

UNL Strategic Plan – Department of Entomology – 2006

Priority 1: Respond to immediate needs and keep department competitive.

Goal: Continue Long-Range Departmental Planning Process.

Objective 1: Implement CSREES Review recommendations as outlined by IANR Deans and integrate into a cohesive plan of action for the next five years.

Actions:

- With current financial constraints in mind, identify and prioritize specific staffing and space requirements needed to accomplish long-range plan.
- Fill vacancies resulting from retirements.
- Develop contingency plans to cover insect physiology, urban and horticultural entomology research/teaching/extension programs and livestock/veterinary entomology at WCREC.
- Add expertise in priority areas including Insect/Plant Biochemistry with a functional genomics focus and Veterinary/Medical Parasitology.

Standards/Factors to Judge Success:

Short-Term Goal: Hire new Department Head. As financial resources permit, replace Insect Physiologist, Veterinary Entomologist at WCREC, and Urban Entomologist; initiate search for a Veterinary/Medical Parasitologist; have proposed Insect/Plant Biochemistry (with functional genomics focus) position placed on the Dean's priority position list. Obtain additional space in the Plant Industry Building.

Long-Term Goal: Programs will be in fundable areas and success measured by national recognition, generation of new information, and adequate external funding.

Priority 2: Department is dedicated to meeting the needs of undergraduate and graduate students while presenting a curriculum balanced between "basic" and "applied" entomology. We are committed to maintaining a strong mentoring relationship between students and professors.

Goal: Develop and Expand Teaching Programs.

Objective 1: Continue to provide high quality, innovative, and relevant core teaching programs.

Actions:

- Continue offering and improving current undergraduate programs: Insect Science major and minor, Diversified Agriculture and Plant Protection Sciences majors; offer a number of service courses for CASNR and other colleges; provide professional development opportunities for undergraduates (UCARE and other research/teaching experiences).
- Maintain strong graduate program (MS and PhD for resident students, MS Distance Education Program).
- Enhance MS Distance Education programming by hiring a Lecturer rank Distance Education Coordinator, developing distance-delivered certificate programs, and empowering the Department's Distance Education Committee to refine and grow the program.
- Youth and Outreach Education Programs (closely linked with Extension) designed for K-12 schools (faculty, staff, graduate, and undergraduate students), *Bug Bash*, *Our Zoo-to-YOU*, Science Teacher Workshops; Science Focus High School program, UNL Advanced Scholars Program, Insects in the Classroom workshops, and 4-H Entomology.

Objective 2: Develop and implement innovative recruitment and retention programs for Insect Science and Diversified Agricultural Studies majors and Distance MS students.

Actions:

- Recruit students through youth education and outreach programs including *Bug Bash*, *Our-Zoo-to-YOU* (expand to western Nebraska), 4-H Big Red Summer Camps, Science Focus High School, UNL Advanced Scholars Program, Insects in the Classroom workshops, undergraduate student organizations, and participation in UNL student recruitment efforts (NU Preview Day, CASNR Open House, Women in Science, Early Awareness Program).
- Employ Recruitment Coordinator responsible for developing and implementing a strategic marketing and recruitment plan for the Insect Science, Diversified Agricultural Studies, and MS Distance Education majors.
- Develop special topics courses to provide teaching, research, extension, and professional development opportunities for students in the Insect Science and Diversified Ag programs.
- Work with high school teachers to make them aware of CASNR programs.

Objective 3: Develop new education programs.

Actions:

- Develop areas of focus/options in the Insect Science and Plant Protection Sciences majors.
- Establish long-term partnership with Orkin to provide distance-delivered training for their employees.
- Work with School of Natural Resources, Criminal Justice, and other academic and private sector partners to develop a Forensic Science undergraduate major within CASNR.

Standards/Factors to Judge Success:

Short-Term Goal: Insect Science major available for Spring 2006. Seventy undergraduate majors (Insect Science and Diversified Ag) and 10 Insect Science minors, 30-35 on-campus graduate students, and 80-90 active distance MS students; continue strong professional placement of our graduates; 2-3 students/yr. will select our department to conduct undergraduate research/theses. The Orkin training program will provide revenue and new students for our distance MS program, while the proposed Forensic Science Initiative will establish a new curriculum and recruit students for CASNR. Our courses will continue to enable citizens to be promoted, receive raises, or become qualified for new positions in communities; water quality information will be incorporated into recommendations and scientific literature.

Long-Term Goal: Maintain quality and quantity of current teaching programs and have Insect Science and Diversified Ag undergraduate majors with 20-30 and 60-70 students, respectively; MS Distance Education Program with 20 courses, 10-15 certificates, and 100 active students. Income from differential out-of-state tuition returns will cover at least 50% of distance education administrative costs. Our Entomology programs will be recognized as a prime source for new information to help professionals maintain currency of expertise and develop new skills to meet the needs of an ever changing world.

Resources Needed to Fully Accomplish Plans:

Maintain Teaching FTE by replacing FTE lost to retirements or resignations (faculty or instructors).

Additional laboratory and preparation space is critically needed to handle increased enrollment.

