



ON THE SURFACE

CSDMS Newsletter
November 2022

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Earth Surface Processes Institute (ESPIIn)

CSDMS is excited to announce that **ESPIIn 2023** will be held May 8-15 at the [Sustainability, Energy and Environment Community](#) (SEEC) facility on the CU Boulder East Campus.

The Earth Surface Processes Institute (ESPIIn) is a six-day immersive training experience organized by CSDMS for 25 early career scientists, including graduate

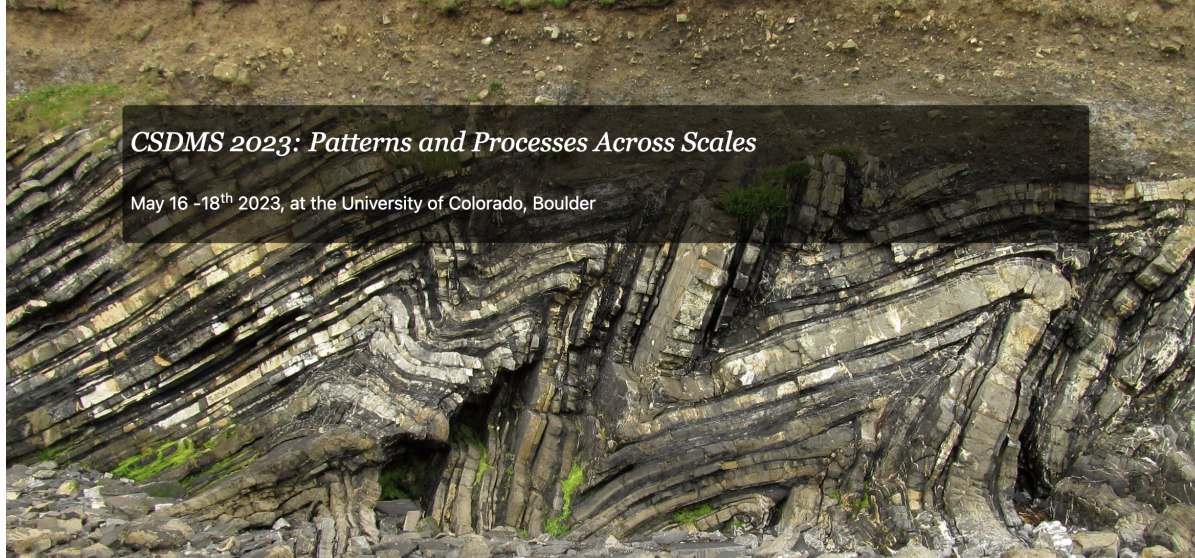
students, postdoctoral fellows, researchers, and faculty. ESPIn is designed to help participants advance their research in earth and planetary surface processes by teaching skills in numerical modeling, in modern, collaborative, scientific software development, and in the use of open source community cyberinfrastructure. A mix of experienced scientists, visiting faculty, and research software engineers provide instruction.

ESPIn uses the [CSDMS Ivy](#) course material, with topics including:

- Project Jupyter
- Introduction to the Shell
- Text Editors and Development Environments
- The Anaconda Distribution
- Introduction to Version Control with Git and GitHub
- Basics of Python Programming
- Python Programming for ESP Scientists
- Landlab
- The Peramamodl Toolkit
- The Basic Model Interface
- The Python Modeling Toolkit
- High-Performance Computing
- Best Practices in Scientific Software Development

Students will also attend the CSDMS Annual Meeting, May 16-18, 2023 and be provided an opportunity to present their ESPIn team projects. Travel and subsistence support will be provided for all students. Limited stipend support will also be available to increase participation of underrepresented groups. [Application details for the 2023 ESPIn can be found here.](#) Important Dates:

- December 1: Application window opens
 - January 27: Application window closes
 - February 15: Notifications
 - May 8-15: ESPIn 2023
 - May 16-18: 2023 CSDMS Annual Meeting
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CSDMS 2023 Annual Meeting

Registration Opens in January!

Please join us for the CSDMS Annual Meeting, "***CSDMS 2023: Patterns and Processes Across Scales***", taking place May 16-18, 2023 in Boulder, Colorado. As always, there will be a great lineup of keynote talks and clinics! Lively poster sessions and breakout sessions/jams will provide a chance to meet with old and new friends, and learn about new tools and resources.

- **Student Modeler Competition** submission deadline is January 20th, 2023. [Submission requirements and additional details can be found here.](#)
- **Call for Clinic presentations!** Each year a variety of clinics are available for registered meeting attendees. If you would like to provide a clinic, [additional details and the submission form can be found here.](#) Deadline to submit is December 16th, 2022. Submitters will be notified of acceptance decisions by January 6th, 2023.
- A limited number of **Travel Scholarships** will be available and the deadline to apply is February 10th, 2023. Application information will be available in mid-January.

OpenEarthscope JupyterHub: frontier

We're excited to announce the third member of the OpenEarthscope JupyterHub family, frontier. With this Hub, users work with a CSDMS RSE to set up a powerful* computational resource in the cloud, occupying a middle ground between a personal computer and an HPC. Access to frontier is limited to a single user at a time, thus

allowing them to take full advantage of its compute power. The frontier Hub is ideal, for example, for generating multiple model runs to explore a parameter space.

