



EOS IN THE NEWS



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KUDOS AND CONGRATULATIONS

Kudos to Jimmy Raeder, professor emeritus from our Space Science Center, who was elected to the [Sigma Xi Scientific Research Honor Society](#). Congrats, Jimmy!

Congratulations to Michael Chambers, who was appointed as a Research Associate Professor in the School of Marine Science and Ocean Engineering effective January 10. Michael will be a key contributor to the Sustainable Seafood Center as he grows his aquaculture research program, strengthens our industry engagement, and builds credit and non-credit aquaculture training. He will continue to support New Hampshire Sea Grant's and Extension's aquaculture priorities. Well done, Michael!

EVENTS

[UNH Blue Economy Sandpit](#)

January 19, 1:00 - 4:00 pm

Lean more about Blue Economy-related research and resources at UNH with direct access to UNH professors, researchers, and industry experts. This online event will provide you with an opportunity to network and collaborate with UNH researchers in aquaculture systems engineering, permitting standards and environmental monitoring, composite materials and manufacturing, marine energy and powering the blue economy, and more.

ARCHIVED SEMINAR

[Behavioral Responses to Anthropogenic Noise in a Keystone Species](#)

Speaker: Graeme Shannon, School of Natural Resources, Bangor University
Part of the CARE Environmental Acoustics Seminar Series

CALL FOR ENTRIES: ASTROPHOTOGRAPHY / ASTRO ART EXHIBITION

The Award-Winning Art Center in Dover, New Hampshire announces a [Call for Entries](#) to a juried astrophotography and astro-art competition and exhibition featuring images of celestial objects. Submissions are due by March 19, 2022. This event will be juried by Astronomer and University of New Hampshire Observatory Director John S. Gianforte. Questions should be directed to John at john.gianforte@unh.edu.

CONFERENCE FUNDING AVAILABLE FOR STUDENT RESEARCHERS

Each year, EOS raises funds during The (603) Challenge to support our student researchers who attend professional conferences to present their work. These funds can cover travel and/or registration and are applicable for both in-person and virtual conferences. Please contact [Rebecca Irelan](#) to apply for funding.

WELCOMES

EOS recently welcomed two new staff members:

Paula Kozlowski is the new Administrative Coordinator for EOS in 305 Morse Hall. She was formerly the Executive Assistant to the Director of the Cambridge Public Libraries and has significant experience in process development, instructional design and technical writing. A little about Paula: She is passionately Canadian, an avid reader, a (not-so-recent) traveler, and an animal- and nature-lover.

Holly Hanford Oliver is working (remotely) as our part-time Digital Design and Communications Specialist. Holly has spent many years working with the Museum of Science in Boston to design their promotional material for upcoming exhibits and the Omni Theater. She is a self-professed science nerd, having previously volunteered with the Coastal Research Volunteers conducting stream surveys. Welcome aboard, Paula and Holly!

PASSING

We are saddened to report that Professor Robert Harriss passed away on December 24, 2021, at his home in Boulder, Colorado. He was 80 years old. Harriss came to UNH in 1988 as a Professor in EOS and in the Department of Earth Sciences. His arrival at UNH contributed to the rapid growth of the Complex Systems Research Center (now the ESRC) and EOS in the years around 1990. Among his many legacies, Harriss had a major impact on graduate students in EOS who worked on a wide range of research projects. He left UNH in 1994 to become the Director of the Sciences Division of NASA's Office of Mission to Planet Earth. A longer tribute about Harriss's impact on EOS and NASA is forthcoming.

Please send any news items or suggestions for future Convergence content to Rebecca Irelan at rebecca.irelan@unh.edu.

Convergence is produced by the [Institute for the Study of Earth, Oceans, and Space](#).

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Nicole, here is your UNH lookup ID for your reference: **8-10224982**

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9 Edgewood Road
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Ocean Mapping Honor

John Hughes Clarke inducted into Hydrographer Hall of Fame

Friday, January 7, 2022

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John Hughes Clarke, professor of Earth sciences and ocean engineering in UNH's Center for [Coastal and Ocean Mapping/Joint Hydrographic Center](#), has been inducted into the Hydrographer Hall of Fame class of 2021. Hughes Clarke is one of four scientists who received this distinguished honor from The Hydrographic Society of America (THSOA).

