

# **Fall 2024 Joint Committee Meeting**

---

*(Times are Mountain Standard Time)*

## **Wednesday, September 25, 2024, 11:00am: New Committee Member Orientation**

**[Meet online and in UCAR FL4-1201 (Unidata conference room)]**

11:00 – 12:00 New Committee Member Orientation

## **Wednesday, September 25, 2024, 1:00pm-5:00pm: Users Committee**

**[Meet online and in UCAR FL4-1201 (Unidata conference room)]**

Meeting Commences After Lunch at 13:00

13:00 – 13:05 Administrative Items (Co-Chairs /Tanya)

13:05 – 13:25 Welcome/Introductions (Mohan Ramamurthy/Co-Chairs)

13:25 – 13:45 NOAA NCEP Agency Report (Margaret Curtis)

13:45 – 14:30 Learning Experiences, Design, Science Gateway Reimagined Educational Hub (Nicole Corbin)

14:30 – 14:45 Community Equipment Awards and Upcoming Virtual Session (Chairs)

14:45 – 15:00 BREAK

15:00 – 15:30 Big Data, Science Gateway, and Integrated Approaches (Sean Freeman)

15:30 – 16:30 Spring 2024 Mtg Brainstorming Session Report and Implementation Discussion (Tanya/Committee)

16:30 – 17:00 Administrative / Wrap Up (Review Day's Proceedings/Discussion, Actions, Spring Meeting Dates and Format, Community Assessment Subcommittee Solicitation, Committee Model Primer)

## **Thursday, September 26, 2024, 9:00am-4:30pm (Joint Committee)**

**[Meet online and in UCAR CG1-3131 (Center Green campus)]**

09:00 – 09:30 Administrative Items and Welcome (Chairs/Tanya)

- Committee Members Thank You and Welcome
- Introductions - Member Highlights

09:15 – 09:30 Committee Chairs Update and Prior Action Items

09:30 – 10:30 Director's Report (Mohan Ramamurthy)

10:30 – 10:45 BREAK

10:45 – 11:45 NSF Unidata Lightning Portfolio Presentations (Staff)

- Community Services
- Data Access, Dissemination, and Management
- Data Visualization

11:45 – 12:00 Portfolio Clarification Questions (Staff/Committees)

12:00 – 13:15 LUNCH

13:15 – 13:45 NSF Unidata Portfolio Q&A (Staff/Committees)

13:45 – 14:45 Committee Model Discussion (Chairs)

14:45 – 15:00 BREAK

15:00 – 16:00 Hybrid DeSouza Award Presentation and Q&A (Jim Steenburgh)

16:00 – 16:30 Administrative Items and Wrap-up (Review Day's Proceedings/Discussion, Actions)

16:30 Adjourn

17:30 Dinner at BarTaco at 1048 Pearl Street, Suite 101, Boulder, CO 80302

**Friday, September 27, 2024, 9:00am -1:00pm  
(Strategic Advisory Committee)**

**[Meet online and in UCAR FL4-1201 (Unidata conference room)]**

09:00 – 09:15 Administrative Items and Welcome

09:15 – 09:35 NASA Agency Report (Justin Rice)

09:35 – 09:55 NOAA NWS Agency Report (Scott Jacobs)

09:55 – 10:15 NSF Report (Bernard Grant)

10:15 - 10: 30 BREAK

10:30 - 11:00 Budget Report (Sheri Ruschetta)

11:00 – 12:30 SAC and UPC Collaborative Processes and Frameworks

Collaborative Decision-making Framework for Community Priorities and the NSF Unidata Portfolio

Defining and Refining Internal SAC/UPC Recommendation Process

12:30 – 12:40 Administrative / Wrap Up (Review Day's Proceedings/Discussion, Actions, Spring Meeting Dates and Location)

12:40- 13:00 All Other Business/Lunch/Meeting Adjourned

# Status Report: Strategic Advisory Committee Actions

*April 2024- September 2024*

*Unidata Program Center Staff*

## **Actions from the Previous Meeting (November 2023)**

### **Action 1**

Discuss Fall Joint Committee meeting dates with Usercom [UPC: TanyaV]

#### **Result**

Complete

### **Action 2**

Send 2024 Unidata Strategic Plan Narrative and 1 page summary of NSF Unidata portfolio/high level projects and connections/relevant info to committee members by Friday May 10th. [UPC: TanyaV, DougD, UMT]

#### **Result**

Complete

### **Action 3**

Committee to provide advice to Mohan by May 22. [SAC]

#### **Result**

Complete

### **Action 4**

Reach out to Patrick Quinn (Patrick.m.quinn@nasa.gov) regarding CF workshop and roadmap [EthanD]

#### **Result**

Complete - Emailed and talked at ESIP mtg in July. A team member will attend CF Workshop (remotely).

