A Unifying Message: Pulling Together

Increasing Support for Food, Agricultural and Natural Resources Research



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Charles Valentine Riley Memorial Foundation

The Charles Valentine Riley Memorial Foundation is committed to promoting a broader and more complete understanding of agriculture and to building upon Charles Valentine Riley's legacy as a "whole picture" person with a vision for enhancing agriculture through scientific knowledge.

Editors

Richard Ridgway, Charles Valentine Riley Memorial Foundation Catherine Woteki, Charles Valentine Riley Memorial Foundation Brian Meyer, Iowa State University

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Foreword

The unifying message efforts of the Charles Valentine Riley Memorial Foundation have been one of the most rewarding experiences for me. It was an honor to be at the table in the fall of 2013 when the decision was made to move forward with the initiative. It was a privilege to serve as an RMF board member and then as RMF president, and to be engaged in an extraordinary set of conversations with an extraordinary set of diverse and committed national leaders.

I believe we kindled new partnerships based on common ground—the urgency we feel in meeting national food, agricultural and natural resources priorities through investments in science and technology. All of it was made possible by RMF and its volunteer servant leaders, in partnership with literally dozens of organizations, and in particular, the American Association for the Advancement of Science, which hosted all our major discussions.

The pursuit of a unifying message doesn't end with a single report or event. I encourage you to continue to take advantage of every opportunity to work together in partnership to align messages, especially on the public good and invaluable return on public investment in agricultural research.

I return to a statement that I made at the National Press Club in December 2014 when we launched the unifying message initiative. It's a message I believe should continue to guide our future efforts together in making sure the vital, critical research our society needs receives the highest priority possible—A common message requires trust in each other and in new and renewed partnerships. A common message requires a belief that increased investment is, in fact, possible. And a common message requires strong support for both fundamental and applied sciences, the only way we meet the nation's long- and short-term needs.

I ended my remarks at the National Press Club 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 and attempt to be successful?

Thanks to RMF's leadership over the past several years—especially the tireless efforts of RMF's emeritus president Richard Ridgway and Iowa State University's Brian Meyer—I strongly believe that the first two question have definitely been answered: Yes, it does. And: Yes, it's time.

The third question remains to be answered. I encourage you to continue to pursue this most important query, which centers on coalition-building. The good news is we continue to see more new collaborations to take the idea of a unifying message forward, step by step.

Someday soon I hope we can erase "pursuing" from the name of our efforts and instead focus on the word "unified." Let's make it happen.

Wendy Wintersteen

President, Iowa State University, and Former President, Charles Valentine Riley Memorial Foundation, 2015-2018

Acknowledgements

The preparation of this report represents a milestone in RMF's unifying message effort to increase support for food, agricultural and natural resources research that has been underway for almost five years.

Now is a particularly opportune time to acknowledge the important contributions of the American Association for the Advancement of Science (AAAS) toward achieving our common goal "to promote a broader and more complete understanding of agriculture as the most basic human endeavor and... to enhance agriculture through increased scientific knowledge." Our special partnership with AAAS on organizing the annual AAAS Charles Valentine Riley Memorial Lecture and the annual AAAS Riley Lecture Leadership Breakfast has helped raise important voices to critical issues facing the nation. AAAS also hosted the RMF roundtables on pursuing a common message, making available its excellent meeting facilities. We are grateful for AAAS' willingness to assist in many ways as we advanced through our unifying message conversations.

Many AAAS staff members are to be thanked for their contributions, but those of special note include Rush Holt, CEO of AAAS and Executive Publisher of the Science family of journals; Joanne Carney, Director, Government Relations; Juli Staiano, Chief Philanthropy Officer; and Anne Moraske, Development Officer.