Hydrography is the science that measures and describes the physical features of bodies of water. THSOA has bestowed this award on Hughes Clarke for his "tremendous history of innovation in ocean mapping," as well as the myriad technical papers he has authored and the numerous hydrographers he has taught over the years.

"This is a very well-deserved honor for John who has for years been at the forefront of the development of new tools and innovative approaches to hydrographic science," says Larry Mayer, director for CCOM. "He has used his deep understanding of the complexities of ocean mapping to create pragmatic solutions, and his long legacy of training and teaching has inspired many others in the field."

Hughes Clarke has spent the last three decades of his career focused primarily on ocean mapping and marine sediment transport in deep waters. His current research within CCOM multi-beam echosounder mapping research, which helps to support the goals of [NOAA's Office of Coast Survey](#). In addition to his distinguished research career, Hughes Clarke also teaches ocean mapping classes at UNH.

The hall of fame was created by THSOA to honor hydrographers who have had distinguished careers, contributed to the advancement of hydrographic science and/or provided exemplary service to the society. Hughes Clarke joins Mayer and Andy Armstrong, NOAA co-director of CCOM/JHC in the hall of fame.

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FACULTY EXCELLENCE



University of New Hampshire

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Predicting Future Floods

UNH research improves snowmelt models for a changing climate

Tuesday, December 7, 2021





JENNIFER

JACOBS, PROFESSOR OF CIVIL AND ENVIRONMENTAL ENGINEERING AND RESEARCHER IN THE INSTITUTE FOR THE STUDY OF EARTH, OCEANS, AND SPACE. [WATCH](#) A VIDEO ABOUT HER RESEARCH. PHOTO BY JEREMY GASOWSKI.

As our climate changes, so does where precipitation falls, whether it's rain or snow and how it melts. By updating projected snowmelt flooding models, a new study from UNH aims to better understand — and help prepare for — the effects of future floods on infrastructure and vulnerable water resources.

“Estimation of future floods can be a tricky business, yet it is important information for those planning future infrastructure,” says [Jennifer Jacobs](#), professor of civil and environmental engineering and an author of the [study](#), published recently in the journal Geophysical Research Letters. “For instance, if a region primarily has floods occurring during the winter, then this work could really help build infrastructure that can handle those future conditions. And, if the floods are decreasing, then the design values should also decrease rather than over design.”

“Estimation of future floods can be a tricky business, yet it is important information for those planning future infrastructure.”

The study, led by Jacobs’ former Ph.D. student [Eunsang Cho](#) ‘20G, found that by the late 21st century snowmelt could decrease over the continental U.S. and southern Canada but increase in Alaska and northern Canada. In California and the Pacific Northwest, there is a predicted increase in runoff despite a decrease in snowmelt. These projected changes, say the researchers, could trigger larger flooding vulnerabilities that cause major societal and economic consequences, including costly infrastructure failures. Their findings could be helpful for water resources managers, engineering designers and the general public in Northern California, the Pacific Northwest, Alaska and Canada.

Examining historical maps, regional climate model simulations and previous studies, the researchers found that in the West Coast mountain areas, such as Northern California and the Pacific Northwest, there could be greater risk of rain-on-snow flooding because these areas are predicted to warm and produce more rain. This could increase the melting of any existing snowpack and lead to larger runoff potential, increasing flooding risk. But this differed in extreme cold regions like Alaska and northern Canada, where warmer temperatures could increase the opportunity for moisture that could likely lead to more winter precipitation like snow.

“These findings can be important in helping to develop or modify federal and state governments’ long-term policies for climate adaptation,” says Cho, now postdoctoral researcher at NASA’s Goddard Space Flight Center. “For example, the current U.S. government standards for water-related infrastructure design are based on liquid precipitation data with very limited guidance on snow or snowmelt information.”

The researchers point out that certain infrastructure policies, such as the relicensing of dams, depend on information about extreme weather conditions. This information can help engineers design infrastructure not based on past conditions but to anticipate future conditions. In their [previous research](#), Jacobs and Cho created a map that accounts for snowmelt across the continental U.S. They say this information is already being used by the state of California in their relicensing process.

[Rachel McCrary](#), project scientist at the National Center for Atmospheric Research, also contributed to this study. This research was funded by NASA’s Applied Sciences Water Resources Program (grant numbers NNX15AC47G and NNX16AN34G) and the U.S. Department of Energy’s Office of Biological and Environmental Research program (grant numbers DE-SC0016605 and DE-SC0016438).

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RESEARCH



University of New Hampshire

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