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UCAR Strategic Plan 2015–2018

"No field of science offers a greater potential for the good of all mankind than does the field of atmospheric science. As a measure of both the challenge and the rewards in view, the sky is quite literally the limit."

— Walter Orr Roberts, founding president of UCAR



OUR THANKS

The UCAR President's Council would like to thank the many employees, visitors, and members of the community who provided input to our Strategic Plan (2015–2018) via online or in-person comments at town halls, open houses, or other venues. Your participation has been invaluable.

We add special thanks to the UCAR Board of Trustees, President's Advisory Committee on University Relations, UCAR Member Representatives, National Science Foundation, and the 60 participants on the eight goal teams who helped articulate our vision.

To the Goal Team Leads, we extend our deep appreciation: Meg Austin, William Brune (Pennsylvania State University), Emily CoBabe-Ammann, David Edwards, Vanda Grubišić, Joan Kleypas, Mary Marlino, Helen Moshak, Mohan Ramamurthy, Scott Rayder, John Ristvey, Elizabeth Ritchie (University of Arizona), Karyn Sawyer, Kathryn Schmoll, Jielun Sun, and Michael Thompson.

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February 2015



THE UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH

A unique consortium advancing our knowledge of the Earth and Sun

Our understanding of weather, water, climate, and related aspects of the Earth and Sun has never been more important for safeguarding lives, infrastructure, and economic well-being. Our capacity to expand our knowledge of these complex, interwoven systems has never held greater potential. UCAR serves a unique and fundamental role as a vibrant hub connecting the academic, public, and private sectors of this enterprise. As the primary nexus for problem solving and collaboration within our broad community of partners, UCAR is committed to building upon and expanding the reach and impact of our activities. This work is enhanced by a global network that sustains our vision and allows us to empower our stakeholders.

Through UCAR's stewardship of both NCAR and the UCAR Community Programs, we facilitate the movement of our research into operations and bring research attention to societal needs and requirements. We leverage these activities through our consortium of more than 100 member colleges and universities and through our extended community network of partners in the public and private sectors. We also represent and amplify the voice of our community, particularly in addressing the many societal benefits of our nation's research and technology.

The aggregate of everyday weather events on our changing planet, from routine to extreme, shapes our society in ways we do not yet fully understand. Decision makers from all walks of life increasingly depend on the knowledge developed through the power of UCAR—our consortium, our National Center, and our Community Programs—to understand the atmosphere, Earth, and Sun that together sustain and shape our lives.

I welcome your participation as we take the next steps together.



Thomas J. Bogdan, Ph.D.

President



OUR VISION & MISSION

The nonprofit University Corporation for Atmospheric Research—UCAR—was created in 1960. Our founding mission was simple: to operate the National Center for Atmospheric Research on behalf of NCAR's sponsor, the National Science Foundation, for the benefit of the atmospheric and related sciences community.

Although much has changed since 1960, and our activities have expanded and diversified, our core purpose continues to guide us, as expressed in our [vision](#):

Understanding tomorrow's weather and climate through partnership, research, discovery, and innovation.

As the needs of our community and the problems facing our society and our planet have evolved, UCAR's mission has broadened:

To empower our Member Institutions, our National Center, and our Community Programs by

- *Promoting research excellence*
- *Developing fruitful collaborations*
- *Managing unique resources*
- *Creating novel capabilities*
- *Building critical applications*
- *Expanding educational opportunities*
- *Engaging in effective advocacy*



OUR GUIDING VALUES

UCAR is committed to the advancement of the atmospheric and related sciences through stewardship of our National Center and our Community Programs. The **values** that underlie our continuing success and our future advances are woven throughout our institutional culture:

- *Scientific integrity*
- *A diverse workforce*
- *Collaboration and partnerships*
- *Innovation and agility*
- *Transparency and open access*
- *Fiscal accountability*



