Spring 2026 Users Committee Meeting

Virtual Meetings (All times are Mountain Standard Time)

Monday, 16 March 2026, 9:00 - 11:00 MT

09:00 – 09:15 Administrative Items and Welcome/Around-the-table check-ins (Co-Chairs/Doug Dirks)

09:15 – 09:45 Director's Report (Mohan Ramamurthy)

09:45 – 10:15 NOAA NCEP Update (Margaret Curtis)

10:15 – 10:45 IDV and Gemini Demo and Q&A (Yuan Ho)

10:45 – 11:00 Administrative Items / Wrap Up

Wednesday, 18 March 2026, 10:30 - 12:30 MT

10:30 – 10:35 Administrative Items and Welcome (Co-Chairs/Doug Dirks)

10:35 – 11:15 NSF Unidata Portfolio Lightning Updates (UPC)

11:15 – 11:30 BREAK

11:30 – 12:15 NSF Unidata Portfolio Open Discussion (all)

12:15 – 12:30 Administrative Items / Wrap Up

Friday, 20 March 2026, 13:00 - 15:00 MT

13:00 – 13:05 Administrative Items and Welcome (Co-Chairs/Doug Dirks)

13:05 – 13:20 DeSouza Candidate Selection and Discussion

13:20 – 13:50 Invited Speaker (TBD)

13:50 – 14:05 Future Directions for Earth Observations & Data Stewardship (Sean Arms)

14:05 – 14:45 Open Discussion: Shifting Landscapes at Higher Education Institutions

14:45 – 15:00 Administrative Items / Wrap Up

*Friday, 10 April 2026, 12:30 - 15:30 MT
(Joint) + Optional Mingling

12:30 – 12:45 Administrative Items and Welcome (Co-Chairs/Tanya Vance)

12:45 – 13:45 Committee Model Implementation and Chair Selection

13:45 – 14:00 BREAK

14:00 – 14:45 AI/ML Vision and Opportunities for NSF Unidata (Subcommittee, UPC)

14:45 – 15:15 WIS2 Overview and Discussion (Ethan Davis)

15:15 – 15:30 Administrative Items / Wrap Up

15:30 – 16:30 Virtual Mingling (all, optional)

Status Report: Users Committee Actions

September 2025 - March 2026

Unidata Program Center Staff

Actions from the Previous Meeting (September 2025)

Action 1

Define AI/ML from the community perspective. Determine where Unidata's "lane" is in the AI/ML space. Committee to have something to share with UPC by mid-November. [SeanF, KimW, AaronK, CraigR]

Result

Complete

Action 2

Poll committee members for Spring 2026 meeting dates (virtual meeting) [TanyaV]

Result

Complete

Action 3

Match Status Report order with Lightning Talks and add Q&A slide to end of Lightning Talks that includes any Status Report questions [TanyaV, DougD]

Result

This change is implemented in the Executive Summary and in the full status report PDF. The ordering of the reports on the meeting web site will remain unchanged.

Action 4

Add an agenda item for spring meeting for IDV & Gemini demo [TanyaV, Yuan]

Result

Complete

Action 5

Inquire about virtual townhall options for students at AMS [ScottS]

Result

Evaluate if desired AMS 2027

Prepared *March 2026*

Status Reports Executive Summary

September 2025 - March 2026

Unidata Program Center Staff

This summary is compiled from the full status reports, available online:
Staff Status Reports: September 2025 - March 2026

Community Services and Educational Efforts

Community Services

The Community Services group has predominantly focused on progressing downstream phased activities for the prioritized Reimagined Science Gateway Reimagined/Education Hub Project, Community Assessment Initiative, and NSF Unidata Website, as well as coordinating and participating in community engagement and outreach, supporting program development proposals and activities, and advancing the COMET Learning Management System (LMS) MetEd Initiative.

During this cycle, Community Services also drafted and published communications, facilitated the 2026 NSF Unidata Community Equipment Awards, and supported NSF Unidata Advisory Committee activities and communications, including follow-up actions and reports from the Fall Joint Committee meeting workshop sessions, progressing Spring meeting planning, the 2026 NSF Unidata Community Equipment Awards, committee model implementation, the final Committee Charter, and solicitation of the Russell L. DeSouza Award, as well as supported cross-program and cross-organizational collaborations and activities.