## **Action 5**

Committees Model Discussion: incorporate input from Spring meeting and send back out over summer for asynchronous SAC member review and feedback, then iterate for a completed version to vote on during Joint Committee Meeting [AlexD, CaseyD, VictorG]

## **Result**

Complete; topic included for Joint Meeting Day.

---

Prepared *September 2024*

# Status Report: Users Committee Actions

*April 2024- September 2024*

*Unidata Program Center Staff*

## **Actions from the Previous Meeting (May 2024)**

### **Action 1**

Fall Meeting Topic Request around AI/ML [TanyaV, Chairs]

#### **Result**

In discussions with the Users Committee Chairs, it was decided this will be feasible for the Spring meeting as the CyberTraining Project will be wrapping up and there will be three more modules to report on.

### **Action 2**

Institute committee member report-out at each meeting, use for blog post if appropriate. Sean Freeman will present at Fall meeting [SeanF, DougD]

#### **Result**

Complete

### **Action 3**

Create a blog post guiding community members on acknowledging Unidata (incorporate new NSF Unidata branding) [DougD]

#### **Result**

Incomplete but still on the ToDo list.

### **Action 4**

Snapshot view of NSF Unidata visualization packages -- purpose and use [DougD]

#### **Result**

To be incorporated into updated web site structure.

## **Action 5**

Brainstorming session next steps: collate, digitize, thematic analysis, explore more gaps/strategies. Share out at the Fall meeting. [TanyaV]

### **Result**

Complete; report to be sent ahead of the Users Committee meeting and the topic is on Fall agenda.

## **Action 6**

Discussion about Spring Virtual UsersCom meeting format (part of wrap up with setting Spring dates) [TanyaV, Chairs]

### **Result**

Complete; topic included on Fall agenda.

## **Action 7**

Create DeSouza award materials [DougD, Chairs]

### **Result**

Complete

## **Action 8**

Equipment Awards review discussion, come up with key recommendations, present at Fall meeting (TanyaV, AlexD, ToddM, JenO)

### **Result**

Discussion postponed until after the Joint meeting.

## **Action 9**

Coordinate w/volunteer subcommittee (CaseyD, CraigR, AaronK, RogerR) to investigate ways NSF Unidata can provide support for AMS Educational Guidelines; meet over summer and report out at Fall meeting [CaseyD, CraigR, AaronK, RogerR, TanyaV, ThomasM, potentially NicoleC]

### **Result**

Complete; Casey to report out at the Fall meeting.

## **Action 10**

(Carryover from previous meeting) Schedule time during Fall meeting to discuss education agenda, align with beta release of Science Gateway education hub [TanyaV, NicoleC]

### **Result**

Complete; topic is on the agenda for the Fall meeting.

## **Action 11**

023 Users Workshop follow-up survey [TanyaV, NicoleC, AlexH, KevinG, KimW, DougD]

### **Result**

Re-evaluated given timelapse; effort to progress community survey or other methodologies of collecting community input.

## **Action 12**

Ask UPC staff who are interested to present at committee meetings; design a presentation format. [TanyaV to solicit participants and confer with chairs]

### **Result**

Complete; folded into educational topic item presentation for Fall meeting.

## **Action 13**

Restructure full status report document to have same structure as the summary report (non-alphabetical) [DougD]

### **Result**

Complete

# Status Reports Executive Summary

*April 2024- September 2024*  
*Unidata Program Center Staff*

This summary is compiled from the full status reports, available online:  
[Staff Status Reports: May 2024 - September 2024](#)

## Visualization and Analysis Software and Tools

### AI/ML

Unidata ML Staff have been working on educational materials, Jupyter Notebooks, technical work, and blog posts. The Cybertraining Award from NSF is a focus moving forward with our colleagues at MSU Denver for in classroom AI/ML content and materials. **This no-code module is ready to be shared at other institutions**, please get in touch if you are interested..

### AWIPS

A major AWIPS upgrade for RHEL8/Rocky8 has been released in beta (version 23.4.1) and has been available since June 26, 2024 which addresses the RHEL7/CentOS7 EOL which was June 30, 2024. Both EDEX and CAVE are available for install, but source code cannot yet be released. The National Weather Service still has not released this version operationally, so we are limited in what we can release to the public, but we wanted to make sure we had something out there to address the RHEL7 EOL.

Our public EDEX is still running version 20 (on CentOS7) through the rest of this semester to help fill the gap from the delayed release of version 23 for Universities, but will be turned off in December.

Based on feedback from Universities running a Windows Lab, we've created a CAVE installer for Windows that installs at the admin level. This way, CAVE only needs to be installed once, but all users on that machine can use CAVE.

Tiffany is planning on attending AMS 2025 where she will be available during the Student Career Fair and throughout the conference for discussions. She will also be presenting on the latest Unidata AWIPS updates.