OUR STRATEGIC PLAN

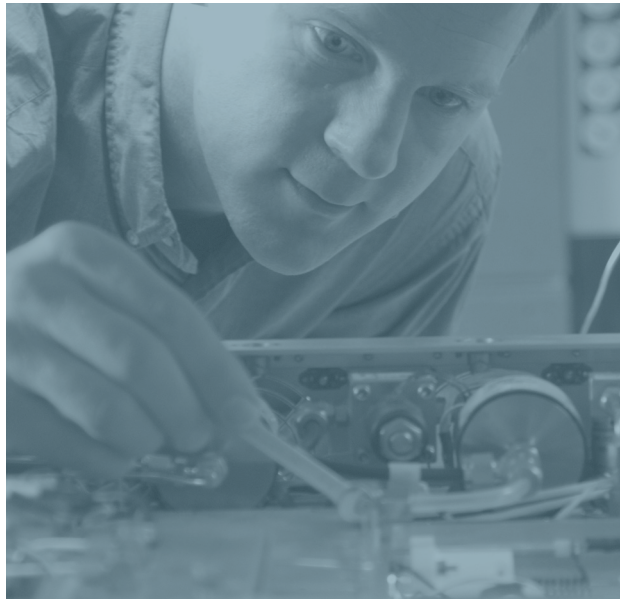


This document outlines UCAR’s strategic focus for the period 2015–2018 and beyond. Each year, a companion **Performance Plan** will specify the actions and the associated metrics that follow from the strategy outlined here.

UCAR’s **Strategic Plan** is built upon eight foundational **goals**, analogous to the eight merging chevrons that form the UCAR logo. In turn, each goal is supported by a series of high-level **objectives** that will lie at the heart of each annual **Performance Plan**. The objectives also provide the metrics by which our success as an organization will be measured. These **goals** and **objectives** are constructed to support the overarching UCAR vision and mission and to guide our efforts as we meet the challenges and opportunities that await us in managing NCAR and providing a portfolio of services via the UCAR Community Programs (UCP).

“I have a very strong feeling that science exists to serve human welfare. It’s wonderful to have the opportunity given us by society to do basic research, but in return, we have a very important moral responsibility to apply that research to benefiting humanity.”

— Walter Orr Roberts, founding president of UCAR





The eight foundational goals each hold equal weight, as follows:

- *Enable, support, and champion NCAR in fulfilling its scientific mission*
- *Serve as a nexus of capability and innovation for efforts that lie beyond the scope of any single UCAR Member Institution*
- *Foster successful and durable partnerships by building living networks through and reaching beyond our university community*
- *Integrate our research into engaging and relevant educational opportunities that support our community, a diverse workforce, and scientific literacy*
- *Advance the cause of our community by advocating for the intrinsic societal value of our research activities*
- *Inspire and preserve a culture of excellence and organizational commitment among our staff*
- *Establish a diverse, engaged, and inclusive workforce and culture that values and recognizes the talents of our employees and visitors*
- *Employ efficient and effective fiscal operational management tools and processes according to best practices*

GOAL I:

Enable, support, and champion NCAR in fulfilling its scientific mission

UCAR's core activity since its creation more than five decades ago has been to serve as the management entity for NCAR. Today, the majority of the UCAR workforce is employed at the National Center. NCAR remains the cornerstone of UCAR's activities, and supporting the mission of NCAR continues to be fundamental to the mission of UCAR. Yet there are vital distinctions between the two.

Excellence in scientific research underpins all the elements of the NCAR mission—from conducting world-class research and advancing the frontiers of knowledge in understanding the behavior of the atmosphere; through supporting, enhancing, and extending the capabilities of the UCAR consortium; to fostering the transfer of technology.



UCAR's primary role in managing NCAR is to provide the thoughtful, effective oversight that allows science to thrive. UCAR ensures that the National Center has the structural and human resources needed to operate successfully. The UCAR consortium of colleges, universities, and affiliated institutions is an invaluable part of UCAR's management role, with its representatives providing high-level reviews and serving as a crucial link between NCAR and academia.

Ultimately, NCAR's success in delivering on its mission is a measure of UCAR's own effectiveness and success.

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NCAR remains the cornerstone of UCAR's activities, and supporting the mission of NCAR continues to be fundamental to the mission of UCAR.

