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ARD News February 1994

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COMMENTS FROM THE DEAN

Dear Colleagues:

In mid-January the Deans began meeting with unit administrators to review faculty performance evaluations. This column will deal with the criteria used by ARD to evaluate faculty with research appointments. Individual performance evaluations have no relationship to the ARD Objectives published in the October 1993 issue of ARD News. The ARD Objectives reflect our hopes for units and for the average of all units. Many of the units have achieved one or more of the ARD quantitative objectives.

Almost every faculty member in IANR has a unique assignment, and, thus, evaluations are done in relation to the position description of each individual. All administrators attempt to take a holistic view of the contribution that each faculty member is making to their unit. In evaluating the research component of a faculty member’s appointment, the following are considered:

- Research project management:
  Organization, management, and leadership provided to a research project are important criteria. Attempts are made to evaluate the creativity, relevance, and innovation present in the project.

- Transfer of information to clientele:
  Any “practical” information resulting from research projects should be disseminated through the project leader's extension program or provided to appropriate extension specialists for use in educational programs. We need to get the latest technology out to users as soon as possible.

- Scientific publications:
  Research data stored in file cabinets or used only in extension programs have limited long-term value. ARD expects that research data will be published in a form that is in the permanent collection of libraries and, thus, available for future reference. Publications can take the form of research bulletins, journal articles, books, book chapters, or proceedings of symposia or workshops. Publishing data in peer-reviewed journals adds a "quality" factor to the publication. Authorship “credit” is given for any significant contribution to a publication. There is no special "credit" for first author or sole author publications.

- Participation in professional society meetings and activities:
  Presentation of scientific information at regional or national meetings of professional societies is encouraged. Invitations to present plenary or similar addresses are evidence of professional growth and developing stature. Service as an officer of a professional society and editing journals, books, or proceedings are significant contributions.

- Grantsmanship:
  Faculty members are not evaluated on their ability to obtain grant support. ARD expects that faculty members will be proactive in attempting to find grants to support their research project, but a lack of success will not be a negative factor during evaluation. In some disciplines, success in grantsmanship translates directly into research activity and output, whereas other disciplines require limited resources to have significant output and accomplishment.

- Human resource development:
  Providing guidance to graduate students, post-doctoral research associates, or visiting scientists is a plus for a faculty member. We realize that not every faculty member has the opportunity to work with graduate students or post-doctoral fellows, thus, involvement with human resource development is not a requirement.

- Team effort:
  Participation in team activities is not a requirement for faculty members, however, effective leadership or contributions to teams is a plus. Specific notice is made in the “Academic Performance Evaluation of Faculty” of involvement in team activities.

- Other accomplishments:
  ARD scientists are engaged in a variety of activities. There is a wide range of outputs from our research projects, i.e., cultivars and germplasm, inventions, computer programs, diagnostic techniques. Administrators recognize these contributions in the evaluation process.

- Service:
  All faculty are expected to devote a portion of their time to institutional, professional, and public service. In many
cases, these activities consist of serving on committees, reviewing manuscripts for journals, or making presentations to community or clientele groups. There is an expectation in the evaluation process for service activities.

Please contact Darrell Nelson or Dale Vanderholm if you have any questions about the evaluation of faculty members with research appointments. We believe that it is critical that all faculty understand this process and the criteria used in evaluation.

Darrell W. Nelson
Dean and Director

HOW ARE THINGS GOING?

Are your needs in research being met by the Agricultural Research Division? Do you have concerns you would like considered by a panel of your peers? The ARD Advisory Council is one body through which your questions, concerns, and ideas can be channeled. The Council provides feedback to the Deans on current topics and discusses faculty’s concerns with them. We want to hear from you; what are your concerns, your ideas?

Last year, the Council coordinated a workshop on Program Management for Scientists. The program was well-received, providing tangible suggestions to aid in improving management skills. An evaluation survey conducted at the end of the workshop indicated an interest in further considering the issue of stress management in the workplace. In response to this feedback the Council, working with Dan Wheeler, organized a three-part series on stress management. The first workshop centered on characterizing the stresses in the workplace through a faculty panel discussion. The second workshop was led by Wes Sime, a stress physiologist. The third will occur in May when Dan Wheeler will summarize survey results on sources of stress and resources faculty currently use to address this persistent problem.

