**Comments from the Dean**

Dear Colleagues:

This is a time of change in the Agricultural Research Division. As you are aware, Dale Vanderholm retired from his position as Associate Dean and Associate Director on June 30, 2003. Dr. Nancy Betts, Professor of Nutritional Science and Dietetics, was hired as the ARD Interim Associate Dean and Associate Director on a 0.5 FTE basis for a one-year period starting July 1, 2003. Nancy brings to ARD a wealth of experience in nutrition education research and has an excellent knowledge of federal funding opportunities. She has served as a Panel Manager for a CSREES-NRI program and during the previous fiscal year was the Interim Associate Dean for Research and Graduate Studies in the College of Human Resources and Family Sciences. We are delighted to welcome Dr. Betts to the ARD Office and suggest that faculty make an attempt to meet her.

Vice Chancellor Owens has authorized a national search for a permanent Associate Dean and Associate Director. I intend to appoint a search committee and begin the recruitment process early this fall. We hope to have a new Associate Dean and Associate Director in place by July 1, 2004.

Although the last round of budget cuts did not permanently impact the ARD budget, there will be significant cash flow constraints during FY 2004. These cash flow challenges for IANR arise from the fact that funding is needed for periods up to one year to pay the salaries and fringe benefits for faculty and staff that are being terminated because the state funding for the position was eliminated on July 1. In addition, IANR agreed to pay the tuition subsidy for three classes of Nebraska students in the College of Veterinary Medicine at Kansas State University. The tuition subsidy for FY 2004 is nearly $1.5 million. Thus, ARD will have limited flexibility to address one-time or continuing resource needs at the unit level during the next year.

This issue of ARD News contains listings of faculty members who received grants during the past two months as well as graduate students who are receiving fellowships from University of Nebraska Foundation endowments. These fellowships consist of stipends that are in addition to the students’ normal GRA salaries. I offer my congratulations to the fellowship recipients and to faculty members successfully competing for grant awards.

As the new academic year begins, I extend best wishes to all ARD employees for continued success in research. We had remarkable success during FY 2003, and I expect even greater success in the current fiscal year. Thanks to each of you for your terrific efforts last year.

Darrell W. Nelson
Dean and Director

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**Nebraska Research Initiative FY2004**

- **Researcher:** Tom Clemente  
- **Department:** Biotechnology Center/Plant Science Initiative  
- **Project:** Production of Value Enhanced Soybean Oil Through Biotechnology  
- **Amount:** $201,101

- **Researcher:** Milford Hanna  
- **Department:** Industrial Agricultural Products Center  
- **Project:** Encapsulation of Chemicals and Biochemicals  
- **Amount:** $150,000
**Layman Awards**

IANR faculty submitted 24 proposals for funding by the Layman Trust. A subcommittee of the ARD Advisory Council carefully evaluated each proposal and ranked the submissions in relation to quality of science and the potential impact of the proposed research. All proposals were forwarded to the Vice Chancellor for Research.

The primary aim of the Layman Awards is to provide seed money to enhance the possibility of obtaining external support for the research project. Priority is given to non-tenured, tenure-track faculty and to other eligible faculty who propose projects of high promise and who make a compelling case that Layman funding is critical to their success.

Seven of the 24 proposals submitted by ARD faculty were funded:

**Ismail Dweikat**, Agronomy and Horticulture Department

"Use of Johnsongrass (Sorghum halepense) as a Source of Cold Tolerance in Sorghum (Sorghum bicolor L)"
Total Amount Received: $10,000
Funding Period: May 1, 2003 - April 30, 2004

**Melanie Simpson**, Biochemistry Department

"Role of Hyaluronan in Prostate Cancer"
Total Amount Received: $10,000
Funding Period: May 1, 2003 - April 30, 2004

**Joseph Barycki**, Biochemistry Department

"Investigation of Enzymes Involved in Glutathione Metabolism"
Total Amount Received: $10,000
Funding Period: May 1, 2003 - April 30, 2004

**Julie Stone**, Biochemistry Department

"Testing the Hypothesis that Overexpression of Yeast or A. thaliana ABC Transporters Confer Resistance to the Fungal Toxin Fumonisins B1"
Total Amount Received: $10,000
Funding Period: May 1, 2003 - April 30, 2004