### IDV with RAMADDA

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

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. We have offered fewer synchronous trainings in this period, instead focusing our limited resources on authoring high quality asynchronous online examples and prioritizing our presence at the American Meteorological Society (AMS) Annual Meeting. We led the design and facilitation of the 2024 Project Pythia Cook-off, a 4-day hackathon in which we grouped over 60 remote and in-person participants together to design these online examples. As part of the hackathon, the *MetPy Cookbook* has reached its first draft for publication to the Project Pythia website. MetPy development continues with the 1.6.3 bugfix release to address upstream changes. We are also planning a 1.7 release this fall which will center around min/max identification and S3 cloud data clients, as well as incorporating a variety of community contributions. MetPy's impact on science continues to grow, with 330 theses and peer-reviewed publications mentioning or citing MetPy, including 57 so far in 2024. While we continue to work with the broader scientific Python community as needed for our goals, Siphon development is completely stalled at the moment; both efforts are difficult to prioritize given limited time and other areas of the portfolio with dedicated awards (e.g. MetPy, Project Pythia) that need to be prioritized.

## Questions for the Committee

1. Did any of your students that went to AMS attend the AWIPS Student Workshop? Is this something we should plan on doing again in the future?

## Data Access/Formats/Dissemination

### Community Data Standards

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, 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.

Unidata has been tracking the development of the WMO Information System 2.0 ([WIS2](#)) and discussing, internally and with WIS2 developers, how it might interact with Unidata technologies like LDM and THREDDS. Moving forward (2-6 years) WIS2 will be the framework for WMO data sharing, eventually replacing the GTS. WIS2 is built on modern messaging and data [standards](#) (e.g., MQTT and OGC APIs).

### IDD & LDM

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.

## IT

Our role is to maintain and enhance the productivity of the staff and assist with the resolution of issues in service to the community. Primarily, that consists of keeping end-user and developer systems secure, and keeping servers and services highly available, patched, and operational for the community. This report is informational and there are no pressing issues.

## 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 team can be summarized as follows:

NetCDF is healthy and remains viable, but remaining so will require continued support from 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.

## THREDDS

New versions of NetCDF-Java and the TDS were released in July. We also performed a significant number of upgrades to the TDS to ensure it remains secure, which were needed due to the end of life of the Spring 5 framework. There is currently only one developer left working on the THREDDS projects.

## Questions for the Committee

1. 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?

## Community Services and Educational Efforts

### Science Gateway & Cloud Computing Activities

- **Jetstream2 Allocation Renewal:** A request for 8.7M CPU SUs and 742K GPU SUs for the 2024-25 cycle was recently approved. This will sustain essential services like PyAOS (Python for Atmosphere and Ocean Science) JupyterHubs and AWIPS EDEX.
- **Increased GPU Access:** Jetstream2 has halved GPU SU costs, effectively doubling GPU

resources, allowing broader access for students, educators, and researchers.

- **LROSE Collaboration:** NSF Unidata is supporting Colorado State University and NSF NCAR's radar meteorology efforts by integrating SAMURAI software into JupyterHub. Presentations and workshops are planned for several conferences.
- **Science Gateway Re-Imagined:** Development is progressing in phases, with private beta testing of JupyterHub request workflows complete. The full release, with features like on-demand notebooks and app streaming, is planned for 2027.
- **JupyterHub Support:** Since Spring 2024, 419 students at 17 institutions have used tailored JupyterHub servers, with several workshops and new university collaborations.
- **NOAA Big Data Program:** NSF Unidata continues to manage NEXRAD level 2 data on AWS, ensuring real-time access to radar data for the community.
- **Ongoing Collaboration:** Active partnerships with Jetstream2 staff and collaborators to optimize the cloud-based deployment of JupyterHub servers and AWIPS EDEX to improve system reliability.
- **Conference Participation:** NSF Unidata will present at the Science Gateways 2024 conference and the American Meteorological Society 2025 meeting.

## Community Services

Our group lost a team member, Jeff Weber, due to reduction in staff actions July 2024. Reorganization of our group activities is ongoing. We have engaged with historically marginalized and underrecognized communities and institutions as part of NSF Unidata's outreach efforts to groups such as Rising Voices, SACNAS, AIHEC, TCUs. We participated in outreach to the Earth System Science community at conferences, workshops, and working groups. We also facilitated the 2024 NSF Unidata Community Equipment Awards, supported NSF Unidata Users Committee and SAC activities and communications, progressed NSF Unidata's core award post-submission activities, worked to advance cross-program and cross-organization collaborations and activities, and expanded learning and development materials, resources, and offerings.

## Support

Unidata has a new support ticketing system in place!

## Questions for the Committee

None at this time.

---

Prepared *September 2024*