The Council has subcommittees that review proposals and applications for the following recurring programs.

Junior Faculty for Excellence in Research Awards
Widaman Trust Distinguished Graduate Assistant Awards
UNL Foundation Grants
Interdisciplinary Research Grant
International Travel Grant
Innovative and High Risk Research Grant

Faculty can keep up with the Council’s activities by reviewing the minutes of our meetings. They are sent to the Unit Administrators for distribution. The 1994 Council members are: Dave Mortensen (chairman), Ken Hubbard (secretary), Julie Albrecht, David Baltensperger, Chris Calkins, Ray Chollet, Susan Cuppett, Ruben Donis, and Dean Eisenhauser. Please contact us if you have something that you want us to discuss with the Deans.

GRANT AND CONTRACT INCOME OBTAINED BY UNITS DURING THE LAST THREE CALENDAR YEARS

Listed below is the grant and contract income obtained by faculty members in units during the last three calendar years, and the average of the last three years. Grants obtained by interdisciplinary centers are not listed. The listing is not a completely accurate representation of resources available to units, since some of the faculty obtain significant research funding from interdisciplinary centers. Units not listed are either service-oriented or represent disciplines with very limited opportunities for grant funding.

We are pleased that the average grant and contract income per FTE obtained by ARD units in 1993 increased by 26.7 percent over 1992 income and 44.4 percent over 1991 income. Many units have experienced increases in grant and contract income over the past two years. Keep up the good work.

QUESTIONS TO CONSIDER WHEN PREPARING GRANT PROPOSALS

• Does the grantor accept solicited or unsolicited proposals?
• What is the best way to make contact with the grantor—letter/preproposal or full proposal?
• Does the project fit the grantor’s interests?
• What competition is expected and what has it been in the past?
• Who has received grants for what projects from this grantor?
• Are there budget restrictions, e.g., no money for equipment?
• Are there budget requirements, e.g., cost sharing?
• Has the grantor set a deadline for the proposal?
• How much time will be involved in idea reviews?
• Where is the relevant literature for review?
• Will you have a central thesis or a vague plan?
• Should this be an interdisciplinary proposal?
• How long will it take to write the proposal?
• Will the co-investigators work collaboratively?
• What university approvals and endorsements are necessary?
• Will you have adequate time to conduct the proposed studies?
• How many people and how much of their time will be required?
• Is there sufficient expertise to compete in this area?
• Will funds be requested or cost shared for staff time?
• Are project participants available and willing to cooperate?
• What materials, supplies and equipment are needed?
• Are adequate space and facilities available?
• Will space need to be remodeled?
• Are necessary service, e.g., computer and custodial, available?
• What is the total time frame and does it fit your other needs?

From *Guidelines for Proposal Preparation and Application Procedures*, College of Veterinary Medicine, University of Illinois, 1989.

**AVERAGE APPROPRIATED FUND SUPPORT PER FTE IN NORTH CENTRAL REGION SAESs**

There is tremendous variation in the amount of appropriated funds provided per scientist FTE in North Central Region State Agricultural Experiment Stations. IANR scientists should feel fortunate to be well supported by appropriated funding (12th highest in the U.S.). Listed below is the amount of appropriated funds provided by taxpayers per research FTE for selected states in the North Central Region during FY 1994. Please keep in mind that these funds provide faculty and support staff salaries and fringe benefits, GRA stipends, student wages, and operating funds.

<table>
<thead>
<tr>
<th>State</th>
<th>Research FTE</th>
<th>Approp. $ per FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>158</td>
<td>179,323</td>
</tr>
<tr>
<td>Iowa</td>
<td>122</td>
<td>168,658</td>
</tr>
<tr>
<td>Minnesota</td>
<td>167</td>
<td>164,025</td>
</tr>
<tr>
<td>Nebraska</td>
<td>132</td>
<td>160,028</td>
</tr>
<tr>
<td>Missouri</td>
<td>88</td>
<td>130,174</td>
</tr>
<tr>
<td>Kansas</td>
<td>169</td>
<td>128,138</td>
</tr>
<tr>
<td>North Dakota</td>
<td>101</td>
<td>125,053</td>
</tr>
<tr>
<td>Indiana</td>
<td>130</td>
<td>115,282</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>163</td>
<td>114,104</td>
</tr>
<tr>
<td>Illinois</td>
<td>116</td>
<td>104,045</td>
</tr>
</tbody>
</table>

