colors on digital
  press
- Started gathering faculty and staff photos in Flickr Ag Communication Group
- Worked with Myriad Devices to develop two phone apps: Disaster Recovery Log (almost 2,000 installs) and Winter Survival Kit (more than 58,000 installs)
- Listed 50 4-H trunks for checkout as resources in Outlook Calendar
- Distributed publication inventory reports to program leaders and authors quarterly

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<tr>
<td>National or International Invited Presentations (ACE, NETC, EDEN)</td>
<td>7</td>
</tr>
<tr>
<td>Juried presentations/performances/exhibitions (ACE, NDPC &amp; NFPW contest entries)</td>
<td>24</td>
</tr>
<tr>
<td>Research Grants and Contracts: Ag Mag $4,500, NIFA Special Needs for Winter Survival Kit Phone App $10,000</td>
<td>Cumulative Amount: $14,500</td>
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**Service/Outreach/Extension**
- Developed flood recovery videos, Web pages, news releases, fact sheets, etc.
- Started producing PDFs that are accessible by reading software on websites
- Developed home energy videos for Moodle online course and cable TV stations
- Produced videos on Morrill Act 150th anniversary, protecting bees from pesticides, irrigation testing, grain dryer fan selection and testing, NDSU Alumni awards, pesticide certification, Emerald Ash Borer prevention, raised garden beds and more
- Helped initiate weekly Spotlight on Economics column by various Agribusiness and Applied Economics faculty
- Produced several high-quality publications, including Annual Highlights targeted at legislators and county commissioners, the Eat Smart. Play Hard. Together magazine, Operation: Military Kids annual report and Rural Leadership North Dakota 2009-11 summary book
- Reviewed and updated Digital Storefront software for Print and Copy Services online submission
- Ellen Crawford elected National Federation of Press Women treasurer and Becky Koch moved to Association for Communication Excellence president-elect from vice president

**Goals and Priorities for the Coming Year**
- Complete landing pages and delete or update online publications older than 2006
- Work with NDSU International Programs to translate some newsletters into Spanish
- Explore fungicide, insecticide, herbicide and weed control guides for mobile technologies
- Facilitate a meeting of departmental and REC communications and technology support staff to share ideas and make them aware of Ag Comm resources
- Modernize the look of publication PDFs (often with color and photos) and design as more Web-friendly
- Explore e-pubs and mobile technology to make information easier to use on tablets and smartphones
- Develop a template for Extension agents and specialists that will assist them in marketing their programs to targeted audiences
- Work with other communications professionals on campus to develop news media lists we all can share when sending out news releases, media advisories, etc.
- Increase use of online personal learning networks for workplace learning within NDSU Agriculture
- Increase the number of NDSU Agriculture employees with 20 or more work-related online connections
- Work with NDSU administration to explore all campus printing and copying coming through Print and Copy Services
- Market Print and Copy Services options in a variety of ways on campus and to other state agencies
- Explore and initiate variable data printing to personalize Print and Copy Services work
- Start using a remote system to get monthly readings from walk-up copiers around campus for billings