CSDMS Annual Meeting registration now open! CSDMS Newsletter - January 2023

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ON THE SURFACE

CSDMS Newsletter
January 2023

Join CSDMS

CSDMS 2023 Annual Meeting

Registration Now Open!!

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.

- A limited number of **Travel Scholarships** will be available and the deadline to apply is February 10th, 2023. Application information here:https://csdms.colorado.edu/wiki/Form:Annualmeeting2023.

CSDMS Spring Webinar Series

Register Now!

Please join us for the CSDMS 2023 Spring Webinar Series. Registration is required and link/detail are provided below. First up is:

Publishing Transparent and Reproducible Computational Research with Whole Tale

March 8th, 2023 @ 10:00AM MST

Craig Willis, National Center for Supercomputing Applications, University of Illinois, Urbana-Champaign

Research communities and peer-review journals are increasingly requiring authors to make available the code and data behind computational results reported in published studies. The Whole Tale platform is an open-access and open source system designed to enable researchers to package and archive their code, data, computational workflow, and information about the computational environment to better enable others to assess and repeat their results. During this webinar, we will introduce participants to the concepts of computational reproducibility and transparency and demonstrate core features of the platform.

REGISTER

WaveWatch 3 - New Data Component Release

CSDMS has just released a data component for community member usage! CSDMS data components allow models to seamlessly communicate with data as well as with other models. Applied to data, the BMI acts as a common hub that connects spokes to the many data formats within the earth sciences. See a complete list of data

components currently available here.

The WaveWatchIII data component provides access to the WAVEWATCHIII hindcast and reanalysis archives, which contain global wind and wave data over the last 30 years on a 3 hourly time step. The WaveWatch3 data component can download the datasets and wraps them with a Basic Model Interface (BMI).

Source: https://github.com/csdms/bmi-wavewatch3
Documentation: https://bmi-wavewatch3.readthedocs.io/
PyMT: https://github.com/pymt-lab/pymt_wavewatch3

Landlab Component: CarbonateProducer

CarbonateProducer is a new component that models the growth of a submarine carbonate platform, using the depth-dependent growth function of Bosscher & Schlager (1992). The accompanying tutorial notebook illustrates how to use the component, as well as how to combine it with Landlab's layer-management utilities to track chronostratigraphy. See all Landlab components here.

FramedVoronoiGrid

Thanks to Sebastien Lenard for developing a new grid type! This inherited class implements an irregular 2D grid with Voronoi Delaunay cells and irregular patches. It is a special type of VoronoiDelaunayGrid grid in which the initial set of points is arranged in a fixed lattice (e.g. like a RasterModelGrid), named here "layout", and the core points are then moved a random distance from their initial positions, bounded by a user-supplied threshold. The grid setup is similar to the standard type used by the CHILD landscape evolution model.

Office Hours with a CSDMS RSE and Newly Launched Community Forum

With the start of 2023, we'd like to announce two new services at CSDMS: the Forum (https://github.com/csdms/welcomes/discussions) and Office Hours (https://csdms.colorado.edu/wiki/OfficeHours). Check the links to learn more!

OpenEarthscape 2023 Summer Visiting Scholar Program

Application deadline is February 15th! The Summer Visiting Scholar Program is

open to graduate students interested in spending 6-8 weeks 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 15, 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)!

Earth Surface Processes Institute (ESPIn)

Application deadline tomorrow! **ESPIn 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 (ESPIn) 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 Permamodel 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:

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

NSF Geosciences Open Science Ecosystems Program

New funding program announcement from NSF: "In alignment with the 2023 Federal Year of Open Science, the NSF Directorate for Geosciences (GEO) recently announced a new funding opportunity, the Geosciences Open Science Ecosystem (GEO OSE). The GEO OSE program seeks to support sustainable and networked open science activities to foster an ecosystem of inclusive access to data, physical

collections, software, advanced computing, and other resources toward advancing research and education in the geosciences.

The purpose of this support is to broadly enable geoscientists to leverage expanding information resources and computing capabilities to address interdisciplinary grand challenge research questions at the forefront of the geosciences. Proposals to the GEO OSE program solicitation (NSF 23-534) are due March 16, 2023. Two tracks of support are available based on the size and scope of expected efforts. Track 1 will support smaller-scale activities to advance early stage GEO OSE activities, with funding provided for 2 years with a maximum budget size of $400,000 per project. Track 2 will support larger-scale activities, with funding provided for 3 years with budget size commensurate with the size and scope of the project up to about $1,600,000. Learn more on the GEO OSE program page

NSF informational webinar On Friday, January 20 at 1pm (EST), this webinar will review the new GEO OSE solicitation (NSF 23-534) and provide time for Q&A. Register in advance for this webinar".

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