Objectives:

1. Provide seamless, efficient, and transparent business support that aids NCAR in fulfilling its mission and adapts readily as NCAR evolves.
2. Provide physical facilities and modern workspaces for NCAR laboratories and programs that enable world-class science, foster collaboration, and support specific NCAR needs.
3. Attract the best and the brightest to NCAR and ensure diversity of its workforce.
4. Serve as a community nexus for establishing partnerships among NCAR, the universities, and the public and private sectors; and establish a culture of broad engagement, looking for the best set of partners to deliver on specific projects.
5. Pursue targeted visitor and exchange programs between NCAR and Member Institutions to accelerate scientific discovery, and make those and other opportunities widely known and easily accessible.

GOAL II:

Serve as a nexus of capability and innovation for efforts that lie beyond the scope of any single UCAR Member Institution

For decades, atmospheric science has benefited from leading-edge model development, high-end computational services, and sophisticated observations collected around the globe. Central to building these resources has been the ability to forge collaborations among universities, private-sector firms, and government agencies. UCAR has served a leading role in many of these multi-institutional efforts, from developing community models to organizing major field campaigns. In this role, we strive to be collaborative and nonpartisan, helping to enhance capabilities across agencies and institutions.

As the demand for weather and climate services and atmosphere-related knowledge continues to grow, we have the opportunity to structure and coordinate UCAR's broad range of activities to





UCAR will maximize its ability to cultivate innovation and build capabilities that meet the needs of a weather-, water-, and climate-sensitive world.

help meet emerging needs. Enhanced coordination is imperative for the advancement of Earth and Sun system science and for the leveraging of scientific knowledge to benefit society. To these ends, UCAR will maximize its ability to cultivate innovation and build capabilities that meet the needs of a weather-, water-, and climate-sensitive world.

Objectives:

1. Provide scientific, computational, and data facilities that are well integrated with science support and services that meet the needs of stakeholders across the weather, water, and climate enterprise.
2. Strengthen UCAR's leadership role and reputation as a trusted broker in developing cross-sector partnerships and collaborations with and for the community.
3. Galvanize the science community to advance cross-agency and multi-institution development programs that will position the United States as the world leader in predicting behavior of the Earth and Sun system on a variety of temporal and spatial scales.
4. Provide a focused and effective suite of capabilities for, and in partnership with, our worldwide community to address issues in education, outreach, and diversity.

GOAL III:

Foster successful and durable partnerships by building living networks through and reaching beyond our university community

Collaboration is at the heart of UCAR. More than 50 years ago, faculty at 14 universities formed the committee that became UCAR in order to pave the way for breakthrough research that was beyond the scope of any single institution. Their work laid the foundation for the management and organizational structure that has allowed thousands of scientists and other specialists to interact at NCAR and UCAR Community Programs (UCP) symposia and workshops, collaborate on NCAR-hosted community models, and benefit from wide-ranging services for the community.

With the benefit of the ongoing revolution in information technology, there is now great potential to derive even more value from the unique mix of capabilities available at NCAR and UCP. By



forming new kinds of partnerships across our organization, among members and the private and public sectors, UCAR can help catalyze activities and initiatives that might otherwise be difficult or impractical to undertake. We will employ innovations in communication and collaboration technology and entrain the broadest possible networks of partners. Together, we will embark on visionary, transformative research; groundbreaking weather and climate services; and other activities that bring life to the principle behind UCAR's formation—making what might seem impossible possible through the power of collaboration.



UCAR and its partners will embark on visionary, transformative research; groundbreaking weather and climate services; and other activities that bring life to the principle behind UCAR's formation—making what might seem impossible possible through the power of collaboration.

Objectives:

1. Provide capacity and services informed by and responsive to partner needs.
2. Grow a community-driven environment that encourages cross-entity synergy and positions UCAR as the leading collaborative center for the weather, water, and climate enterprise.
3. Lead the community in understanding the evolving needs of all UCAR stakeholders and translate those needs into effective and emergent partnership efforts that diversify our portfolio.
4. Become an incubator for innovative partnership models that facilitate the leveraging of emerging science and technology.

