ARD News October 2006
October 2006

Comments from the Dean

There was a time our world did not worry about the resources it consumed. People thought them infinite. No one knew resources could be totally depleted, never to be seen again.

That time is past. Long past.

Today we know that if our state, our society, and our world are to survive and thrive, we must develop a renewable society, a sustainable society. A society that replenishes the resources it uses in ways that do not damage and may actually improve the environment.

The question is – how?

We – the researchers in our Agricultural Research Division and our colleagues around the world – are the people who get to discover scientific answers to that question.

We’re the ones who get to lead the way toward that remarkable, renewable, sustainable future.

We’re the ones who get to imagine not only that brave new world, but the knowledge we will need to get there, and the knowledge that will help our state and world build and grow.

William Arthur Ward once said, “If you can imagine it you can achieve it.” I’d say land-grant scientists have tremendous imaginations, given all achieved down through the years. Sometimes I think of the knowledge yet to be imagined by researchers who will follow us in the long continuum of scientific discovery, and I am so proud to be part of this continuum, working with all of you to build the base upon which future knowledge will grow.

Here in Nebraska one of the questions we need to carefully consider is what kind of research we must do to position our state to take advantage of that potential? How do we determine the possibilities and consequences that might have for our state, and provide essential knowledge to balance the two? We have a responsibility to answer those questions here in ARD.

As a society we’ve long tended to do what we need to do over a short period of time to get us through. As scientists we must look for long-term solutions to provide the best, most complete information possible so our society can make informed decisions as to what it will and will not do and become.

I look forward to working with you on that important mission.

Gary L. Cunningham
Dean and Director

UNL Temporarily Suspends Hunting on Land After Court Ruling

Hunting and certain other recreational activities are being suspended, at least temporarily, on University of Nebraska–Lincoln properties in the wake of a Nebraska Supreme Court ruling that raises new questions about liability exposure for injuries suffered on public land.

Among the most immediate impacts: About 10,000 acres of land at the University’s Agricultural Research and Development Center near Mead, a popular hunting spot in past years, is off-limits during the pheasant hunting and bow hunting for deer seasons.

The temporary suspension of hunting applies also to other University-owned sites, including Gudmundsen Sandhills Laboratory near Whitman, the Dalbey-Halleck farm near Virginia, Neb., the Horning State Farm in Cass County and the University’s Cedar Canyon property in Lincoln County.

The University is among many government entities reassessing what they allow on their property after the state’s highest court last month ruled that the state’s Recreational Liability Act does not protect governments from lawsuits over injuries suffered in recreational activities on public land.

The temporary suspension of hunting applies also to other University-owned sites, including Gudmundsen Sandhills Laboratory near Whitman, the Dalbey-Halleck farm near Virginia, Neb., the Horning State Farm in Cass County and the University’s Cedar Canyon property in Lincoln County.

The University is among many government entities reassessing what they allow on their property after the state’s highest court last month ruled that the state’s Recreational Liability Act does not protect governments from lawsuits over injuries suffered in recreational activities on public land. The act is meant to shield only private landowners, the court decided.

It’s expected the Nebraska Legislature next year will consider legislation that would restore those protections from
liability to government agencies.

Until then, however, the potential liability exposure for taxpayers is too great to allow business as usual, said Alan Moeller, Assistant Vice Chancellor of the University’s Institute of Agriculture and Natural Resources, which administers the ARDC and other properties.

Moeller emphasized this is a temporary suspension. If the Legislature reinstates the protections from liability to governments, UNL again could allow hunting and other recreational activities. “We take this step reluctantly, but we feel we have no choice,” Moeller said. “If we ignore this ruling, we would be leaving taxpayers open to potentially millions of dollars in damages if someone was hurt on one of our properties.”

Moeller said UNL made its decision after consulting with University legal counsel and officials with the Nebraska Game and Parks Commission.

Although hunting is the most immediate concern, Moeller noted that UNL allows other types of recreational activities on some of its properties. University officials are compiling a list of those activities and likely will suspend them, too.