Questions for the Committee

None at this time

Data Analysis and Visualization Software and Tools

AWIPS

We currently have one build (version 23.4.1) available to support RHEL/Rocky 8 and 9 that has been in production since July 2025. We have decommissioned all older builds due to running on old RHEL7 systems. EDEX, CAVE, and python-awips are available for install as well as source code available. Next release I am working on will focus on updating Java from version 11 to 17.

The National Weather Service (NWS) has started their transition to Cloud AWIPS by awarding two new 5-year contracts. Booz Allen Hamilton has been contracted for the "Data Environment" path which will focus on how AWIPS will receive, organize, store, and analyze data in a cloud based environment. Unidata will be working with BAH to complete specific Task Orders. Accenture Federal Services was awarded the "Applications Environment" contract which focuses on designing/developing data intensive user interface that serves as 1) interactive data analysis and 2) automated creation for public facing products in a cloud based environment. The goal for the NWS is to have a fully operational Cloud AWIPS environment by late 2027. Minimal new functionality is being added during this time to ensure a smooth transition, however Hazard Services V4, which includes convective hazards, is being pushed out very soon and will eventually replace WarnGen.

A couple workshops/demos were done over the past few months. I provided a remote demo of CAVE, focusing on satellite data for Millersville University. At AMS 2026 in Houston, TX, Drew and I hosted a Student Workshop focusing on data visualization within metPy, python-awips, and CAVE. We had over 60 students attend. Both of these events utilized the Virtual Desktop on a JupyterHub where students could connect to CAVE from their browser via the help of the Science Gateway group and Jetstream2.

IDV

We continue to support, update, and enhance the 3D data visualization and analysis tool IDV for our community. Our current activities include: coordinating with netCDF-Java group to add new data formats, collaborating with the SSEC developers to enhance the VisAD library, and working with our community to promote the usage of the IDV in research and education.

Python

The deadline to apply for travel funding to the 2026 Pythia Hackathon is March 22, 2026. Unidata's Python efforts continue to encompass: training on the use of Python for the community; development and maintenance of several tools for the community (most notably MetPy but also Siphon and data processing scripts); and participation within the broader scientific Python community. As a result of changing resource availability, we are de-prioritizing synchronous training events to instead prioritize authoring high quality asynchronous online examples and engineering new technical solutions to learning problems in the community, as well as funded efforts around Project Pythia, including the hackathon in June 2206. We presented a workshop in collaboration with Python-AWIPS at the 2026 AMS Student Conference, and are looking at options for AMS 2027. Siphon development is low in immediate priority, but is supported by stable infrastructure and a simmering community engagement. MetPy development continues and 1.8.0 is slated for release late Spring 2026, featuring our C++-based performance enhancements, based on new build, test, and packaging infrastructure. We are exploring new collaborations with other Unidata staff projects, and seeking new project planning and funding opportunities to support MetPy and Siphon development. MetPy's impact on science continues to grow, with 472 theses and peer-reviewed publications mentioning or citing MetPy, including 11 so far in 2026.

Questions for the Committee

1. [AWIPS] Are there any new datasets, visualizations, capabilities you would like to see added to Unidata's AWIPS?
2. [IDV] We have noticed that many advanced features of the IDV, such as formulas and trajectory displays, have not been widely used in the community and many data servers that the IDV can directly access are less well known to IDV users. We would like to provide help to classes, research groups and project teams to use these resources. Can committee members help to establish such connections?

Data Services, Standards, and Management

IDD, LDM, and WIS 2.0

NSF Unidata's LDM developer and IDD maintainer continues to update LDM source code and operating paradigms with ever-changing computing implementations and user requests. The IDD continues to be enhanced with data redundancy and inclusion of new data.

THREDDS

This THREDDS status report, covering September 2025 to March 2026 focuses on modernization, releases, and community engagement. Key activities include investigating a cross-language architecture for netCDF-Java and the THREDDS Data Server (TDS) to ensure sustainability, alongside a renewed focus on updated and separated documentation for the TDS. The netCDF-Java library was updated with blosc compression for better Zarr support, preparing for the v5.10.0 release. The TDS released version 5.8 with security updates, and v5.9 is imminent with major build and DAP4 improvements. A special TDS war "flavor" now integrates gCDM (gRPC services for the Common Data Model) to facilitate serving data via both Java and Python components. New AI-driven global model outputs (AIGFS, AIGEFS, HGEFS) are now available via Unidata and other community TDSs (notably, the University of Wisconsin's TDS). Future work focuses on netCDF-Java support for cloud-based Feature Collections and Zarr v3, as well as a community survey for the approximately 20 academic institutions running the TDS.