**TRENDS IN SCIENTIST AND SUPPORT STAFF FTE IN NORTH CENTRAL REGION SAESs**

During the past five years, there has been a general downward trend in numbers of research faculty and support staff assigned to state agricultural experiment stations throughout the U.S. The decline in number of research personnel reflects the unfavorable budget climate that has

affected many public universities. Given below are data on the numbers of research and support staff FTEs in selected North Central Region SAESs for FY 1990 and FY 1994.

<table>
<thead>
<tr>
<th>State</th>
<th>FY 90</th>
<th>FY 94</th>
<th>% Change</th>
<th>FY 90</th>
<th>FY 94</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>134</td>
<td>116</td>
<td>-13.5</td>
<td>166</td>
<td>168</td>
<td>1.2</td>
</tr>
<tr>
<td>Indiana</td>
<td>162</td>
<td>130</td>
<td>-19.8</td>
<td>303</td>
<td>292</td>
<td>-3.7</td>
</tr>
<tr>
<td>Iowa</td>
<td>136</td>
<td>146</td>
<td>7.4</td>
<td>222</td>
<td>229</td>
<td>3.2</td>
</tr>
<tr>
<td>Kansas</td>
<td>177</td>
<td>169</td>
<td>-4.5</td>
<td>143</td>
<td>155</td>
<td>8.4</td>
</tr>
<tr>
<td>Minnesota</td>
<td>176</td>
<td>163</td>
<td>-8.0</td>
<td>366</td>
<td>308</td>
<td>-15.8</td>
</tr>
<tr>
<td>Missouri</td>
<td>110</td>
<td>88</td>
<td>-20.0</td>
<td>222</td>
<td>198</td>
<td>-11.8</td>
</tr>
<tr>
<td>Nebraska</td>
<td>145</td>
<td>132</td>
<td>-9.0</td>
<td>359</td>
<td>370</td>
<td>3.1</td>
</tr>
<tr>
<td>North Dakota</td>
<td>101</td>
<td>101</td>
<td>0</td>
<td>331</td>
<td>326</td>
<td>-1.5</td>
</tr>
<tr>
<td>Ohio</td>
<td>143</td>
<td>122</td>
<td>-14.7</td>
<td>513</td>
<td>402</td>
<td>-21.6</td>
</tr>
</tbody>
</table>

**NEW OR REVISED PROJECTS**

The following station projects were approved recently by the USDA Cooperative State Research Service:

**NEB-11-097 (Biological Systems Engineering) Protein Film Production and Evaluation**

*Investigator*: C. L. Weller  
*Status*: New Hatch project effective Oct. 1, 1993

**NEB-11-098 (Biological Systems Engineering) Integrated Systems for Improved Water and Nitrogen Management in Irrigation Environments**

*Investigator(s)*: D. L. Martin, D. G. Watts and N. L. Klocke  
*Status*: New Hatch project that contributes to Regional Research Project NC-211 effective Oct. 1, 1993

**NEB-12-232 (Agronomy) Influence of Genetic Variation in North American Leafy Spurge on Aphthona nigriscutis**

*Investigator(s)*: S. N. Nissen, R. A. Masters, D. J. Lee and M. L. Rowe  
*Status*: New Competitive Grant effective July 1, 1993

**NEB-13-117 (Animal Science) Ovarian Follicular Development in Prepubertal Heifers: Role of LH, FSH and Estradiol**

*Investigator(s)*: J. E. Kinder and M. J. Garcia-Winder  
*Status*: New Competitive Grant effective Sept. 1, 1993

**NEB-14-075 (Veterinary and Biomedical Sciences) Regulated Expression of the GnRH Gene in Ruminants**

*Investigator*: D. L. Hamernik  
*Status*: New Competitive Grant effective Sept. 15, 1993