The Situation We Face and How We Explore a Different Approach

National Preeminence Endangered

The United States is in danger of losing its competitive advantage in agriculture (**Figures 1 and 2**). Beyond its impactful role in the national economy, the food and agriculture system is a critical component of America's infrastructure, essential for life and health. For more than 150 years, the U.S. has put a priority on agricultural research. Advances in agriculture are highly dependent on science and innovation to maintain high productivity and provide resilience to emerging pest and disease threats and severe weather events. Publicly funded agricultural research has led to innovations that helped farmers respond to those threats and also laid the scientific knowledge base for the development of national and international companies that contribute jobs and services. Yet in recent years, federal and state governments have reduced funding for this critical field of science. The United States' preeminence in this field of science is being challenged as other countries ramp up investments in agricultural research. Rising competition from China, the European Union and other regions signals a risk to the U.S. global leadership in agriculture — the U.S. may no longer be in the forefront.

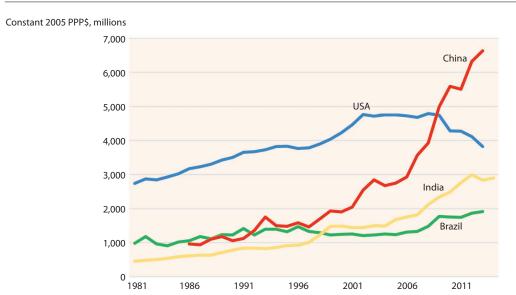
Pursuing a New Approach

In June 2013 the Charles Valentine Riley Memorial Foundation (RMF) convened a small group of leaders in agriculture. At the meeting, USDA Undersecretary for Research, Education and Economics Catherine Woteki and Alan Leshner, CEO of the American Association for the Advancement of Science and Executive Publisher of *Science*, expressed mutual concerns about the lack of support for U.S. agricultural R&D. In August 2013, Dr. Leshner published a *Science* editorial in which he used data on public funded agricultural research, provided by USDA's Economic Research Service, as a dramatic example of how neglect can undermine a scientific domain. Dr. Leshner noted that U.S. spending on R&D had declined over the past decade while investments by China and other countries had increased dramatically. In addition, agricultural productivity is increasing at a much lower rate in the U.S. compared to other countries.

Subsequent discussions led to agreement that an effort was needed to bring together leaders who work in diverse settings that perform or put to use the results of food, agricultural and natural resources research. The aim would be to explore how increased federal funding might be possible through a unifying message expressing the need for support. Consequently, RMF began to pursue the question of a unifying message for elevating food, agricultural and natural resources research as a national priority. The effort became a launching pad — not to create the message, but to inspire diverse stakeholders to come together, understand the importance of this goal for society and realize the benefits of a shared approach and a compelling common message to make this research the priority it must be for our common future. The ultimate goal was to develop a unifying message that would have broad support.

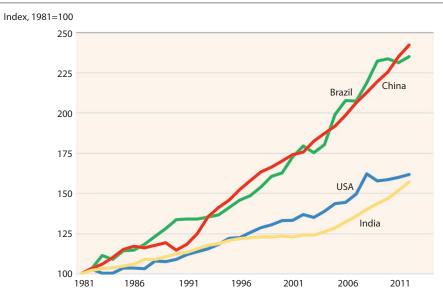
In 2014, RMF established a partnership with Iowa State University to pursue a unifying message that was joined by many others. In December 2014, the first report resulting from the effort, *Pursuing a Unifying Message: Elevating Food, Agriculture and National Resources Research as a National Priority*, was released at the National Press Club in Washington, D.C.

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



Source: United States Department of Agriculture, Economic Research Service, and the International Food Policy Research Institute (IFPRI).

FIGURE 2. Agricultural Total Factor Productivity



 $Source: United \ States \ Department \ of \ Agriculture, Economic \ Research \ Service.$

Six Roundtables, Identifying Common Themes and Message Attributes

In 2015 and 2016, RMF organized a series of six roundtable discussions to discuss a unifying message, all hosted by the American Association for the Advancement of Science. Each was developed by steering committees made up of leaders from diverse organizations. The six roundtables engaged 262 participants and observers representing 121 organizations. Each was an opportunity to outline the foundation of science in a given area, acknowledge its accomplishments and recognize the critical research questions and funding needs.

