



Charles Valentine Riley
Memorial Foundation

Building on the Unifying Message Effort: Overview, Unity and Appropriations

Increasing Support for Food, Agricultural and Natural Resources Research, Education, Extension and Outreach

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About the Charles Valentine Riley Memorial Foundation. The Charles Valentine Riley Memorial Foundation (RMF) is committed to promoting a broader and more complete understanding of agriculture and to building on Charles Valentine Riley’s legacy as a “whole picture” person with a vision for enhancing agriculture through scientific knowledge. RMF, founded in 1985, recognizes that agriculture is the most basic human endeavor, and that a vibrant, robust, food, agricultural, forestry and environmental-resource system is essential for human progress and world peace. RMF’s goal is to have all world residents involved in creating a sustainable food and agriculture enterprise in a responsible rural landscape.

RMF’s Commitment to Increased Federal Investment in Research and Education. RMF supports growing each of the key components of the agricultural research and education funding portfolio that supports the national system delivering results for the public good: competitive grants, which take advantage of innovation at public and private universities, and other organizations with scientific and technical expertise; capacity funds, for state (universities) and federal agencies such as USDA’s Agricultural Research Service, Economic Research Service and Forest Service, to continue to provide a stable scientific workforce and research sites that conduct research requiring long-term commitment and potential high-risk/high-payoff solutions, while maintaining the capacity to rapidly address emerging and sometimes crisis situations; and public-private partnerships, such as the Foundation for Food and Agricultural Research, a nonprofit corporation that matches public funds with private funds to conduct research on problems of national and international significance. As part of its effort to obtain additional support for research and education, RMF promotes a broader and more complete understanding of agriculture by sponsoring the annual Riley Memorial Lecture through the American Association for the Advancement of Science. Other program activities support strengthening federal research, education, extension and outreach efforts — essential work that touches every American and contributes to the public good.

About this Report. RMF is sponsoring this report to place into perspective the broad impact that agriculture when broadly defined has on society as a whole and to review what has been to develop an unifying message, to report on the progress in developing unity among the many interests, and provide some perspective on what might come next.

Acknowledgements

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Overview

The Beginning and the Whole Picture View

Charles Valentine Riley’s Whole Picture View, 1985. The Charles Valentine Riley Memorial Foundation was formed in 1985 to honor the memory of its namesake, but more importantly to promote Riley’s views about the importance of agriculture and scientific knowledge as reflected in the following quote:

... None but the well-informed are successful... for success in agriculture today implies knowledge — scientific knowledge.

— Charles Valentine Riley, 1872

The founders of RMF and many others recognized Riley as being a unique individual, as reflected in this excerpt from the RMF website <https://rileymemorial.org>: *Riley truly was a “whole-picture” person — an artist, poet, writer, journalist, linguist, naturalist and philosopher, as well as a scientist and administrator. In 1878, Riley joined with Alexander Graham Bell, John Wesley Powell and 57 other men in science, literature and the arts to found the Cosmos Club in Washington, D.C., as a “social club for individuals of distinction and sociability.”*

In its programs, RMF has continued to recognize the whole-picture vision of Riley and the many dimensions of agriculture with a focus on increasing scientific knowledge.

American Association for the Advancement of Science, 2008. Up until 2008, RMF was responsible for a wide range of events and two Charles Valentine Riley Memorial Lectures, as well as preparing numerous reports. During this period, support was obtained for specific topics, but the activities did not develop the desired appreciation for a whole-picture vision of agriculture. Therefore, RMF established an endowment at the American Association for the Advancement of Science (AAAS) to support an annual Riley Memorial Lecture. AAAS seemed the ideal place to seek assistance in promoting increasing scientific knowledge related to a whole-picture view of agriculture: it is the world's largest multidisciplinary scientific society, a leading publisher of cutting-edge research through its *Science* family of journals, and has 130,000 members in more than 91 countries.