**NEB-14-076 (Veterinary and Biomedical Sciences) Molecular Analysis of the Bovine Immune System: Dissection of Mammary Gland T Cell Repertoire**

*Investigator*: S. S. A. Chen  
*Status*: New Animal Health project effective Nov. 1, 1993

**NEB-14-077 (Veterinary and Biomedical Sciences) Molecular Genetics Analysis of Mycobacterium Paratuberculosis and Related Mycobacterial Pathogens**

*Investigator*: R. G. Barletta  
*Status*: New Animal Health project effective Nov. 1, 1993

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**PROPOSALS SUBMITTED FOR FEDERAL GRANTS**

The following is a listing of proposals that were submitted after Dec. 1, 1993 by faculty for federal grant programs. While not all grants will be funded, we applaud the faculty member's effort in submitting proposals to the various agencies.

- Robert Wilson, Gary Hein and Eric Kerr — National Research Initiative Competitive Grants Program — Integrated Systems for Control of Canada Thistle — $127,040


- Gary Yuen and Garald Horst — National Research Initiative Competitive Grants Program — Turfgrass Canopy Effects on Disease Biological Control Agents — $128,455

- Viswas Ghorpade and Curtis Weller — National Research Initiative Competitive Grants Program — Nonedible Wheat Gluten Films for Use as Mulch and Bags — $199,320

- Milford Hanna — United States Department of Agriculture/Cooperative State Research Service — Industrial Agricultural Products Center — $103,861


- Robert Wilson, Gary Hein and Eric Kerr — National Research Initiative Competitive Grants Program — Role of Iron Uptake in Mycobacterium paratuberculosis Pathogenesis — $292,482

- Louis Perino, Dee Griffin and Julie Morrow-Tesch — National Research Initiative Competitive Grants Program — Comparison of Surgical and Non-surgical Castration Techniques for Cattle — $26,013

- Gerald Duhamel, David Benfield and Clayton Kelling — National Research Initiative Competitive Grants Program — Role of Group A bovine Rotavirus Protein in Induction of Heterotypic Immunity — $212,268

- Ruben Donis — National Research Initiative Competitive Grants Program — Cellular Molecules Mediating Bovine Viral Diarrhea Virus Infection — $158,979

- Subramaniam Srikomaran — National Research Initiative Competitive Grants Program — Mapping of BHV-1 CTL Epitopes Based on Bovine MHC Class I Allele-Specific Peptide Motifs — $242,834

- Fernando Osorio, Andy Cheung and Clinton Jones — National Research Initiative Competitive Grants Program — Prevention of Alphaherpesvirus Latency by Homologous Interference — $242,394

- Sweeney Alex Chen, Ruben Donis and Fernando Osorio — National Research Initiative Competitive Grants Program — T Cell-Mediated Inflammation of the Bovine Mammary Gland — $255,580

- Clinton Jones — National Research Initiative Competitive Grants Program — Analysis of the Bovine Herpes Virus 1 Latency Related Gene — $219,627

- Stephen Danielson and Blair Siegfried — National Research Initiative Competitive Grants Program — Glandular Trichome Exudate As An Insect Resistance Factor for Alfalfa — $168,727
Robert Spreitzer — National Research Initiative Competitive Grants Program — Genetic Modification of Chloroplast Rubisco — $263,358

Sam Cordes and Charles Lamphear — United States Department of Agriculture — A Changing Health Care System and the Rural Economy — $29,000

Albert Weiss and Kent Eskridge — National Research Initiative Competitive Grants Program — A Simulation Approach to Quantifying Maize Adaptation to Different Environments — $234,060

James Kinder and Michael Day — National Research Initiative Competitive Grants Program — Persistent Ovarian Follicles: Role of Progestins and LH in Cows — $244,038

Amit Mitra and Martin Dickman — National Research Initiative Competitive Grants Program — Genetic Engineering of Crop Plants to Sclerotinia Resistance — $186,299

H. Edward Grotjan, Debora Hamernik and Yunannen Xia — National Research Initiative Competitive Grants Program — Recombinant Bovine Gonadotropins — $271,950

Kyle Hoagland — U.S. Environmental Protection Agency — Chronic Effects of Atrazine Background Levels on Platte River Algae — $46,316