**Harshavardhan Thippreddi**, Food Science and Technology

"Microbiological Validation of Organic Acids and Acidified Sodium Chlorite for Reduction of Escherichia coli O157:H7 on Chilled Beef Carcasses and Sub-Primals"
Total Amount Received: $10,000
Funding Period: May 1, 2003 - April 30, 2004

**Shaorong Chen**, Plant Pathology Department

"High Throughput Yeast Function-based Screens to Identify Plant Genes That Regulate Programmed Cell Death"
Total Amount Received: $10,000
Funding Period: May 1, 2003 - April 30, 2004

**You Zhou**, Veterinary and Biomedical Sciences

"Analysis of Central Neuronal Gene Expression and Functional Integrity from Genetically Selected Mouse Lines with Different Stress Responsiveness"
Total Amount Received: $10,000
Funding Period: May 1, 2003 - April 30, 2004

**Widaman Trust Distinguished Graduate Assistant Award**

The Widaman Trust was established in 1975 through a generous gift provided to the University of Nebraska Foundation by Ms. Blanch Widaman. Ms. Widaman asked that the income from the trust be used by UNL for basic research in agriculture and the funds support people rather than purchase supplies and/or equipment. She suggested that the money be used for scholarships or fellowships for graduate students conducting basic research in agriculture.

The criteria established for the Widaman Trust Distinguished Graduate Assistant Award specifies that only 5% of the graduate students in a department can receive the recognition and that the awardees must demonstrate outstanding scholarship and excellence in research. We congratulate the following graduate students for receiving the Widaman Trust Distinguished Graduate Student Award for 2003-2004:

**Atlene Adviento**, Plant Nutrition
**Advisor**: Achim Dobermann

**Ricardo Abdelnoor**, Genomics
**Advisor**: Sally Mackenzie

**Leslie Stalker**, Ruminant Nutrition
**Advisor**: Terry Klopfenstein and Don Adams

**Sandra Senneke**, Breeding and Genetics
**Advisor**: L. Dale Van Vleck

**Joao Camargo**, Agricultural Engineering
**Advisor**: George E. Meyer
The recipient of the Hardin Distinguished Graduate Fellowship for 2003-2004 is Walter Philip Suza from the Agronomy and Horticulture Department. The fellowship is made possible by an endowment established at the University of Nebraska Foundation by former University of Nebraska Chancellor Clifford Hardin to support outstanding graduate students doing research in plant physiology. He will receive a $2,000 supplement to his graduate assistantship and the Agronomy and Horticulture Department will receive $1,000 of operational support for his research program.

Suza is completing his Ph.D. in the Agronomy and Horticulture Department. His dissertation research concerns jasmonic acid signaling and the role of this hormone in regulating several plant responses to stress. He is working to further our understanding of how the plant “stress hormone” jasmonic acid helps plants to protect themselves against several biotic and abiotic stresses. Jasmonic acid is an important plant hormone involved in conferring resistance to plants against disease. Jasmonic acid is also essential for plant resistance against insect herbivory and damage by UV light. Suza received the “Best Student Award” from the faculty of Agriculture and Natural Resources from the University of Africa (Mutare, Zimbabwe) in 1996. Paul Staswick is his advisor.

Shear-Miles Fellowship 2003-2004

The Shear-Miles Agricultural Scholarship and Fellowship was established at the NU Foundation with a $173,000 gift from the estate of Dorothy S. Miles. James Dennis, executor of the Miles Estate, said Dorothy Miles planned that the gift memorialize her father and father-in-law, Corneilus Lott Shear and George Miles. Shear and Miles both graduated from the NU College of Agriculture. Shear received his bachelor’s and master’s degrees in 1887 and 1901 and Miles graduated in 1903. This endowed fund provides scholarships and fellowships to benefit the Agricultural Research Division and the College of Agricultural Sciences and Natural Resources.

Three students listed below will be recipients of this $2,000 award given for the second time by ARD:

Name: Kelly W. Creighton
Thesis area: Ruminant Nutrition
Department: Animal Science
Advisor: Don Adams and Terry Klopfenstein

Name: Analiza Piovesan Alves
Thesis area: Toxin Resistance
Department: Entomology
Advisor: Blair Siegfried

Name: Kathleen D. Eggemeyer
Thesis area: Ecology
Department: School of Natural Resources
Advisor: Tala Awada

John and Louise Skala Fellowship 2003-04

The John and Louise Skala Fellowship was established at the NU Foundation. Fifty percent (50%) of the net income of this fund shall be used annually or otherwise for one or more fellowships awarded to full-time graduate students in the university’s Institute of Agriculture and Natural Resources. The recipient of this fellowship shall be engaged in research in areas relating to the new industrial uses of agricultural products.