To date, 11 annual lectures supported by the endowment and additional sponsors have been presented on a wide range of topics, which together are consistent with the whole-picture approach:

1. Agriculture Research: Changing the Guard, Guarding the Change (Beachy, 2010)
2. Tomorrow’s Table: Organic Farming, Genetics, and the Future of Food (Roland, 2011)
3. Why Innovation in Agriculture Matters (Horch, 2012)
4. Food, Feed and Fuel from Crops under Global Atmospheric Change: Could we have it all in 2030? (Long, 2013)

5. A Food and Agricultural Research Agenda to Deal with the Asteroids (Glickman, 2014)
6. A University President’s Perspective on the Economic Importance of Pursuing a Unifying
7. Message to Make Agriculture a National Priority (Leath, 2015)
8. The Role of U.S. Research Universities in Meeting the Global Food Security Challenge (Woodson, 2016)
9. Joining Forces to Protect the Future of the Planet (Fraley, 2017)
10. Does Agriculture Have a Parallel Science Problem? (van Eenennaam, 2018)
11. Science and Policy: Their Yin and Yang Dynamic and Global Food Security (Ziegler, 2019)

Research Partnerships, 2011. Consistent with the whole-picture approach, RMF conducted a national competition in 2011 to select exemplary partnerships from across the country to represent the diversity represented in agriculture. The following federal entities outside of USDA were represented in the partnerships:

Department of Energy	National Science Foundation
Environmental Protection Agency	Office of Science and Technology Policy
National Institutes of Health	United States Geological Survey

The following entities from USDA were represented in the partnerships:

Agricultural Research Service	Forest Service
Economic Research Service	National Agricultural Library
Foreign Agricultural Service	National Institute of Food and Agriculture
Food and Nutrition Service	National Resource Conservation Service
Extension, Education & Economics Advisory Board	

In addition, seven universities and 12 nongovernmental science organizations participated in the event held at AAAS. RMF rented the space for this event, but as AAAS learned more about RMF’s efforts to increase scientific knowledge, AAAS contributed the space for all future events held at AAAS. Fourteen exemplary partnerships representing agriculture production, food and nutrition, processing, natural resources, energy and the environment were presented and descriptions of those partnerships were published in *Agriculture, Food, Nutrition, and Natural Resources R&D Round Table: Research Partnerships Yield Greater Societal Returns* (RMF 2011).

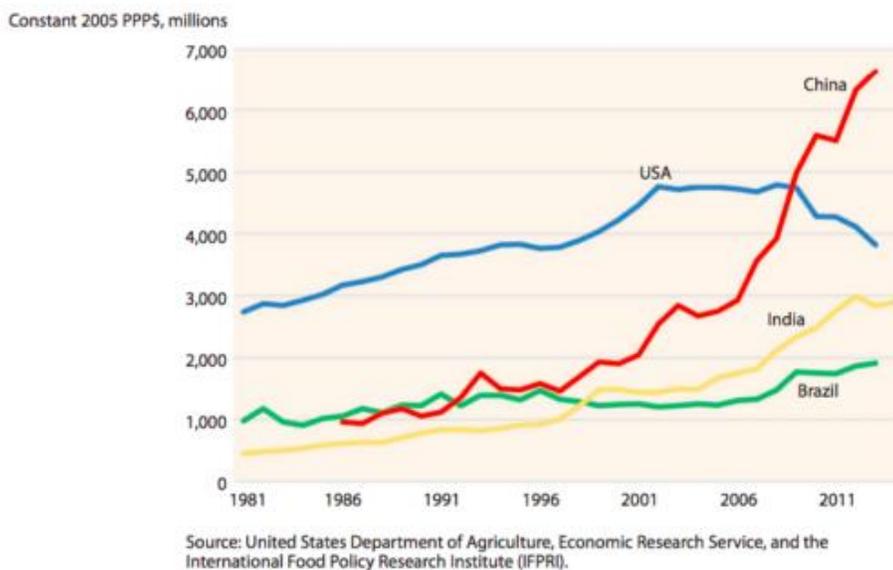
Global Public Spending for Agricultural R&D, 2013. The role of the U.S. in R&D as compared to other countries is an important consideration. For instance, discussions in and around the 2013 AAAS, RMF and WFPF Leadership Breakfast were followed by a working paper prepared by RMF (RMF 2013) to document those discussions, including a graph on global public agriculture R&D spending (Figure 1). The discussions and the working paper led to an

editorial in *Science* by Alan Leshner, CEO and Executive Publisher of *Science* for AAAS, titled *Maintaining Science Eminence* (Leshner 2013).

“Agricultural R&D provides a dramatic example of how neglect can undermine the scientific domain.”

— Alan Leshner, 2013

FIGURE 1. Global Public Agricultural R&D Spending, 1981–2014



In the discussions with Dr. Leshner that led up to his decision to publish the editorial, he commented that he had not been aware of the serious deficit in federal spending for agricultural, food and natural resources research, but he was aware that the various groups interested in that research were divided and that the situation was not likely to change until a more common voice supporting increased funding existed.