One workshop brought together representatives from the USDA and five of its research agencies and seven other federal agencies. RMF recognized that, while USDA is the primary federal funder of agricultural research, other federal agencies play important research roles and are making valuable contributions in agricultural, food, nutrition, natural resources, forestry and related environmental areas. This RMF roundtable and its resulting report, *Raising the Profile of Federal Research*, provided an opportunity to explore synergies among the agencies and understand the priorities important to each of the agency programs: USDA Agricultural Research Service, USDA National Institute of Food and Agriculture, USDA Economic Research Service, USDA National Agricultural Statistics Service, USDA Forest Service, National Science Foundation, National Institutes of Health, U.S. Geological Survey, U.S. Department of Energy, U.S. Agency for International Development, U.S. National Oceanic and Atmospheric Administration and U.S. Department of Defense. The diversity in funding agencies and methods represented at the workshop was noted as a strength of the U.S. food and agricultural innovation system. A unifying message should support this diversity of research organizations.

An RMF roundtable of university leaders was held, in recognition that universities represent a major segment of the R&D system, with interests in critical funding provided not only by USDA but other federal agencies. The resulting report, *A University Perspective*, was prepared, followed by a similar roundtable and report with scientific society leaders, *A Scientific Society Perspective*. Three additional roundtables were held that brought together important research interests, from perspectives of both researchers and of end users of research: *A Food, Nutrition and Health Perspective, A Natural Resources Research Perspective and A Commodity Research Perspective*.

Complementing the series of roundtables were speakers — a former USDA Secretary of Agriculture and two university presidents — at the annual AAAS Charles Valentine Riley Memorial Lectures in 2014, 2015 and 2016, who touched on the unifying message approach and importance of raising the priority of federal research funding.

From this five-year dialogue with many leaders representing many groups with diverse interests in food, agricultural and natural resources research, several main conclusions emerged:

Defining Agriculture, Understanding the Importance of Research

Inclusive definition. A broad, inclusive definition of agriculture is central to the approach of the unifying message effort. It includes discovery research; problem-solving research in agricultural production processes from raw materials to consumers and across farmlands, rangelands, forestlands and urban settings; the ecology and sustainability of these processes; and implications for human health and well-being and environmental health.

In support of the public good. The essential role of agricultural research encompasses human health, environmental resilience, community development, national security and economic competitiveness. Many expressed the need to connect food, agricultural and natural resources R&D to maintaining and safeguarding national security, maintaining and growing national prosperity, advancing a future of national energy independence and fulfilling major contributions to national health and quality of life goals. That is why a unifying message should focus on the public good resulting from public investment in food, agricultural and natural resources research. For example, nutrition and the food system are critical to public health. Potential economic arguments for increasing investment in food, nutrition and public health research include reducing healthcare costs, reducing strain on the healthcare system and increasing productivity. In that way, federally funded research truly is viewed as an investment capable of broad impacts, not simply a cost. A unifying message also should acknowledge the key role of the private sector, both through its own research and in partnership with the public sector.

Needed: A healthy innovation ecosystem. There is sincere interest across the broad array of stakeholders in the health of the agricultural innovation ecosystem.

A more nimble system. A unifying message should consider a funding framework that allows for flexibility so research can adapt to emerging or evolving needs, and new federal funding mechanisms that more closely align with the needs of current research.

The Message

A critical need for a unifying message. Emerging from the discussions was the shared recognition that an alarming lack of federal investment in food, agricultural and natural resources research exists in the United States. We are in a paradoxical situation of declining federal funding at a time when public interest in food is extraordinarily high and the challenges to our food system are increasing exponentially. Low success rate in grant applications due to shallow pools of federal funding indicates that many good ideas are going unpursued and opportunities are being lost. Because investment in food, agricultural and natural resources research addresses essential societal needs for the common good, it could be defined as "the people's research." This research investment fuels the solution supply chain needed to address issues that people are passionate about. A deficit of agricultural research leads to a deficit of innovation. In turn, a deficit of innovation leads to a deficit of solutions. Over the longer term, this deficit will limit agricultural productivity, economic growth and jobs created associated with new opportunities. This deficit will leave unchecked emerging threats faced by our food and agriculture system. Federally funded research helps universities mentor and prepare the next generation of scientists and specialists in food, agriculture and natural resources; both private and public sectors depend on this educated workforce of the future to fill innovation jobs.