For more information on the new frontier JupyterHub, as well as its siblings lab and jupyter, please visit the [JupyterHub page](#) on the CSDMS wiki.

*64 CPUs and 128 GB memory, no problem!

New Landlab Component - BedrockLandslider

The new BedrockLandslider component computes stochastic deep-seated landsliding and landslide-derived sediment runout. The component was designed as part of the HyLands model (Hybrid landscape evolution model) which is now fully operational in Landlab. HyLands is designed to study the impact of landslides on large scale topographical evolution and sediment dynamics. If you want to learn more, check out our recent paper (<https://doi.org/10.1029/2022JF006745>). [Tutorials on the BedrockLandslider and HyLands can be found here.](#)

You're Invited - CSDMS at AGU!

Community Members are cordially invited to help kick-off the new 5-year CSDMS mission with a community gathering at the [Fatpour Tap Works](#) from 4-6PM on



Tuesday, December 13th, 2022 ([2206 S. Indiana Ave, Chicago](#) - adjacent to the convention center). Hear a quick update on the latest tools and resources, meet the CSDMS Integration Facility team, and network with old and new friends. Complementary food and beverages will be provided!

OpenEarthscope 2023 Summer Visiting Scholar Program

The application window is now open for graduate students who are interested in attending the 6-8 week summer visiting scholar program at the CSDMS Integration Facility at the University of Colorado, Boulder. Selected students will be working on their own research and will benefit from mentoring with the CSDMS Research Software Engineers and faculty/staff. Our first cohort in 2022 was a resounding success and we hope to make the 2023 program even more beneficial for your research progress. We anticipate 2-4 students will be selected for the 2023 program. In addition to proximity to the CSDMS Software Engineers and other team members, the Integration Facility can provide the

following support:

Student

Domestic travel support and lodging for up to 60 days in Boulder.

Stipend based on CU GRA rates @100% for summer semester (\$5,300 per month)

Advisor

Domestic travel support and lodging for a 7-day trip to Boulder (including per diem and ground transportation) to work collaboratively with CSDMS and the student.

Priority will be given to students that have computational projects that:

- Are "shovel ready".
- Will result in a product, such as a publication, a conference presentation, a new model component, an educational tutorial, etc.

To apply, please send an email to csdms@colorado.edu by February 10, 2023 with your name, brief description of your future goals, description of the specific project that could benefit from CSDMS Integration Facility support and any resulting products proposed. Additionally, we'll need approval from your advisor to participate in the program (this can be in the form of an attached letter or email).

We're excited to work with you and we look forward to chatting about how the CSDMS Integration Facility can most usefully contribute to your research this summer (or in a future summer)!

Community Member News

We are pleased to announce that [**Paola Passalacqua**](#), Associate Professor, Department of Civil, Architectural and Environmental Engineering at the University of Texas, Austin, has agreed to serve as the CSDMS Steering Committee Chair. Paola previously served as a Steering Committee Member from 2020 - 2022.



New Terrestrial Working Group Co-Chair, [Andrew Wickert](#), Associate Professor, Department of Earth and Environmental Sciences at the University of Minnesota, was elected to the post earlier this month.

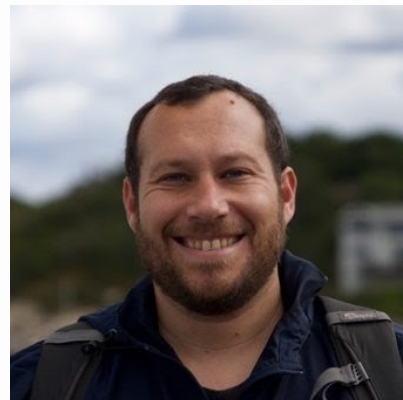
Andy's research focuses on the growth and decay of ice sheets and glaciers and their interactions with climate, dynamics of river systems, global sea level variability, and modern hydrologic and Earth-surface processes



[Alejandra Geiger-Ortiz](#), Assistant Professor of Geology at Colby College, has been elected to a 3-year term as Coastal Working Group Co-Chair. Aleja's current research focuses on the ecogeomorphic evolution of coastal landscapes.



CSDMS is also happy to announce that [Anthony Castronova](#), Senior Research Hydrologist at the Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI) has agreed to serve as the Hydrology Focus Research Group Chair. We're looking forward to strengthening ties with CUAHSI!



[Wolfgang Bangerth](#), Professor, Department of Mathematics at Colorado State University, has agreed to serve as Co-Chair of the Geodynamics Focus Research Group. He is the creator/principal developer of ASPECT (software used for the simulation of mantle convection and long-term tectonics).

[Todd Swannack](#) has been appointed as the Ecosystem Dynamics Focus Research Group Chair. He currently serves as the lead for the US Army Corps of Engineers, Integrated Ecological Modeling Team, which develops and applies coupled ecological and engineering models for the Engineering With Nature Initiative. Todd is also Adjunct Faculty at Texas State University, Department of Biology.



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