The National Press Club, 2014. The editorial by Dr. Leshner generated much discussion, but it left a question about what should be done. Consequently, RMF took the advantage of university leaders being in Washington, DC, for the 2013 annual meeting of the Association of Public Land-Grant Universities (APLU) to organize a discussion session hosted by AAAS to address the question. Seventeen people attended plus 11 others participating by phone. There was strong agreement among those participating that an effort should be made to develop a common voice. In a follow-up conference call with a smaller group, Wendy Wintersteen, then Dean of Agriculture and Life Sciences at Iowa State University, surfaced as a person that likely could be particularly helpful in developing a common voice; she became President of RMF in 2014. In early 2014, RMF and Iowa State University agreed to collaborate in an effort to develop a unifying message in support of agriculture, food and natural resources research.

Subsequently, an inaugural report titled *Pursuing a Unifying Message: Elevating Food, Agriculture and National Resources Research as a National Priority* (RMF 2014) was released at the National Press Club in Washington, DC, in December 2014.

“It’s time to take a different direction that unifies the diverse and diffuse support that exists for food, agriculture and natural resources research.”

— Wendy Wintersteen, 2014

The inaugural report made it clear that a loud, clear and common message that increases investments in broadly defined food, agricultural and natural resources research was needed. In order to develop that message, each segment of agriculture must come out of its silo and think less about business-as-usual winners and losers. Also, each must think more about the advantages of working together with a broader set of society’s stakeholders on a common agenda and a common end — an end that results in a compelling message on the relevance of broad, diverse agricultural research that captures attention on the national stage.

That report indicated the United States was in danger of losing its prominence in food, agricultural and natural resources research, and that it was important to address the situation. Likewise, the report recognized there was a growing awareness that without a significant recommitment of resources, U.S. agricultural research was unprepared to meet this century’s formidable and looming challenges. Consequently, that awareness led to a growing number of urgent calls to reverse faltering support by entities across the scientific and agricultural spectrum. A common commitment to greater advances in agriculture, food and nutrition, forestry, natural resources, bioenergy and environmental sciences was required to improve productivity, spur the economy and meet future demands (RMF 2014).

The report was well-received. There was broad agreement about the critical need for additional resources; it also was evident that a “common voice” did not exist. At the same time, there was broad interest in an effort to develop a common voice. To do that, there was a need to involve a wide range of stakeholders. With the level interest expressed, it was obvious that the effort to develop a unified message should continue, and the team that put together the inaugural unified message report made a commitment to continue the effort.

Raising the Profile of Federal Research, 2016. As the unifying message effort continued, it was important to continue some efforts consistent with whole-picture approach. In order to do that, RMF conducted a roundtable that brought together representatives to raise the profile of federal research related to agriculture broadly defined. RMF organized the roundtable with co-conveners the Supporters of Agricultural Research Foundation (SoAR), Iowa State University and the American Society of Plant Biologists.

The following federal entities outside of USDA were represented at the roundtable:

Department of Defense	National Institutes of Health
Department of Energy	National Science Foundation
Environmental Protection Agency	Office of Science and Technology Policy
National Aeronautics and Space Administration	U.S. Agency for International Development
National Oceanic and Atmospheric Administration	United States Geological Survey

The following federal entities inside USDA were represented at the roundtable:

Agricultural Research Service
Economic Research Service
Forest Service

Research, Education and Economics
Mission Area
National Agricultural Statistics Service
National Institute of Food and Agriculture

The roundtable presentations were again consistent with a whole-picture approach and were reported in *Pursuing a Unifying Message: Elevating Food, Agricultural and Natural Resources Research as a National Priority: Raising the Profile of Federal Research* (RMF 2016a).

Unifying Message Continues with Research Emphasis

In view of the very diverse interests among the many stakeholders, RMF conducted a series of roundtables so that as many stakeholders as possible could become familiar with the need for a unified message in support of agricultural, food and natural resources research and to get inputs on the needs. The six roundtables involved 121 organizations and 262 participants, and were conducted on a university perspective (2015), a scientific society perspective (2016b), raising the profile of federal research (2016a), a food, nutrition and health research perspective (2016c), a natural resources research perspective (2018a), and a commodity research perspective (2018b). In addition, three special reports to highlight USDA intramural research were prepared on the Agricultural Research Service (2018c), the Economic Research Service (2018d), and the Forest Service (2018e), since these programs were not the main focus of any of the roundtables. Also, a special report was prepared on the Non-Land-Grant Colleges of Agriculture (2018e), since there was a need for their role to be better understood.