Vision for employing a unifying message. Envision a time when all organizations lobbying Congress and the Executive Branch begin with a top-line message in support of doubling food, agricultural and natural resources research funding across the board. A unifying message will not eliminate the need for a specific organization to be the voice of its members in advocating for specific legislative requests. But envision a time when each organization harmonizes with many others in articulating a high-level message on the need to strengthen the nation's funding portfolio and infrastructure devoted to ensuring advances in food, agriculture and natural resources.

Transformation and innovation. Investment in research is an investment in transforming the future: to feed a growing population, increase food security in the face of change and prepare for future threats we cannot identify today. Much of the change taking place now, especially in production agriculture, is built on fundamental discoveries made a decade or more ago. Research that ensures long-term sustainability, expands renewable energy resources and increases resilience in the face of change is powerful. For example, the public strongly supports research that helps ensure clean water, air, and healthy wildlife populations. We can show that conserving and improving natural resources provides ecosystem services that benefit our quality of life. Connecting research ideas to transformative solutions: that's what the public is interested in.

The power of big ideas. Big ideas sell. Research needs to be about big ideas — big, exciting goals, transformational ideas and the excitement and appeal of the new. We need to break out of "single benefit or outcome" thinking and demonstrate impact across a host of benefits and beneficiaries. It is important to identify the compelling message or messages on the big ideas to capture not only the imagination, but also the urgency of preparedness to address critical issues. Big, bold audacious goals can draw funding. Years ago, the nation's corn growers extolled the goal of mapping the corn genome. This led to excitement, funding and significant groundbreaking research.

Observations on Improving the Message

Involvement of stakeholders. The breadth and diversity of stakeholders who commit to a unifying message effort are both a strength and a challenge. But we believe the top-line message will be stronger and more effective with the support of a broad-based coalition of stakeholders. Coalition organizers should be cautious of diluting the message by attempting to represent every single interest around the table. Instead, synergies among diverse groups should be explored to identify win-win situations in which each stakeholder feels they benefit by committing to a unified message.

A multiagency approach. A unifying message coalition should emphasize expanding the total funding portfolio across multiple federal agencies, with particular focus on a core set, including USDA, determined by coalition interest. We envision an overall integrated strategy that ensures coordination and connectedness between USDA and other agencies that are supportive of research touching food, agriculture and natural resources. Food, agriculture and natural resources represent an awe-inspiring number of interconnected systems, grand challenges and opportunities. There must be recognition of the interconnectedness of public-good research entities essential to addressing the grand challenges facing us.

Importance of economics. Economic issues and concerns, especially for rural communities, are in the fore-front of everyone's minds. Research must demonstrate its positive impact on the economic fates of the nation's communities.

A customized message for Congress and beyond. Communication to the nation's policy-makers should be focused, consistent, positive and concise. Compelling narratives are invaluable to reach advocacy audiences. A coalition of communicators should convey the overarching ask, tailoring a unifying message with what is relevant to each audience. Polling is a tool that can inform and strengthen customized messages. While actions on messaging should focus primarily on Congressional budgetary decision-makers and appropriators of research, efforts also should target the Executive Branch and the broader public and stakeholders. Public trust must be built through effective communication of how scientific progress in food, agriculture and natural resources impacts every citizen. The closer we link research agendas with timely issues, the better. When stakeholders see direct benefit, they are far more likely to support funding.

Four Special Reports, Bringing Attention to Unique and Key Roles

As part of its unifying message efforts, RMF saw the need for additional information on unique research and educational roles of the USDA Agricultural Research Service, USDA Economic Research Service, USDA Forest Service and the Non-Land Grant Colleges of Agriculture. RMF commissioned the preparation of four special reports to tell their stories in a concise, direct way. The special reports were seen as an opportunity to lift up key pieces of our national agricultural innovation and educational system that may not get enough attention, and to present them in a new, appreciative light. The reports' purpose was to ensure their compelling contributions were not overlooked, and that they remain adequately represented in future discussions on priorities for funding.