Four students are the recipients of this $5,000 award through the Agricultural Research Division and the College of Agricultural Sciences and Natural Resources:

Name: Oscar Esquivel
Thesis area: Meat Sciences
Department: Animal Science
Advisor: Roger Mandigo
Al Moseman International Studies Fund 2003-2004

The "Al Moseman International Studies Fund" was established through a trust in the NU Foundation. This fund supports students with the potential to contribute to international development. The U.S. role in technical assistance in future international agricultural development programs requires leadership in identifying and creating initiatives to achieve cooperation among multidisciplinary team members and to surmount traditional precedents in host country scientific and administrative procedures. This award is designated for graduate students in the Agronomy Graduate Program, with interests in international agriculture and world food development. Preference will be given to students who are working in plant breeding and genetics.

The recipient of the $2,500 award through the Agricultural Research Division and the College of Agricultural Sciences and Natural Resources is:

- Name: Fufa Hundea Birru
- Thesis area: Cereal Genetics and Breeding
- Department: Agronomy and Horticulture
- Advisor: Lenis Nelson and Steve Baenziger

David H. and Annie E. Larrick Fund 2003-2004

The David H. and Annie E. Larrick fund supports graduate students who are conducting research in fields other than animal science, agricultural education and leadership, and veterinary and biomedical sciences. The Larrick endowment will assist the following students with $500 for travel grants to present research findings at national or regional meetings.

- Name: Renée Ritchie
- Department: Agronomy and Horticulture
- Meeting: Crop Science Society of America
- Place: Denver, Colorado

- Name: Ryan Duysen
- Department: Biological Systems Engineering
- Meeting: American Society of Agricultural Engineers
- Place: Las Vegas, Nevada

- Name: Girish Ganjyal
- Department: Biological Systems Engineering
- Meeting: American Association of Cereal Chemists
- Place: Portland, Oregon

- Name: Alejandro Amezquita
- Department: Biological Systems Engineering
- Meeting: IV Ibero American Congress of Food Engineering
- Place: Valparaíso, Chili

- Name: Junjie Guan
- Department: Biological Systems Engineering
- Meeting: American Association of Cereal Chemists
- Place: Portland, Oregon

William G. Whitmore Student Travel Endowment

The William G. Whitmore memorial fund was established at the University of Nebraska Foundation in 1980 as a memorial to William G. Whitmore, a member of the Board of Regents at the University of Nebraska from 1902-1916. The income from the fund supports a travel grant program for graduate students within IANR whose advisor or co-advisor has an ARD research appointment. In accordance with the donor instructions, this program will support attendance to professional society meetings in the fields of animal science, agricultural education and leadership, and veterinary and biomedical sciences. Priority for grants will be given to graduate students who are personally presenting the results of their research and/or scholarly investigations.

The Whitmore Research Travel Committee makes grants for expenses, including transportation (which is not to exceed coach class airfare), registration, lodging meals, etc. Grants under this program are limited to a maximum of $500 per individual per fiscal year. Fifteen students applied for the travel award. Two IANR students received the William G. Whitmore Memorial for travel during the period July 6 - December 31, 2003.
Undergraduate Honors Research Program

Funds for the FY 2003-2004 Undergraduate Honors Student Research Program have been allocated to units for support of undergraduate student research projects. This program is open to junior and senior University Honors Program students proposing to work with a faculty research mentor who has an ARD appointment. Ten proposals were received and seven were funded. The following students have received funding:

Rick Smith (Agribusiness/Agricultural Economics Department) $2,300
Mentors: Wesley Peterson and Richard Clark
“An Evaluation of Labor Costs of Nebraska Feedlots”

Trent Blare (Agricultural Economics Department) $2,200
Mentor: Wesley Peterson
“WTO Trade Negotiations: Implications of an Agreement Upon U.S. Grain and Oilseed Producers”

Andrew Vaughan (Biochemistry Department) $2,500
Mentor: Donald Weeks
“Determination of the Essential or Nonessential Nature of CO, Responsive Genes to the Carbon Concentrating Mechanism of *Chlamydomonas reinhardtii* Using RNAi Technology”