Mussehl Endowment 2006-2007

Nine proposals were submitted for the Mussehl Endowment. This substantial endowment was established in the University of Nebraska Foundation by the Mussehl Estate to support poultry research programs at UNL. Projects eligible for support from the Endowment include poultry management, health, nutrition, physiology, waste management and utilization, and poultry product research. The following proposals were funded:

Sheila Scheideler, Animal Science
“Dried Distillers Grains with Solubles in Laying Hen Rations”

Jeyamkondan Subbiah, Biological Systems Engineering
Glenn Froning, Food Science and Technology
Ashok K. Samal, Computer Science and Technology
“A Machine Vision System for Detecting Eggshell Defects”

Jens Walter, Food Science and Technology
Sheila Scheideler, Animal Science
“Identification of Novel Enzymes for the Supplementation of Poultry Feed Using a Metagenomic Approach”

Harshavardhan Thippareddi, Food Science and Technology
Roger Mandigo and Dennis Burson, Animal Science
“Reducing the Risk of Listeria monocytogenes in Natural and/or Organic Processed Poultry Meat Products”


A trust established by Charles E. Baker was liquidated and an endowment was established at the University of Nebraska Foundation. The interest from the endowment is used to support one graduate research assistantship (GRA) in the areas of: (i) soil conservation and management, or (ii) breeding and genetics of food and feed grains, including germplasm and cultivar development.

Funds are awarded for a GRA. A graduate student working on an M.S. degree can hold a GRA for up to two years, whereas a student enrolled in a Ph.D. program can receive funds for up to three years. Preference in awarding the GRA will be given to Ph.D. students. Funding will be limited to a maximum of $12,000. Three proposals were awarded to:

Steve Baenziger, Agronomy and Horticulture
“Response Different Wheat Plant Height (Rht) Genes in Diverse Environment at Nebraska”
Funded: $12,000 Aug. 1, 2006 - July 31, 2007

Viacheslav Adamchuk, Biological Systems Engineering
“Delineation of Differentiated Management Areas Within an Agricultural Field”
Funded: $12,000 Aug. 1, 2006 - July 31, 2007

Patrick Shea, School of Natural Resources
“Graphite and Carbide Catalysts for Management of Soil and Sediment Quality”
Funded: $12,000 Aug. 1, 2006 - July 31, 2007

Recognition of Junior Faculty for Excellence in Research

In 1991, the ARD Advisory Council established a program to recognize the research accomplishments of junior faculty members. Typically, two junior faculty are recognized each year. The recognition consists of a certificate, engraved plaque, and $3,000 for professional development or research-related activities.

Criteria used to evaluate nominees include scientific publication record, especially those publications resulting from research at UNL, external grant funding and recognition by peers. A sub-committee of the ARD Advisory Council evaluates the nominations and recommends recipients to the Dean for Agricultural Research.

The following faculty were selected for recognition during the 2006-2007 academic year:

Dr. Melanie Simpson, Assistant Professor, Biochemistry
Dr. Andrew Tyre, Assistant Professor, School of Natural Resources

Congratulations to Drs. Simpson and Tyre! A call for nominations is issued each year on or about July 1. We encourage faculty and administrators to nominate deserving junior faculty in their units.
### New or Revised Projects
#### July and August 2006

**NEB 13-178 W-1171, Germ cell and embryo development and manipulation for the improvement of livestock**  
**Investigator:** Brett White, Animal Science  
**Status:** Multistate project effective Oct. 1, 2005, through Sept. 30, 2009

**NEB 19-020 Midwest Advanced Food Manufacturing Alliance**  
**Investigator:** Steve Taylor, Food Science and Technology  
**Status:** Special grant project effective July 15, 2006, through July 14, 2007

**NEB 22-313 Contribution of fusarium lateritium to weed suppressive soils and weed abundance**  
**Investigator:** John Lindquist, Agronomy  
**Status:** Grant project effective Aug. 1, 2006, through July 31, 2009

**NEB 22-314 Soybean breeding and genetic studies**  
**Investigator:** George Graef, Agronomy  
**Status:** Grant project effective July 1, 2006, through June 30, 2011

**NEB 28-087 Quantifying risk factors for evolution of European corn borer resistance to Cry1F expressing corn hybrids**  
**Investigator:** Blair Siegfried, Entomology  
**Status:** Grant project effective Sept. 1, 2006, through Aug. 31, 2009

**NEB 30-111 Rubisco Phylogenetic Engineering**  
**Investigator:** Robert Spreitzer, Biochemistry  
**Status:** Grant project effective Sept. 15, 2006, through Sept. 14, 2008

**NEB 36-062 Biotin affects cytokine metabolism**  
**Investigator:** Janos Zempleni, Nutritional and Health Sciences  
**Status:** Grant project effective Sept. 1, 2006, through Aug. 31, 2009

**NEB 36-063 Mechanisms of biotin homeostasis**  
**Investigator:** Janos Zempleni, Nutritional and Health Sciences  
**Status:** Hatch project effective July 15, 2006, through July 14, 2011

**NEB 43-101 The ecology, etiology, and management of crop diseases important to western Nebraska**  
**Investigator:** Robert Harveson, Panhandle Research and Extension Center  
**Status:** Hatch project effective Jan. 1, 2006, through Dec. 31, 2010

### Proposals Submitted for Federal Grants
#### July and August 2006

The following is a listing of proposals that were submitted during July and August 2006 by faculty for federal grant programs. While not all grants will be funded, we are appreciative of the faculty members’ outstanding efforts in submitting proposals to the various agencies.