The progress made in developing a unified message was summarized by a 2018 RMF report, *A Unifying Message: Pulling Together. Increasing Support for Food, Agricultural and Natural Resources Research* (2018f), which included the following statement by Former RMF President and current Iowa State University President Wendy Wintersteen:

I ended my remarks at the National Press Club (in December 2014) with three questions:

- 1. Does the pursuit of a unifying message resonate with you?*
- 2. Do you believe it's time to take a different direction that unifies the diverse and diffuse support that exists for food, agriculture and natural resources research?*
- 3. What are all of us willing to commit (in an) attempt to be successful?*

....I strongly believe that the first two questions have definitely been answered.

Unifying Message Continues with Expanded Scope: Education, Cooperative Extension and Public Outreach

As a step towards answering Dr. Wintersteen's third question, RMF made the judgement to expand the scope of the unifying message effort to include education, extension and outreach, and organized a team of seven people to develop a special report, *Cooperative Extension and Outreach: Advancing Agriculture and Improving Lives* (RMF 2019).

The primary purpose of the extension and outreach report was to document what is being done by Cooperative Extension, Non-Land-Grant Colleges of Agriculture (NLGCA) and Non-Governmental Organizations (NGOs). The presentation of 30 success stories demonstrated much that has been accomplished with existing resources and that collaborations among the three entities offer a great return from the use of public resources.

The report also demonstrated that although the size of land-grant university Cooperative Extension's programs are much larger than that of the NLGCA and NGOs, the efforts of the NLGCA and NGOs offer an important complement by leveraging their unique roles and capabilities. The efforts of all three groups are linked to other segments of agriculture and food research and education system, helping to expand their impact. In addition to highlighting the complementary roles of the three groups, the importance of youth, family and rural community and economic development programs was brought forward.

Adding programs and interests associated with Cooperative Extension, NLGCA and NGOs is an important building block in the development of a unified message and is necessary to get desired commitments to a unified message.

Increasing Unity

In the process of developing the *Cooperative Extension and Outreach: Advancing Agriculture and Improving Lives* report, the authors recognized the promising power of greater unity not only between Cooperative Extension, NLGCA and NGOs, but also among others that influenced the outcomes of the most recent farm bill and federal appropriations cycles.

Going forward, an even higher degree of substantive and strategic unity to support major increases in funding through USDA holds great promise to accelerate recent gains. By working together on a comprehensive strategy, beyond each interest group's particular focus, progress can continue to be made in fulfilling the vision of a unified approach and message (Purdue University 2019). The importance of some of the future actions resulting from the process of developing that report have been briefly summarized by Klemme (2019):

Future importance of continued collaboration of Cooperative Extension (CE) and public outreach:

- Increased synergy and impact of the combined work of land-grant university CE, NCLGA and NGOs.
- Continued unity in communicating the public value of research, Extension and outreach.

Much has been accomplished to increase unity among stakeholders since RMF's National Press Club event in December 2014. For example, there is a considerably increased understanding among stakeholders of the complementary roles of extramural and intramural research; of the complementary roles among the land-grant universities, NLGCA and NGOs; and of the value of both capacity funding and grant funding. Also, the need for increased emphasis on research and education on food, nutrition and health and on natural resource management in order to better address the concerns of a broad base of stakeholders has become more evident.

Still, a higher degree of unity is needed in order to produce a unified message that includes specific major increases in federal funding for agriculture, food and natural resources research, education, extension and outreach. Although support of 100 percent of the stakeholders for specific increases may not be realistic, vigorous support of 80 to 90 percent of stakeholders may be adequate for the U.S. Congress to act. That support needs to come from agricultural producers and processors; renewable resource and environmental interests; food, nutrition and health interests; rural economic development and community leaders; and science and education interests. Most of these stakeholders were represented among those that attended the six roundtables (RMF 2015, 2016a,b,c, 2018a,b) and the numerous contributors to the inaugural unifying message report and the five special reports. (RMF 2018c,d,e,f, 2019).

Three major interest groups that were previously involved in unifying message efforts are among those that ultimately will need to be involved in continuing efforts. Selected organizations in those three interest groups are shown below.