GOAL IV:

Integrate our research into engaging and relevant educational opportunities that support our community, a diverse workforce, and scientific literacy

As a federally funded institution, UCAR has a responsibility to both taxpayers and its stakeholders to disseminate its scholarship and other intellectual assets as widely and openly as possible. Our science addresses challenges of so great a scale and magnitude that they can be met only by a well-informed and broadly engaged community. Moreover, stewardship of the Earth is an intergenerational endeavor and responsibility; hence, sustainable, scalable, and inclusive educational initiatives are of paramount importance.

Our unique strengths—including broad expertise in science, information technology, engineering, applied mathematics, and education based on these STEM disciplines—enable UCAR to serve as an intellectual hub for our higher education community. In addition, we are well positioned to



reach educators and learners beyond colleges and universities. This includes stakeholders and practitioners who work in a variety of sectors related to, and affected by, weather, water, and climate. Drawing on research-based theories of learning and best practices in pedagogy, we develop tools and technologies to help shape a better-informed workforce and a scientifically literate citizenry, thus preparing society to address the environmental challenges of coming decades.



Our unique strengths enable UCAR to serve as an intellectual hub for our higher education community.

Objectives:

1. Promote collaboration with and within the UCAR consortium to engage and train a diverse national and global workforce.
2. Provide leadership and collaborate with the UCAR consortium to develop, implement, and test sustainable and scalable educational programs that optimize emerging technologies and are based on research-based pedagogies.
3. Apply current educational theories and technological tools to develop, evaluate, manage, and distribute education and training materials to higher education officials, civilian leaders, and STEM employers in collaboration with subject matter experts.
4. Ensure that UCAR education programs, resources, and services are user centered and are continually evaluated and improved according to research-based best practices in STEM education.
5. Develop and implement a comprehensive content strategy that promotes open access and provides new audiences with STEM education materials.

GOAL V:

Advance the cause of our community by advocating for the intrinsic societal value of our research activities

No other institution in the atmospheric and related sciences community has the breadth of representation that resides in UCAR's membership of more than 100 campuses across North America. This vibrant network, which includes hundreds of researchers and many thousands of students, is a wellspring of talent and creativity. Scientists at UCAR Member Institutions are the source of future solutions and societal applications for many of today's pressing scientific challenges in Earth and Sun system science. Our network is leveraged further by strong working relationships with federal agencies, nonprofits, private firms, and other partners in the weather, water, and climate enterprise. We will work diligently with these partners to present clear and coordinated advocacy for the atmospheric sciences.



As a voice for the atmospheric and related sciences, UCAR plays an active role in informing our consortium about legislative developments of interest to members. UCAR's advocacy work also includes helping researchers throughout our broader community to bring their perspectives to the public sphere and to the attention of policy and decision makers. The ultimate goal of UCAR advocacy is to strengthen the atmospheric and related sciences and to maximize their value to the nation and the world at large.

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Objectives:

1. Increase the participation of scientists and stakeholders in activities that influence policy and grow resources for Earth and Sun system science.
2. Increase collaboration with academic, private, and public stakeholders to stimulate an environment conducive to advancing atmospheric science initiatives and fostering atmospheric research in a clear, coordinated fashion.
3. Monitor and disseminate public policy and regulatory information on opportunities and threats relevant to the advancement of the atmospheric and related sciences.
4. Support atmospheric and related Earth and Sun system science through promotion of NCAR, the UCAR consortium, and the work of collaborators in our broader networks.
5. Foster an environment that increases the size and diversity of the talent pool in Earth and Sun system science through activities that increase education and training of the next generation.

GOAL VI:

Inspire and preserve a culture of excellence and organizational commitment among our staff

From UCAR's beginnings, a culture of excellence has been an unspoken, intrinsic imperative that distinguishes our organization as a world leader in innovation. Made explicit, a culture of excellence—measured thoughtfully and recognized widely—enables us to attract and retain the most capable, talented, and passionate employees, creating an environment of personal ownership and commitment to UCAR. This culture drives our self-set challenge to sustain and build yet greater capability for advancing Earth and Sun system science in service to the nation and the world.

UCAR strives for both individual and collective excellence. As we work to engage and motivate our employees, we also pave the way for group efforts that foster innovation and growth. To this



UCAR strives for both individual and collective excellence.