The reports demonstrated that the USDA's intramural science agencies – ARS, ERS and FS – play unique roles that neither universities nor the private sector fulfill. These roles include the development and maintenance of collections and data sets that are a resource to scientists in academia and government; response to emergencies; support of USDA action agencies and other federal agencies; technology transfer; providing specialized lab facilities and premier information sources; and facilitating international programs and internationally based laboratories.

Similarly, the non-land grant colleges of agriculture have had relatively little visibility while their roles in education and research have grown in impact. For example, non-land grant colleges of agriculture educate nearly one-quarter of the students graduating with bachelors' degrees in agricultural disciplines.

Selected Related Initiatives

Differences remain, but we have witnessed different interest groups moving closer together toward how to achieve 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."

In 2017, RMF became an official partner of the Supporters of Agricultural Research (SoAR). To further a unified approach, RMF participating in a series of facilitated sessions led by SoAR that resulted in a mutually agreed-upon set of ten Farm Bill Research Title recommendations supported by 67 organizations. The recommendation that future efforts to increase support for agricultural research focus on the four agencies in USDA's Research, Education and Economics mission area was accepted by RMF.

Subsequently, in 2018, RMF partnered with the Board of Agriculture Assembly of the Association of Public and Land Grant Universities to develop a joint position on Farm Bill research priorities in keeping with APLU's agricultural members, but also in several ways complementary and reaffirming of some priorities emerging from the SoAR effort.

In 2018, RMF is a sponsoring organization of a summit developed by the National Coalition for Food and Agricultural Research to discuss the attributes of a vision for the future of the agricultural research and delivery system. The mission of National C-FAR is to sustain and enhance federal funding for food and agricultural research, extension and education to help bring about research outcomes that provide a range of major public benefits.

Early on in its efforts, RMF collected endorsements of its plans to pursue a unifying message from seven university presidents, three leaders representing land-grant and non-land-grant universities and six national, regional and state agricultural organizations.

A Continuing Catalyst for the Way Forward

"We must all hang together or assuredly we shall all hang separately."
—Benjamin Franklin

Emerging from the roundtable discussions and the other RMF efforts of the past several years is a concept for a unifying message rooted in Benjamin Franklin's warning of the fate of those who do not find common ground to move forward together. Several decades of going it alone, and going our separate ways, have resulted in stagnant and declining funding.

A new approach is needed. One must once again envision the concept of all organizations lobbying Congress and the Executive Branch for food, agricultural and natural resources research funding using the same top-line message. The approach would demonstrate unity for an aspirational, long-term, shared objective to substantially increase funding for these critical areas of research. It would demonstrate to decision-makers the interdependencies of key players committed to agricultural innovation, education and extension.

RMF has served as a unique catalyst for a unified approach to appropriations and legislative priorities. RMF's ability to serve as a catalyst is evidenced by the breadth and diversity of groups it has brought together since 2013 to discuss mutual interests in science funding and in ensuring the future of this vital field of scientific inquiry.

RMF will continue to be a catalyst, advocate and willing partner for a unified approach on food, agricultural and natural resources research. We believe it remains critically important to continue to map out and expand the areas of common ground. All who can influence federal funding decisions toward these common goals should make it a priority to increase advocacy.

Since its establishment in 1985, the Charles Valentine Riley Memorial Foundation has been committed to promoting a broader, more complete understanding of agriculture as the most basic human endeavor, and to enhance agriculture through increased scientific knowledge. RMF continues to build upon Charles Valentine Riley's legacy as a "whole picture" person with a vision for enhancing agriculture through scientific knowledge.