Science Gateway & Cloud Computing Activities

- Secured 5.1M CPU SUs, 467k GPU SUs and 40TB of storage on Jetstream2 effective October 1, 2025.
- Fully transitioned PyAOS JupyteHub deployments to OpenStack Magnum autoscaling replacing older Kubespray/Terraform/Ansible workflow.
- Implemented shared user storage with per-user quotas eliminating volume attachment errors

- Deployed browser-based AWIPS CAVE and IDV desktops within JupyterLab enabling notebook to GUI workflows.
- Served 334 students at 13 institutions (Fall 2025 - Spring 2026)
- Deployed FluentBit centralized logging for all JupyterHub clusters to meet security auditing requirements.
- Launched CILogon authentication on jupyterhub.unidata.ucar.edu allowing access from institutions alongside additional choices.
- Developed prototype “on-demand notebook gallery” integrating nbgallery with JupyterHub for frictionless notebook launch.
- Began deploying conda-store to enable user-defined, shareable, reproducible environments on JupyterHub deployments
- Modernized Gateway web presence via migration to UCAR Drupal platform.
- Began splitting monolithic science-gateway GitHub repository into modular, DevOps, VM stack, and Jupyter configuration repositories.
- Released thredds-docker 5.8 aligned with TDS 5.8 release.
- Continued AWS-hosted NEXRAD Level II/III data via THREDDS.
- Hosted AWIPS EDEX production and development VMs on Jetstream2 with up to 300 daily users.
- Submitted CSS “Elements” proposal ($600k/3 yrs) for composable web-based dashboard.
- Participated in CSSI “Framework Implementations” proposal to port LROSE Gateway to NSF NCAR GDEX
- Began investigation of IceChunk MRMS object-store on Jetstream2

Community Data Standards and Technical Engagement

Engage with federal science agencies, international standards bodies, and other communities focused on data and technology including NASA, NOAA, USGS, World Meteorological Organization (WMO), Open Geospatial Consortium (OGC), Earth System Information Partners (ESIP), CF Conventions for netCDF community, OPeNDAP, and the Zarr and GeoZarr community.

Unidata’s netCDF teams continues to engage with the Zarr community on:

1. Zarr support in both the netCDF-C and netCDF-Java libraries;
2. the development of the Zarr version 3 specification; and
3. the development of the GeoZarr convention.

NetCDF

The netCDF team continues to work towards maintaining the sustainability and viability of the netCDF libraries. While facing challenges when prioritizing work against the resources available, we are fortunate to have an engaged community of users and developers.

The status of the netCDF project in summary: *NetCDF is healthy and remains viable, thanks to the engagement and support of our community.*

Our efforts to serve the community are reciprocated, through high levels of engagement and contributions, for which we are immensely grateful. The netCDF team lacks the resources to quickly evaluate every potentially useful emergent technology or address every bug report, and we must therefore triage based on what best serves our communities interests at large. We continue to advocate for our community through participation in external data-oriented/focused groups.

Data Infrastructure and User Support

WIth the change in management of the NCAR Wyoming Supercomputing Center (NWSC) announced, and the potential changes impacting the Mesa Lab Data Center (MLDC), there is a great deal of uncertainty about both primary data centers utilized by Unidata. Due to the volumes of data moved by the IDD, it seems unlikely this activity could be affordably relocated to the commercial cloud.

We are working to address deficiencies in our software documentation to make the information they contain more user-friendly and discoverable.

Questions for the Committee

1. [THREDDS] Question from the previous two status reports: We are actively creating a requirements document for the next generation THREDDS Data Server, and your input is critical. When thinking about accessing data from thredds.ucar.edu, what are your most important features? Does that look different when considering other TDSs? Please reach out to Sean with your thoughts (sarms@ucar.edu)–your input is very important to us!
2. [netCDF] How can we encourage additional community engagement, from students and/or faculty? We benefit greatly from the involvement of our community, making netCDF truly a collaborative effort. How can we encourage/expand this collaboration? What makes it rewarding to engage with the netCDF developers and the netCDF project. How should we prioritize our limited resources?
3. [Support] What methods for seeking support or engaging in discussions within a community have you used and found particularly effective? E.g., Discourse? Forums? GitHub Issues or Discussions?

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