Objectives:

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GOAL VII:

Establish a diverse, engaged, and inclusive workforce and culture that values and recognizes the talents of our employees and visitors

UCAR strives to be a high-performing organization, realizing the full potential of our people. An environment that empowers and respects others is one that recognizes differences, creates a sense of belonging, encourages collaboration, integrates varied ideas, and provides an opportunity for everyone to excel. This goal extends beyond UCAR to the community and other external stakeholders. The objectives supporting this goal provide a shared course, encourage commitment, and create alignment in order to cultivate and sustain a workplace environment of diversity and inclusion.

In this context, diversity means attracting unique people and appreciating, understanding, and developing the differences of every person. Diversity includes but is not limited to characteristics such as national origin, language, race, color, disability, ethnicity, gender, age, religion, sexual orientation, gender identity and expression, body size and shape, socioeconomic status, veteran status, educational background, and family structure. It encompasses all that makes us unique, including our inherent talents and gifts as well as our learned skills, biases, teachings, knowledge, beliefs, thoughts, and perspectives. Cultivating and welcoming a depth and breadth of diversity across UCAR and in our community is critical for embracing change, pursuing innovation, and achieving our full potential to solve the complex problems of the future.



Inclusion involves strengthening our engagement through our culture, in our work and our workplace, and by providing individual, team, and leadership opportunities. We will empower each other to drive the success of our organization while being valued and recognized for our efforts and contributions. Inclusion also creates access, integration, and representation. It leverages and celebrates diversity so that all individuals and teams can participate and contribute to their full potential. All these aspects of inclusion are essential today and for our future success, especially in a world of increasing environmental, political, technological, and social change.

Objectives:

1. Nurture an organization of employees who are 100% responsible and accountable for creating and sustaining a diverse and inclusive culture so that we can all reach our full individual and collective potential.
2. Ensure that leaders and supervisors at all levels are dedicated to and responsible for recruiting and empowering a diverse staff and visitor group; and foster an inclusive culture that develops, engages, and values a high-performance workforce.
3. Educate employees and community members about behaviors, attitudes, policies, direction, and structures that have an impact on our ability to effectively work, communicate, and interact cross-culturally.
4. Continue to develop and lead as a center for diversity and inclusion, and as one that learns from and shares best practices within and beyond our community.
5. Develop and maintain relevant, fair, comprehensive, and proactive policies, procedures, and practices that are designed to foster diversity and inclusion for staff and visitors; and that reward and value each person's contributions.

GOAL VIII:

Employ efficient and effective fiscal operational management tools and processes according to best practices

The complexity and reach of UCAR's activities demand that we take full advantage of efficiencies of scale, advances in business technologies, and other cost- and time-saving measures. To provide the best possible environment for NCAR and UCAR Community Programs to fulfill their missions, the organization as a whole must adopt transparent procedures and efficient processes for conducting its work.

UCAR's adoption in 2014 of a consistent platform for email, file sharing, and calendaring across the institution serves as one example of a commitment to business practices that give scientists and other professionals at UCAR the resources they need to excel. With an emphasis on



transparency, clear communication, and verifiable outcomes, UCAR will continue to refine its fiscal and operational strategies in ways that maximize the ability of employees to be responsive, productive, and innovative. Paramount in this endeavor will be the rigorous use of metrics to evaluate and analyze progress.



UCAR will continue to refine its fiscal and operational strategies in ways that maximize the ability of employees to be responsive, productive, and innovative.

Objectives:

1. Develop standardized evaluation methods for business processes to ensure that efficient, effective systems are used throughout UCAR.
2. Improve communication to foster an environment that enables employee engagement.
3. Ensure that any major cross-cutting project or major hire will have a clearly articulated SMART (specific, measurable, achievable, relevant, time-bound) purpose, with measurable goal outcomes, sufficient resources, and an identified follow-through plan.
4. Implement a structured plan to modernize UCAR business systems in order to increase efficiency and optimize resources.
5. As a learning organization, support and encourage innovation from all staff in order to remain relevant and sustainable.
6. Infuse across UCAR a spirit of customer service in order to improve the work that we do and the environment in which we do it.

OUR ORGANIZATION

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The roster of Member Representatives, individuals serving on the President's Advisory Committee on University Relations, and additional information about our organization may be found at our website.

president.ucar.edu