- **Shripat Kamble and Chris DeHeer** — NSF — Collaborative research: An experimental study of colony boundary disintegration in the termite reticulentes flavipes — $279,714

- **Curt Weller** — USDA-ARS — Development of sorghum lipids as nutraceuticals — $32,000

- **Ruma Banerjee** — NIH — Transsulfuration and hyperhomocysteinemia — $1,600,550

- **Donald Becker** — NIH — Mechanistic studies of functional switching in the PutA Flavoprotein — $1,454,816

- **David Carter, Rhae Drijber and Leon Higley** — NSF — Carcass decomposition and the resource island hypothesis: the influence of carcass mass on carbon, nitrogen, phosphorus — $322,818

- **Jackwon Lee** — NSF — Mechanistic insights into homeostatic copper transport — $599,916

- **Blair Siegfried** — USDA-ARS — Contributions to a framework for managing insect resistance to transgenic crops — $25,000

- **Steven Harris** — NSF — Constructing a Genetic Interaction Network for Polarity Determinants in Filamentous Fungi — $305,289

- **Steve Thomas** — NSF — Coupling consumer-resource interactions and nutrient spiraling in a stream network — $111,666

- **Thomas Hunt** — USDA-ARS — Contributions to a framework for managing insect resistance to transgenic crops — $15,000

- **Amit Mitra** — NASULGC/USDA-FAS — Capacity development in plant biotechnology research: Broad-spectrum disease resistance in transgenic crops — $89,090

- **Blair Siegfried** — USDA-ARS — A bacterial artificial chromosome library for the western corn rootworm — $6,000

- **David Steffen, Dee Griffin, Arden Wohlers and Clayton Kelling** — USDA-CSREES — NAHLN-Nebraska — $50,000
Grants and Contracts Received for July and August 2006

**Agronomy and Horticulture:**

**Walter Schacht** — Nebraska Department of Roads — $71,281.00

**Mary Shipman** — Nebraska Wheat Board — $47,000.00

**Stephen Baenziger** — Nebraska Wheat Board — $70,000.00

**Lenis Nelson** — Nebraska Wheat Board — $12,000.00

**Timothy J. Arkebauer** — U.S. Department of Energy — $99,741.00

**John Lindquist, Gary Yuen and Rhae Drijber** — NRI — $366,186.00

**George Graef, Thomas Clemente, James Steadman and Tamra Jackson** — USDA-ARS — $78,000.00

**Robert Shearman** — U.S. Golf Association — $90,000.00

**Miscellaneous Grants under $10,000 each** — $58,200.00

**Biochemistry:**

**Ruma Banerjee** — NIH — $290,545.00

**Vadim Gladyshev** — NIH — $284,700.00

**Ruma Banerjee** — NIH — $2,081,389.00

**Vadim Gladyshev** — NIH — $39,372.00

**Mark Wilson** — American Parkinson Disease Association — $50,000.00

**Vadim Gladyshev** — NIH — $246,193.00

**Robert Spreitzer** — NRI — $202,383.00

**Donald Becker** — NSF — $284,160.00

**Environmental Science and Technology Certification** — Using electrical resistivity imaging to evaluate permanganate performance during an in situ treatment of a RDX-contaminated aquifer — $98,777

**Xun-Hong Chen, Ashok Samal, Leen Kiat Soh, Alan Tomkkins and Sandra Zellmer** — NSF Digital Government Program — Building knowledge discovery and information fusion tools for collaborative systems to adaptively manage uncertain hydrological resources — $552,700

**Donald Becker** — NIH — Spectroelectrochemistry of the Novel PutA Flavoprotein — $92,406

**Entomology:**

**W. Wyatt Hoback** — Bureau of Land Reclamation — $9,228.00

**Miscellaneous Grants under $10,000 each** — $13,000.00

**Miscellaneous Grants under $10,000 each** — $13,000.00
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<td>Charles Hibberd — Nebraska Dry Bean Commission</td>
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<td>Loren Giesler — NCSRP</td>
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