Selected natural resource interests (2018a), including:

American Farmland Trust
American Society of Agronomy
Council on Food, Agricultural and Resource
Economics

Crop Science Society of America
Environmental Defense Fund
Organic Farming Research Foundation
Environmental and Energy Study Institute

Environmental and Energy Study Institute
National Sustainable Agriculture Coalition
National Association of Conservation
Districts
Society for Range Management
Society of American Foresters

Soil Health Institute
Soil and Water Conservation Society
Soil Science Society of America
Supporters of Agricultural Research
Union of Concerned Scientists

Selected food, nutrition and health interests (2016c), including:

AARP Foundation
American Cancer Society
American Diabetes Association
American Heart Association
American Public Health Association American
Society for Nutrition
Academy of Nutrition and Dietetics
Global Obesity Prevention
Grocery Manufacturers Association
Federation of American Societies for
Experimental Biology
FoodSpeak, LLC
Food Marketing Institute Foundation

Foundation for Food and Agriculture
Research
Institute of Food Technologists
International Food Information Council and
Foundation
Mars, Inc.
Nestlé Corporate Affairs
Research! America
Society for Nutrition, Education and
Behavior
The Food Trust
The Pew Charitable Trusts

Selected commodity interests (RMF 2018b), including:

American Farm Bureau Federation
American Seed Trade Association
American Soybean Association
American Sugar Beet Association
National Association of Wheat Growers
National Cattlemen's Beef Association
National Chicken Council
National Corn Growers Association
National Cotton Council
National Council of Farmer Cooperatives

National Farmers Union
National Pork Producers Council
National Turkey Federation
Plains Cotton Growers, Inc.
Southwest Council of Agribusiness
United Soybean Board
United Egg Producers
U.S. Poultry & Egg Association
Western Growers

Although not a part of federal appropriations, the producer-funded commodity checkoff programs that receive oversight from USDA have significant research components. These probably should be part of the overall discussion at some point, as the 22 commodity-based programs provide a framework for agricultural industries to pool their resources and combine efforts to develop new markets, strengthen existing markets and conduct important research and promotion activities (USDA 2019).

Going Forward: An Emphasis on USDA Appropriations

In going forward, there should be an opportunity to build on an existing position statement and partnership agreement. In a position statement, RMF formalized its intent to work closely with the Board of Agriculture Assembly (BAA), Association of Land-Grant and Public Universities (APLU), to *“join our voices to others calling for strengthening federal research, education, Extension, and outreach efforts directed toward food, agriculture and natural resources — essential work that touches every American and contributes to the public good, including economic growth, jobs and quality of life improvements and we support growing each of the key components of the related funding portfolio”* (APLU and RMF 2019).

In addition, RMF’s partnership agreement with the Supporters of Agriculture Research (SoAR) documents a mutual goal of *“increasing federal investments in agricultural research and producing the best possible food and agricultural science in order to meet some of the greatest challenges of the 21st century (and) ...to build support and increase federal funding for agricultural research.”*

At a minimum, RMF will continue its efforts to recognize important works wherever they occur through the collaboration with AAAS and the World Food Prize Foundation in the conduct of the annual Charles Valentine Riley Memorial Lecture and Leadership Breakfast. RMF also will consider repeating the federal-agency roundtable that produced *Raising the Profile of Federal Research* (RMF 2016b). In view of the time that has elapsed and considering changes in personnel, it is important that contributions within and outside the USDA continue to be visible and that research that impacts agriculture, food and natural resources receives adequate support.

To make a real difference, substantial increases in federal appropriations are needed. Accelerated communications with the U.S. Congress that involves specific numbers are necessary to make that happen. Although it is desirable that those communications involve all federal research, to be most effective perhaps the goal should be a unified message with a subset of targeted messages directed to the appropriate related committees and subcommittees.

Therefore, in going forward, a process could be designed that would lead to the development of a unified message containing specific increases in appropriations that would be directed primarily to the appropriate authorizing and appropriations committees and subcommittees in the U.S. Congress.

Appropriations for USDA Research, Education and Economics Mission Area

The first of perhaps a subset of messages under a unified message approach would deal with the budgets of four USDA agencies:

- Agricultural Research Service (ARS) – USDA’s chief in-house scientific research agency with over 90 locations nationwide and overseas
- National Institute for Food and Agriculture (NIFA) – funds external research through a nationwide network of land-grant colleges and universities, agricultural experiment

stations, schools of forestry, schools of veterinary medicine, and funds the nationwide cooperative extension system.

- Economic Research Service (ERS) – provides economic and policy analyses on farming, ranching, food, conservation practices, farm management, commodity markets and rural economic development
- National Agricultural Statistics Service (NASS) – collects and reports statistics on U.S. agriculture, such as the farm census, crop forecasts and price estimates.

