

Integrated Information Services (IIS) Strategic Plan

Preamble

Integrated Information Services (IIS) supports UCAR/NCAR/UCP efforts to both manage, preserve, and provide access to its scholarship for the broad research and education community and to support the science, technology, engineering and math (STEM) community to effectively manage, disseminate, and utilize digital resources. IIS integrates library and information research, development, and operations of the NCAR Library and Digital Learning Sciences (DLS), in particular through our partnership with the Institute of Cognitive Science at the University of Colorado. IIS programs and projects typically involve both internal and external stakeholders and multi-institutional collaborations, and focus on innovation and research relevant in the use of scientific and scholarly information.

Given both the rate of information production and the centrality of information resources, tools, and scholarly communication options available to our various scientific and educational stakeholders, the need to understand, assess, and integrate information in efficient and effective ways is now more critical than ever. Our work addresses these challenges, and in so doing, positions IIS as an essential partner in science research, education, and scholarly communication and supports the UCAR mission to “foster the transfer of knowledge and technology for the betterment of life on earth.”

This document outlines the strategic direction for IIS for the next 5 years. Additionally, it provides a road map for an “actionable plan” that clearly delineates our services and content, our value proposition, and indices of success.

Process

This plan is the result of a highly participatory process, developed iteratively with the engagement of NCAR and UCP senior management and IIS staff. It stemmed from IIS management’s initial identification of the strategic areas outlined in the plan. We convened a series of meetings with these groups to more fully develop the goals, audiences, customers, partnerships, key differentiators, and measures of success. The plan has undergone multiple reviews to ensure consensus and support across the IIS organization prior to this final publication. We intend to conduct periodic reviews of our progress in achieving our goals and report to our primary institutional constituents.

Vision

We provide knowledge services for world class science information that enable:

- Scientists to address the critical problems in 21st century science and education
- Educators to access and use this information for inspired teaching
- Students and citizens to understand and make informed decisions

Mission

We develop and support technologies and services, and conduct research to optimize the discovery, understanding, use, and impact of scientific information. We do this through an organizational culture that supports staff creativity, empowerment, and accountability.

In pursuit of our mission, IIS holds the **Core Values** of:

- Responsiveness to users
- Innovation and creativity
- Collaboration and partnership
- Excellence in products and services

We also hold to **Core Design Principles** in all our projects:

- Clear understanding of what users need
- Accountability in addressing those needs
- Embedding services in the “path of the user”

IIS Strategic Areas

The following strategic areas will guide our efforts. Within each area, specific activities for which we will be held accountable are described.

Strategic Area 1: Research

Using information science skills, knowledge, and methodologies to support the production, dissemination, and preservation of Earth system science research to:

- Ensure UCAR/NCAR/UCP scientists and staff have transparent and seamless access to relevant research
- Ensure broadest possible access to UCAR/NCAR/UCP scholarship for research and education
- Develop and implement a preservation policy for digital Library collections
- Transform the NCAR Library's physical space to support 21st century research practices and collaboration (this considers storage of physical objects, meeting space, computer/technology, etc.)
- Track advances in scholarly communication that will be of high interest and utility to our stakeholders
- Employ systematic processes for engaging UCAR/NCAR/UCP scientists in the design and evaluation of our services
- Provide metrics describing scholarly output and use of institutional services that help drive management decisions

Strategic Area 2: Education

Using information science skills, knowledge, and methodologies to enable scalable dissemination of Earth system science educational resources and services that support their use to:

- Develop innovative tools and services to embed UCAR/NCAR/UCP educational content and opportunities in the path of faculty, teachers, and learners
- Work with UCAR/NCAR/UCP (Spark, Communications, etc.) and other groups to develop a strategy to guide the future development of educational content and services to ensure comprehensive and coherent coverage of atmospheric science topics and concepts (similar to collections assessment)
- Partner with universities and other organizations to conduct research on the next generation of theories, tools, and services in support of Earth system science education
- Develop tools and processes to streamline the management and curation of educational digital content
- Use human centered research methods, web analytics, and advanced statistical algorithms to characterize our users, their needs, their use of our services, and the impact of that use on teaching practice and student learning

- Work with UCAR/NCAR/UCP (Spark, Communications, etc.) and other groups to develop scalable dissemination channels to increase access to Earth system science educational content and services

Strategic Area 3: Data

Provide a suite of services to help scientists better manage and curate data and help the institution and the broader UCAR community better understand the value and impact of our data products:

- Provide leadership for the coordination of data citation initiatives within UCAR/NCAR/UCP and related organizations
- Work with relevant atmospheric science professional societies to integrate data into their scholarly communication processes
- Develop efficient methods for understanding the use and impact of NCAR data
- Develop, acquire, and support services for UCAR/NCAR/UCP scientists to enable them to better manage and curate their data
- Provide training and consulting on best practices in data management planning, curation, and citation