Kyle Hoagland and Stephen Ernst — NIGEC — Impacts of Global Climate Change on Phytoplankton Productivity in Lakes Along a Thermal Gradient — $69,100

James Brandle and William Easterling — NIGEC — Assessment of Climate Change on a Mixed Agricultural Landscape on the North American Great Plains — $136,000

Lloyd Bullerman — USDA/Food Safety and Health — Isolation, Identification and Production of Antifungal and Anti-aflatoxigenic Metabolites of Bacillus and Lactobacillus spp. — $47,950

Rose Marie Rosario — National Science Foundation — Mediation of Immune Responses in Invertebrates — $18,000

Raymond Chollet — National Science Foundation — Posttranslational Regulation of Pep-Carboxylase Activity in Higher Plants — $406,000

Stephen Ragsdale — U.S. Department of Energy — Mechanistic Enzymology of CO Dehydrogenase from Clostridium thermoaceticum — $97,000


Shashi Verma, Frank Ullman and Timothy Arkebauer — National Science Foundation — Field Micrometeorological Measurements, Process-Level Studies and Modeling of Methane and Carbon Dioxide Fluxes in a Boreal Wetland Ecosystems — $705,000

H. Edward Grotjan and Ronald Cerny — National Science Foundation — Ovine Luteinizing Hormone Structure-Function Relationships — $250,687

Donald Wilhite — USDA/SCS — Planning of Western Drought Conference — $10,000

James Brandle — USDA/FS — Efficacy of Alternative Single to Multi-Strata Riparian Buffer Designs for NPS Abatement in Agroecosystems Demonstration — $22,000

GRANTS AND CONTRACTS RECEIVED
DECEMBER 1993 AND JANUARY 1994

Agricultural Meteorology
Easterling, W. and Blad, B. — University of California $1,610,185
Easterling, W. — DOE - NIGEC 16,223
Wilhite, D. — USDA 10,000

Agriculture
Miscellaneous grants under $5,000 each 35,900

Animal Science
Klopfenstein, T. — USDA/ARS 12,000
Lewis, A. — A. L. Laboratories, Inc. 14,400
Miscellaneous grants under $5,000 each 7,755

Center for Rural Community Revitalization and Development
Cordes, S., Royer, J. and Allen, J. — USDA 157,537
Cordes, S. — USDA 25,000

Entomology
Miscellaneous grants under $5,000 each 30,500

Food Processing
Miscellaneous grants under $5,000 each 2,005

Food Science and Technology
Bullerman, L. — Ohio State University 15,000
Jackson, D. and Taylor, S. — Nebraska Grain Sorghum Board 8,470
Meagher, M. and Noureddin, H. — Iowa State University 18,318
Miscellaneous grants under $5,000 each 8,200

Forestry, Fisheries and Wildlife
Brandle, J. — USDA/Forest Service 22,000
Brandle, J. — Iowa State University 82,443

Horticulture
Miscellaneous grants under $5,000 each 7,850

Northeast Research and Extension Center
Miscellaneous grants under $5,000 each 22,266

Panhandle Research and Extension Center
Pavliota, A. — Nebraska Department of Agriculture 16,000
Miscellaneous grants under $5,000 each 25,360

Plant Pathology
Miscellaneous grants under $5,000 each 2,500

South Central Research and Extension Center
Miscellaneous grants under $5,000 each 18,770

Veterinary and Biomedical Sciences
Miscellaneous grants under $5,000 each 6,470

Water Center/Environmental Programs
Miscellaneous grants under $5,000 each 3,200

West Central Research and Extension Center
Miscellaneous grants under $5,000 each 8,750

GRAND TOTAL 2,187,102
COMPETITIVE RESEARCH BUDGETS FOR FY 1994

Most federal agencies that fund competitive research obtained budget increases for FY 1994. The big loser was the superconducting supercollider under construction in Texas. Many of the agencies that support research of IANR faculty members obtained significant budget increases. These increases should result in more projects being funded and greater funding for each grant. Listed below are the funding levels for programs of interest to our scientists.