Kristin Ahrens (Food Science and Technology Department) $2,500
Mentors: Susan Cuppett and Robert Hutkins
“Selective Advantage of Fructooligosaccharide-fermenting *Lactobacillus acidophilus* in a Model System”

Adam Rogers (Veterinary and Biomedical Sciences) $2,500
Mentors: Grasso Ebako and Clinton Jones
“The Regulation of Immune-mediated Cell Death by the LR (Latency Related) Gene”

Karen Lee (Veterinary and Biomedical Sciences) $2,500
Mentor: Jeffrey Cirillo
“Role of enhC gene in Entry into *Legionella pneumophila*”

Michelle Pavelka (Veterinary and Biomedical Sciences) $2,000
Mentor: Bruce Brodersen
“Equine Herpes Virus-1: A Possible Cause of Equine Ataxia Syndrome”

Proposals Submitted for Federal Grants

The following is a listing of proposals that were submitted the past few months 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.

James L. Van Etten — NIH — DNA Replication and Gene Expression of Chlorella Viruses — $1,120,000

Qi “Steve” Hu — NOAA — Climate and Atmospheric Research — $40,000

Joseph J. Barycki — NIH — Characterization of *H. pylori* — Glutamyl Transpeptidase — $1,226,877

Gerald E. Duhamel — NIH-NIAID — Polymicrobial Associations in Inflammatory Bowel Disease — $138,700

Daniel Pomp — NIH — Genetic Architecture, Biological Variation, and Complex Phenotypes — $3,042,011

Andrea S. Cupp and John S. Weber — NIH/NCCR — Novel spermatogonial stem cell mutagenesis system — $385,919

David Billesbach and Timothy Arkebauer — USDOE — Carbon, Water, and Energy Exchange in a Mid-Latitude, Mixed Prairie Grassland Ecosystem — $600,207

Robert M. Caldwell and David R. Swanson — USDOE/NIGEC — The value of detail in ecosystem models for predicting county-level wheat yields throughout the Great Plains — $363,361

Scott J. Josiah — USDA/SARE — Improving Small Farm Profitability with High-Value Products: Accelerating Commercialization and Producer Adoption of Woody Florals and Hybrid Hazelnuts — $149,846

Stephen D. Danielson — USDA/SARE — Conservation Biological Control for Insect Pest Management in Alfalfa — $149,442

Loren J. Giesler — USDA through University of Illinois — Evaluation of Fungicide Application Methods for Control of Soybean Rust in *Glycine max* — $12,500

Viacheslav I. Adamchuk — USDA/SARE — Alternative Grain Harvesting Technology for Sustainable Agriculture — $149,960

Daniel Pomp — NIH — Genetic Architecture of Obesity Predisposition — $3,042,011

Jeffrey D. Cirillo and Ronald L. Cerny — NIH/NIAID — Acanthamoeba-Pathogen Interactions Mutant Analysis — $1,631,250
Grants and Contracts Received
June and July, 2003

Agronomy and Horticulture

Baenziger, P. S. — U.S. Civilian Research Development Foundation — $10,300
Beecher, Brian — USDA through Montana State University — $20,000
Clements, Tom — United Soybean Board — $95,000
Specht, James — USDA/ARS — $68,185
Specht, James — North Central Soybean Research Program — $218,778
Specht, James — United Soybean Board via USDA/ARS — $47,748
Stubbendieck, James — National Park Service — $15,760
Miscellaneous grants under $10,000 each — $115,950

Animal Science

Calkins, Chris — National Cattlemen’s Beef Association — $34,090
Cuoppo, Andrea — NIH — $71,217
Miner, Jess — Pharmagra, Inc. — $29,000
Pomp, Daniel — NIH — $281,549
Weber, John — Baylor College of Medicine — $88,595
Miscellaneous grants under $10,000 each — $35,450

Biological Systems Engineering

Billesbach, David — DOE through Lawrence Berkeley Lab — $66,071
Schulte, Dennis, Lakshmi Koppolu, David Billesbach and Rick Koelsch — Nebraska Department of Agriculture — $19,632

Biometry

Eskridge, Kent — Nebraska Department of Health and Human Services — $11,000
Eskridge, Kent — ACTON Int’l — $25,951

Entomology

Meinke, Lance — USDA/ARS — $62,407
Siegfried, Blair — Pioneer Hi-Bred — $25,000
Miscellaneous grants under $10,000 each — $41,450