For the immediate future, RMF plans to build on progress to date in pursuing a unifying message, including efforts in consensus building. Three initiatives in the planning stages in 2018 are:

Step by Step: Increments Necessary to Reach Long-term Funding Goals

RMF continues to recognize the importance of federal agencies other than USDA that contribute to food, agricultural and natural resources research, but RMF plans to focus immediate efforts on the intramural and extramural science agencies of USDA – the National Institute of Food and Agriculture, Agricultural Research Service, Economic Research Service and Forest Service, as well as the National Agricultural Statistics Service, which provides timely, accurate and useful statistics in service to research, education and economics and to U.S. agriculture. One stated goal for attaining a more appropriate level of funding has been doubling, over the long term, the federal appropriations for USDA research agencies. RMF is supportive, with the realization that success will depend on incremental increases in the short term, over five to 10 years. RMF is considering an ongoing effort working in partnership with representatives from stakeholder organizations to develop a mutual strategy to obtain consistent, additive step-ups in federal funding that enhance R&D efforts in USDA agencies.

Blueprint for the Best R&D System Possible

What would the most robust, effective food and agricultural research-and-technology-generation system look like, if you started the design with absolutely nothing on the table? That was a challenge that arose during one of RMF's unifying message roundtable discussions. RMF is considering convening an initial meeting of stakeholders to discuss how we might take a fresh look at envisioning a blueprint for this best-of-all-possible worlds. After this brainstorming meeting, if there is a seed of an idea to germinate and sufficient interest, RMF may work with interested parties to determine if other foundations would partner to launch a "blueprint" study — one that ensures future research needs, capacity and funding match the next big ideas that drive significant advances in food, agriculture and natural resources. It is thought that no organization has taken on this challenge in quite this way, using this specific perspective. In 2012, the President's Council of Advisors on Science and Technology reviewed the agricultural research enterprise and published a report calling for a new "agricultural innovation ecosystem," but their recommendations were built on current structures of extramural programs already existing in USDA and sister science agencies and emphasized new investment in competitive grants programs and graduate student and post-doctoral training. The National Academies of Science has studied different aspects of the agricultural research agenda and provided advice on directions and priorities but has not been requested by USDA or the Congress to do a comprehensive review of the agricultural innovation system and project a vision of its future.

Convening Stakeholders, Leveraging Efforts

RMF's mission and role focuses on holistic and "whole picture" perspectives on agriculture and science. We recognize how difficult it is to advocate and lobby for a holistic approach. We recognize how difficult it is to stand up for a portfolio approach to research funding as the way forward — as the key to ensuring our long-term ability to meet society needs and truly achieve preparedness for our shared future. Our nation's leaders want specifics and details. But we need to begin with a clear message on the science required to support the essentials of life, good health and a thriving economy.

RMF will continue to be a catalyst for bringing together people, stakeholders and perspectives that, step by step, bring us all closer to that broad perspective. We will work to help build trust and keep open the lines of communication that reduce fears, concerns and suspicions. We will continue to leverage existing and emerging efforts in raising the national priority for research and stand as a willing partner. RMF stands ready to respond to requests from federal science agencies and their broad sets of stakeholders when an independent venue is conducive to furthering understanding of the diverse views and complex issues surrounding agriculture in society. At the close of RMF's roundtable involving multiple federal agencies in 2016, many expressed a willingness to come together again. One idea that emerged from RMF's commodity research roundtable was to establish a more regular forum of top leaders in national agricultural commodity organizations, deans of agricultural colleges and top administrators of federal agencies, with an end goal of voicing current producer needs, a fuller understanding of research priorities and ways to work together to increase research funding. RMF will continue to offer assistance in future efforts to connect federal agencies, stakeholder groups and others to maximize interagency knowledge, build understanding of research progress linked to priorities and coordinate shared interests in food, agriculture and natural resources research.

In conclusion, RMF has been proud to help organize and the lead the partnerships that resulted in vitally important discussions on pursuing a unifying message approach. RMF is a very small foundation. We have no paid staff, but we have a strategic advantage in our committed, respected board of directors — servant leaders who believe in the direction we are heading. We are blessed with sponsors and partners who believe in the foundation's mission — to promote a broader and more complete understanding of agriculture as the most basic human endeavor, and to enhance agriculture through increased scientific knowledge. We move forward together with a firm belief in the words of RMF's founding president, John Gordon, who said: "Agriculture touches all aspects of human activity and it provides the leverage to lift society to greater heights."

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