New teaching FTE and teaching assistants are needed to handle current teaching and administrative overload in distance program and to support anticipated growth in on-campus programs.

Priority 3: Expand areas of collective research strength: 1) Crops IPM; 2) Insect/Host Interactions; 3) Veterinary and Public Health IPM; and 4) Systematics/Biodiversity.

Goal: Expand research capabilities by adding complementary areas of expertise: 1) Molecular Biology and Functional Genomics (Insect/Plant Biochemistry); 2) Quantitative Ecology/ Population Genetics; 3) Vector Ecology (Public Health IPM); and 4) Insect Behavior.

Objective: Add expertise and competency in the four areas listed above to enable the department to expand its relevancy to Nebraska Stakeholders, better compete for federal funding, and leverage existing skills to build entirely new capabilities.

Actions:

- As positions are released, we will evaluate the need to continue existing programs or portions of programs against the new priorities.
- Maintain flexibility in filling positions to cover critical expertise gaps in our programs.
- All positions will be evaluated with respect to their ability to fit within the mission of IANR and the ability to obtain external support necessary to support the area of emphasis.

Standards/Factors to Judge Success:

Short-Term Goal: Increased competitive grant submissions. As financial resources permit, replace Insect Physiologist, Veterinary Entomologist at WCREC, and Urban Entomologist; initiate search for a Veterinary/Medical Parasitologist; have proposed Insect/Plant Biochemistry (with functional genomics focus) position placed on the Dean's priority position list.

Long-Term Goal: We will be recognized nationally and internationally for excellence in Crops IPM, Insect/Host Interactions, Veterinary and Public Health IPM, and Systematics/Biodiversity. Programs will be in fundable areas and success measured by national recognition (invited presentations, faculty and student awards), generation of new information (publications, technology transfer: avg. 5/FTE), and external funding (competitive grants: avg. \$150K/FTE).

Resources Needed to Fully Accomplish Plans:

- Expertise in molecular biology/functional genomics, quantitative ecology/population genetics, vector ecology, and insect behavior by adding new positions, incorporating into re-described positions, and to a limited extent, by partnering with other units.
- Laboratory and equipment to support expanded programs in molecular biology/functional genomics, biochemistry, population genetics, molecular systematics, and public health.
- Department administrative support to help develop grant proposals.

Priority 4: Be recognized as a premiere source of continuing education and knowledge related to the most pressing entomological issues facing citizens of the state, region, and beyond.

Goal: Develop and deliver new knowledge to solve the most pressing entomological problems facing citizens of the state and region.

Statement: We will focus efforts on pressing problems that we have the capability of developing and delivering new knowledge. In other areas, we will respond to clientele requests for information but may direct people to other sources of information.

Objective 1: Maintain an appropriate applied research base to enable the development and delivery of new knowledge to solve the most pressing problems facing clientele.

Actions:

- Continually re-evaluate all programs to make sure we have the resources and emphasis to provide answers to the most urgent problems facing clientele.
- Address pressing problems such as the Oak Itch Mite, West Nile Virus, and Japanese Beetles as they arise.
- Maintain aquatic toxicology research programs which focus on identifying and understanding the role of potential toxins that impact surface water.
- Always re-evaluate extension, research, and teaching needs in developing position descriptions for re-filling existing positions or creating new positions.

Objective 2: Develop focused programs for targeted audiences in one or more of the following areas.

Actions:

- Veterinary Entomology – Build vector ecology emphasis into the livestock entomology position to address critical problems and expand external funding potential.
- Basic entomological education for: APHIS inspectors and state government employees; youth/teacher education; forensic entomology; resistance management.
- Explore partnering with other units on statewide programs with potential for external funding.

Objective 3: Expand use of distance technology in program delivery.

Actions:

- Pest Management – Maintain effective, up-to-date IPM management information on web pages; certificate programs for practitioners in a variety of crops and commodities, in-service education for extension educators and assistants.
- Traditional and specialty crops pest management continuing education.

Objective 4: The Department will identify specialized areas of entomology that can be marketed as extended education opportunities to the global community.

Actions:

- Partner with Plant Pathology, Agronomy and Horticulture, School of Natural Resources, and other departments to offer specialized areas of training such as an agricultural biosecurity and regulatory program (offered through MS Agr or Entomology), Doctor of Plant Health or Forensic Science.
- Develop credit/non-credit certificate programs in one or more of the following: Insect IPM, Urban Pest Management, Forensic Entomology, Medical Entomology, Biological Risk Assessment, Resistance Management, International Agriculture and IPM, and Insects in the Classroom.

Standards/Factors to Judge Success:

Short-Term Goal: Expand livestock entomology position to include veterinary and public health aspects. Advertise certificate program for insect IPM. Make specific plans to cover horticultural entomology extension/teaching; develop a plan for future crops IPM programs in central Nebraska.

Long-Term Goal: Major extension efforts will have adequate applied research support and will be competitive for external funds.

Resources Needed to Fully Accomplish Plans:

- Maintain Extension FTE, replace current and future FTE lost to retirements or resignations.
- Operating and technical support for South Central and West Central crops research/extension programs.