Food Science and Technology

Benson, Andrew — Beacon Venture Management — $546,177
Hefle, Susan — USDA through University of Arkansas Medical Sciences — $17,364
Miscellaneous grants under $10,000 each — $16,208

Industrial Agricultural Products Center

Hanna, Milford — Certain Teed, Inc. — $70,000
Hanna, Milford — USDA/CSREES — $59,438

Northeast Research and Extension Center

Miscellaneous grants under $10,000 each — $26,100

Nutritional Science and Dietetics

Albrecht, Julie — USDA/FSA/MSD — $15,000

Panhandle Research and Extension Center

Lyon, Drew — Anna Elliott via UN Foundation — $15,000
Miscellaneous grants under $10,000 each — $132,860
New or Revised Projects

The following station projects were approved recently by the USDA Current Research Information System (CRIS):

NEB-12-002 (Agronomy and Horticulture) Genetics, Breeding and Evaluation of Winter Small Grains Crops for Nebraska
Investigator(s): P. Stephen Baenziger and Brian Beecher
Status: Revised Hatch project effective April 1, 2003

NEB-12-296 (Agronomy and Horticulture) Cultural Practices to Minimize Environmental Stress on Horticultural Crop Production
Investigator: Laurie Hodges
Status: New Hatch project effective April 1, 2003

NEB-12-297 (Agronomy and Horticulture) Improving the End-Use Performance Characteristics of Wheat and Other Cereal Grains
Investigator: Brian Beecher
Status: New Hatch project effective May 1, 2003

NEB-12-298 (Agronomy and Horticulture) Development of a Transposon Tagging System for Soybean (Glycine max Merr)
Investigator: Tom Clemente
Status: New Hatch project effective May 1, 2003

Investigator: Terry J. Klopfenstein
Status: New Hatch project effective May 1, 2003

NEB-13-165 (Animal Science) Role of Hyaluronan During the Ovulatory Process in the Beef Cow
Investigator(s): Andrea Cupp and Melanie Simpson
Status: New State project effective July 1, 2003

NEB-15-100 (Biochemistry) Regulation of Photosynthetic Processes
Investigator(s): Raymond Chollet, John Markwell and Robert Spreitzer
Status: New Hatch project effective October 1, 2002, that contributes to Regional Research Project NC-1142

NEB-16-098 (Food Science and Technology) Near Infrared Spectroscopic Applications for Food Quality Measurement and Process Control
Investigator: Randy L. Wehling
Status: New Hatch project effective April 1, 2003

NEB-17-082 (Entomology) Management of Subterranean Termites in Urban/Rural Environments
Investigator: Shripat Kamble
Status: New Hatch project effective May 1, 2003

NEB-17-083 (Entomology) Synchronizing Habitat Enhancement Practices with Predator Mobility for Control of Alfalfa Insect Pests
Investigator(s): Stephen Danielson, James R. Brandle, Thomas Hunt and Erin Blankenship
Status: New State project effective July 1, 2003

NEB-21-085 (Plant Pathology) The Fungal Response to Genotoxic Stress
Investigator: Steven Harris
Status: New Hatch project effective May 1, 2003

NEB-44-055 (Panhandle Research and Extension Center) Intensification of Winter Wheat-Based Dryland Cropping Systems for Western Nebraska
Investigator: Drew Lyon
Status: Revised Hatch project effective May 1, 2003

NEB-44-063 (Panhandle Research and Extension Center) Irrigation Management with Limited Water Supplies
Investigator: C. Dean Yonts
Status: New Hatch project effective June 1, 2003
Federal Research Budget for FY 2003

The FY 2003 federal appropriations for research were primarily level except for significant increases in NIH and NSF accounts. The President's FY 2004 budget recommendations for federal research agencies are decreased from FY 2003 appropriations for USDA, USGS and DOD (basic research). We anticipate that it will be difficult to obtain funding increases in the USDA account for FY 2004, although significant efforts to improve funding are under way. Listed below are the FY 2003 appropriations, the President’s budget recommendations for FY 2004 and the percent change between FY 2003 levels and the recommended levels.