Appendix A: IIS Strategic Plan Value Proposition

	<u>Strategic Area 1</u> Support the production, dissemination, and preservation of Earth system science research.	<u>Strategic Area 2</u> Enable scalable dissemination of Earth system science educational resources and services that support their use.	<u>Strategic Area 3</u> Help scientists better manage and curate data and help the institution and the broader UCAR community better understand the value and impact of data products.
Customers (funding source)	<ul style="list-style-type: none"> UCAR President’s Council External funding agencies 	<ul style="list-style-type: none"> UCAR President’s Council External funding agencies Commercial clients 	<ul style="list-style-type: none"> UCAR External funding agencies
Target Audiences	<ul style="list-style-type: none"> UCAR/NCAR/UCP scientists & staff Atmospheric and Earth science departments in UCAR university & affiliate community 	<ul style="list-style-type: none"> Educators Learners Software Developers Content and/or curriculum developers Educational researchers Service API users 	<ul style="list-style-type: none"> UCAR/NCAR/UCP scientists, data centers, & institutional administrators
Partners	<ul style="list-style-type: none"> NCAR/UCAR/UCP scientists & administrators Preservation service providers Library service vendors Academic publishers, professional societies, citation data providers 	<ul style="list-style-type: none"> UCAR/NCAR/UCP labs, Spark, Communications, GLOBE UCAR universities, & affiliates School districts Educational resource & curriculum creators & aggregators 	<ul style="list-style-type: none"> NCAR/UCAR/UCP data centers AMS, AGU, other publishers External expertise in informatics, bibliometrics, etc
Strategic differentiation	<ul style="list-style-type: none"> Part of an organization that has nationally recognized scientific leadership and credibility Access to world class atmospheric science collections at your fingertips Services tailored to the needs of UCAR/NCAR/UCP scientists, staff, and visitors Deep knowledge of bibliometrics methodologies Embedded atmospheric science experts Can deploy strong and diverse skill sets to serve customer needs Perceived within the organization as thought leader and well connected to innovators in areas of scholarly research and preservation 	<ul style="list-style-type: none"> Part of an organization that has nationally recognized scientific leadership and credibility Affiliation with partner (University of Colorado, Institute of Cognitive Science) with significant expertise in educational and information science research Users ideas and contributions are sought after, respected and reflected in our products and services Culture of excellent customer service in responding to the needs and requests of end users Customize and embed our products and services to better meet user and customer needs 	<ul style="list-style-type: none"> Apply information science strategies to data management community Provide institutional perspective and leadership to develop common strategies across disparate groups Provide new form of scholarly recognition for NCAR/UCAR/UCP data managers and data producers Expertise tailored to the specific needs of UCAR/NCAR/UCP scientists Contribute to preservation, discovery, and reuse of NCAR/UCAR data

		<ul style="list-style-type: none"> • Ability to develop necessary partnerships to better meet user needs • Uniquely combine science, technology, and educational expertise to create an outstanding user experience 	
Metrics	<ul style="list-style-type: none"> • Use metrics and customer satisfaction measures indicate a high level of use and satisfaction with access to relevant research. • Growth of open access collections of UCAR scholarship • Evidence for increased use of UCAR/NCAR/UCP scholarship; for example downloads, citations, H-factor. • Preservation plan is developed and implemented • Digital assets are routinely selected for preservation. • Library physical space is remodeled and scientists and staff actively use the space for collaboration. • IIS staff recognized by information science research community and UCAR/NCAR/UCP for expertise which is shared through seminars, colloquium, and publications. • President’s Council, UMC, scientists assembly routinely make use of metrics provided by IIS in their deliberations • Innovation and renewal metric: 25% of expenditures are through sponsored research 	<ul style="list-style-type: none"> • Evidence for increased use of UCAR/NCAR/UCP educational content tools and services • There is a strategy in place for comprehensive and coherent collection coverage and there are routine processes across UCAR/NCAR/UCP groups that implement the strategy • Impact evaluation is a core component of our development and deployment processes • Use metrics and customer satisfaction measures indicate a high level of use and satisfaction • A portfolio of success cases around sustaining educational innovations • Innovation and renewal metric: 25% of expenditures are through sponsored research 	<ul style="list-style-type: none"> • Institutional policy is adopted and best practices are articulated. • Evidence of increased adoption of data management and data publication and citation best practices by UCAR/NCAR/UCP scientists • AMS and AGU have incorporated data review and citation into their peer review and publishing workflow • UCAR/NCAR promotion and tenure processes recognize data publication as a scholarly contribution • Metrics on the use and impact of UCAR/NCAR data are routinely reported in the NCAR annual report • Data reuse increases over time as data citation becomes more ubiquitous • Innovation and renewal metric: 25% of expenditures are through sponsored research