<table>
<thead>
<tr>
<th>Agency and Program</th>
<th>FY 1994 Budget, millions of $</th>
<th>% Change from FY 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIH:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cancer</td>
<td>10,668</td>
<td>6.1</td>
</tr>
<tr>
<td>Allergy</td>
<td>2,142</td>
<td>5.3</td>
</tr>
<tr>
<td>NSF:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Directorates</td>
<td>3,037</td>
<td>10.7</td>
</tr>
<tr>
<td>Education</td>
<td>1,598</td>
<td>7.5</td>
</tr>
<tr>
<td>Academic Infrastructure</td>
<td>569</td>
<td>17.1</td>
</tr>
<tr>
<td>DOE:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological, Environment</td>
<td>4,099</td>
<td>24.4</td>
</tr>
<tr>
<td>Solar, Renewal Energy</td>
<td>245</td>
<td>38.4</td>
</tr>
<tr>
<td>NASA:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research and Development</td>
<td>9,284</td>
<td>4.9</td>
</tr>
<tr>
<td>Space Station</td>
<td>1,946</td>
<td>8.3</td>
</tr>
<tr>
<td>EPA:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research and Development</td>
<td>339</td>
<td>5.0</td>
</tr>
<tr>
<td>NOAA:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oceanic and Atmospheric</td>
<td>226</td>
<td>11.9</td>
</tr>
<tr>
<td>USDA:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Research Init.</td>
<td>112</td>
<td>15.5</td>
</tr>
</tbody>
</table>

CHARACTERISTICS OF NSF GRANTS

Science (262:1636-1638) has recently published information about grants awarded by the National Science Foundation. Although the amount varies by directorate, the average award is for $125,000 over a two-year period. On average, the funds are budgeted as follows: PI salary, 12 percent; post-doc or technician salary, 16 percent; GRA stipend, 12 percent; equipment purchase, 16 percent; indirect costs, 28 percent; and operating, 16 percent. NSF would like to make three-year awards to minimize the paperwork for investigators, but this would affect the number of grants provided per year.

The Biology Directorate makes about 1,300 awards each year with an average award size of $75,000 per year. The Earth Sciences (Geology) Directorate makes about 1,200 awards each year with an average award size of $60,000 per year.

NSF is spending about 72 percent of the budget on grants to single or groups of investigators, 20 percent on facilities, and 8 percent on NSF Centers. These proportions have held steady during the past eight years.

ETHNICITY OF DOCTORAL RECIPIENTS IN 1991

One of the IANR goals is to increase the cultural diversity of faculty, students and staff. Employment of underrepresented minorities as faculty members in “Colleges of Agriculture” has been a significant challenge. Very few minority students obtain Ph.D. degrees in agricultural sciences. Other colleges at UNL and other universities are also experiencing difficulty in hiring minority faculty members. Science (262:1091-1095) has recently published data on the ethnicity of students obtaining Ph.D. degrees in 1991. This data is provided below.

<table>
<thead>
<tr>
<th>Life Science</th>
<th>Physical Science</th>
<th>Social Science</th>
<th>Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>4657</td>
<td>3593</td>
<td>4563</td>
</tr>
<tr>
<td>Native American</td>
<td>19</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td>Asian</td>
<td>324</td>
<td>306</td>
<td>154</td>
</tr>
<tr>
<td>Black</td>
<td>116</td>
<td>53</td>
<td>231</td>
</tr>
<tr>
<td>Hispanic</td>
<td>126</td>
<td>99</td>
<td>197</td>
</tr>
<tr>
<td>International</td>
<td>1686</td>
<td>2211</td>
<td>961</td>
</tr>
</tbody>
</table>

These data clearly point out the need to aggressively recruit minority graduate students if we are to have an adequate pool of talented minority doctoral recipients to compete for faculty positions. It is likely that increasing minority graduate students will occur only if we interest primary and secondary students in science. Hopefully, we can convince these students to enroll in agricultural or biological sciences at the undergraduate level. A good base of undergraduate students across the U.S. would greatly enhance our ability to bring minority students into our graduate programs. We also must develop excellent relationships with 1890 Universities because these institutions have an excellent pool of talented undergraduates in agricultural sciences.

Diane Says

In the words of Jack Herbert, “We all admire the wisdom of people who come to us for advice.”