<table>
<thead>
<tr>
<th>Agency</th>
<th>FY 2003 Level</th>
<th>FY 2004 Request</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Institutes of Health</td>
<td>23,632</td>
<td>27,893</td>
<td>15.7</td>
</tr>
<tr>
<td>National Science Foundation</td>
<td>5,310</td>
<td>5,480</td>
<td>3.0</td>
</tr>
<tr>
<td>Department of Defense (basic res)</td>
<td>1,495</td>
<td>1,309</td>
<td>-12.4</td>
</tr>
<tr>
<td>Department of Energy (science)</td>
<td>3,284</td>
<td>3,310</td>
<td>0</td>
</tr>
<tr>
<td>NOAA</td>
<td>3,150</td>
<td>3,300</td>
<td>4.7</td>
</tr>
<tr>
<td>Environmental Protection Agency</td>
<td>823</td>
<td>836</td>
<td>1.0</td>
</tr>
<tr>
<td>U.S. Geological Survey</td>
<td>925</td>
<td>896</td>
<td>-3.2</td>
</tr>
<tr>
<td>NASA</td>
<td>6,023</td>
<td>6,639</td>
<td>10.2</td>
</tr>
<tr>
<td>U.S. Department of Agriculture</td>
<td>567</td>
<td>484</td>
<td>-14.7</td>
</tr>
</tbody>
</table>

Adoption of Biotechnology-Enhanced Crops in the Cornbelt*

<table>
<thead>
<tr>
<th>Crop</th>
<th>State</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>Illinois</td>
<td>22</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Indiana</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Iowa</td>
<td>41</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Minnesota</td>
<td>44</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Missouri</td>
<td>34</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Nebraska</td>
<td>46</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>South Dakota</td>
<td>66</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>Wisconsin</td>
<td>26</td>
<td>32</td>
</tr>
<tr>
<td>Soybeans</td>
<td>Illinois</td>
<td>71</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Indiana</td>
<td>83</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>Iowa</td>
<td>75</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td>Minnesota</td>
<td>71</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>Missouri</td>
<td>72</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Nebraska</td>
<td>85</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>South Dakota</td>
<td>89</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Wisconsin</td>
<td>78</td>
<td>79</td>
</tr>
</tbody>
</table>

Data obtained from “Nebraska Biotechnology Varieties and Chemical Usage,” May 2003 release from the Nebraska Agricultural Statistics Service, USDA.

Certified Organic Acreage of Selected Crops by State – 2001*

The USDA-compiled acreage of certified organic crops grown in the United States during 2001 is below. Fifty-three organic certification organizations - 14 state and 39 private - conducted third-party certification of organic production during 2001. U.S. farmers and ranchers have added another million acres of certified organic cropland and pasture since 1997, bringing the 48-state total to 2.34 million acres in 2001. Overall, certified organic cropland and pasture accounted for 0.3 percent of U.S. cropland and pasture in 2001, although the share is much higher in some crops such as vegetables at over 2 percent.

<table>
<thead>
<tr>
<th>State</th>
<th>No. of Certified Operations</th>
<th>Field Crops and Hay</th>
<th>Fruits, Veg. &amp; Herbs</th>
<th>Other Crops Unclassified</th>
<th>Pasture</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>1011</td>
<td>32,632</td>
<td>70,158</td>
<td>44,053</td>
<td>14,682</td>
</tr>
<tr>
<td>Colorado</td>
<td>228</td>
<td>40,713</td>
<td>5,816</td>
<td>11,632</td>
<td>511,820</td>
</tr>
<tr>
<td>Iowa</td>
<td>384</td>
<td>69,908</td>
<td>0</td>
<td>1,607</td>
<td>8,839</td>
</tr>
<tr>
<td>Minnesota</td>
<td>421</td>
<td>87,802</td>
<td>0</td>
<td>10,330</td>
<td>5,165</td>
</tr>
<tr>
<td>Montana</td>
<td>83</td>
<td>58,527</td>
<td>0</td>
<td>14,632</td>
<td>137,957</td>
</tr>
<tr>
<td>Nebraska</td>
<td>108</td>
<td>39,012</td>
<td>940</td>
<td>4,230</td>
<td>2,820</td>
</tr>
<tr>
<td>North Dakota</td>
<td>176</td>
<td>129,033</td>
<td>0</td>
<td>14,337</td>
<td>14,337</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>469</td>
<td>73,295</td>
<td>916</td>
<td>5,497</td>
<td>12,827</td>
</tr>
</tbody>
</table>


Diane says

To keep in the middle of the road, one must be able to see both sides.