Appropriations for the four USDA agencies for four recent years are presented below to serve as a possible baseline for developing proposed increases in appropriations (CRS 2019); and since both the U.S. House of Representatives and the U.S. Senate have acted on the FY 2020 appropriations, they are included as well (AAAS 2019).

Agency	Billions of dollars					
	FY 2016	FY 2017	FY2018	FY2019	FY 2020	
					House	Senate
National Institute of Food and Agriculture	1.33	1.36	1.42	1.47	1.55	1.49
Agricultural Research Service	1.36	1.27	1.34	1.30*	1.35**	1.43**
National Agricultural Statistics Service	0.168	0.171	0.192	0.175	0.181	0.175
Economic Research Service	0.085	0.087	0.087	0.087	0.088	0.087

* Does not include \$381 million in facilities

** Does not include facilities for \$50 million in House and for \$305 million in Senate

Although the discussions led by RMF that began in 2013, followed by the inaugural unifying message report, six roundtables, the summarizing *Pulling Together* report and five special reports have contributed to substantial progress toward unity, further significant steps towards unity are necessary if the total community is serious about obtaining substantial increases in funding.

Perhaps now is the time prepare the stage to present to the U.S. Congress a message containing specific increases needed to accelerate research and the delivery of scientific knowledge necessary to address the many challenges associated with an economically viable agriculture, an adequate supply of safe and nutritious food, sustainable natural resources and a healthy environment.

A process involving multiple levels of stakeholders could result in the additional unity necessary to influence the U.S. Congress to act on substantially increasing levels of funding. A next level could primarily involve existing associations and coalitions that have as their primary mission

the promotion of research and/or education and extension and outreach on agriculture, food and natural resources, and that annually make appropriations requests. Representatives from these organizations could work to develop a draft unified message containing desired budget increases — increases that had the support of at least 80 percent of the most influential members of this group. Once that draft was completed, then additional stakeholders would be brought into the process.

The eight organizations whose appropriation requests submitted to the U.S. Congress for FY 2020 contain elements of a desired unified message on USDA research programs and whose requests could be a very useful source of information pursuant to continuing unifying message efforts are:

- National Coalition for Food and Agricultural Research (NCFAR)
- Association for Public and Land-Grant Universities (APLU)
- Friends of ARS
- AgForward
- Supporters of Agricultural Research (SoAR)
- AFRI Coalition
- Non-Land-Grant Agriculture and Renewable Resources Universities (NARRU)
- Friends of Agricultural Statistics and Analysis (FASA)

The request by FASA includes the primary interests of the American Statistical Association and the Association of Agricultural and Applied Economics. Follow-up efforts related to the funding of NASS and ERS likely should include FASA and these two associations.

Also, involving the Council for Agricultural Research, Extension and Teaching (CARET) in future efforts to advance unity is highly desirable. CARET is a cooperative grassroots unit of the Board on Agriculture Assembly (BAA) of the Association of Public and Land-grant Universities (APLU). It represents a broad-based group of citizens from every state, the District of Columbia, Indian tribes and four U.S. territories, working to enhance national support and understanding of the important role played by land-grant institutions in food and agricultural systems and in enhancing the quality of life for all citizens. CARET delegates have knowledge of essentially all elements of the U.S. food and agricultural system that has mainline interests in federally funded agricultural and food research and education.

Also, if a unifying message process continues, it is important to continue to be sensitive to the fact that, to ultimately be effective, it is essential that the vast majority of all stakeholders understand how research benefits all — and that those who have other interests be part of communicating a unified message to increase funding to the U.S. Congress. This diversity of stakeholders includes those supportive of agriculture, food and natural resources research, education and extension and outreach, as well as those with interests in many other parts of the USDA appropriations bill, such as conservation, food assistance and commodity programs.

Finally, it should be noted that the American Grows Act recently proposed by Senator Dick Durbin would increase federal funding for NIFA, ARS, ERS and NASS by 5 percent a year for five years. When adjusted for inflation (about 2 percent a year in recent years, or an average of 1.8 percent the last 11 years; US Inflation Calculator, 2019), the annual increase would need to be about 7%. If the America Grows Act were to become law, it would be an indication of rather

broad support for increases in agriculture, food and natural resources — and could contribute to developing the unity necessary for the U.S. Congress to support major increases in funding for these four agencies.

Conclusion

By working together on a comprehensive strategy that involves all stakeholders, but with each one thinking beyond the particular focus of each one's interest group, progress can continue to be made in fulfilling the vision of a unified approach and message to obtain substantial increases in federal appropriations for agriculture, food and natural resources research, education, extension and outreach.

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