

Ice Sheets: Byrd Polar and Climate Outreach Newsletter – Fall 2016

Greetings,

I am happy to announce that Education and Outreach and Polar Meteorology have received funding from the National Science Foundation to develop a tool for informal learning environments that allows individuals to visualize atmospheric and oceanic conditions. Titled Fluid Earth Viewer (or FEVer for short), the tool will exist online, use an intuitive interface and accessible language, and allow multiple data sets to be explored simultaneously over large geographic areas. Prototyping and extensive field testing will precede development of the software code. The project will be led by a team of Jason Cervenec (Education and Outreach), Aaron Wilson (Polar Meteorology), Julien Nicolas (Polar Meteorology) and Jesse Fox (OSU's School of Communications).

Regards,

Jason Cervenec • cervenec.1@osu.edu

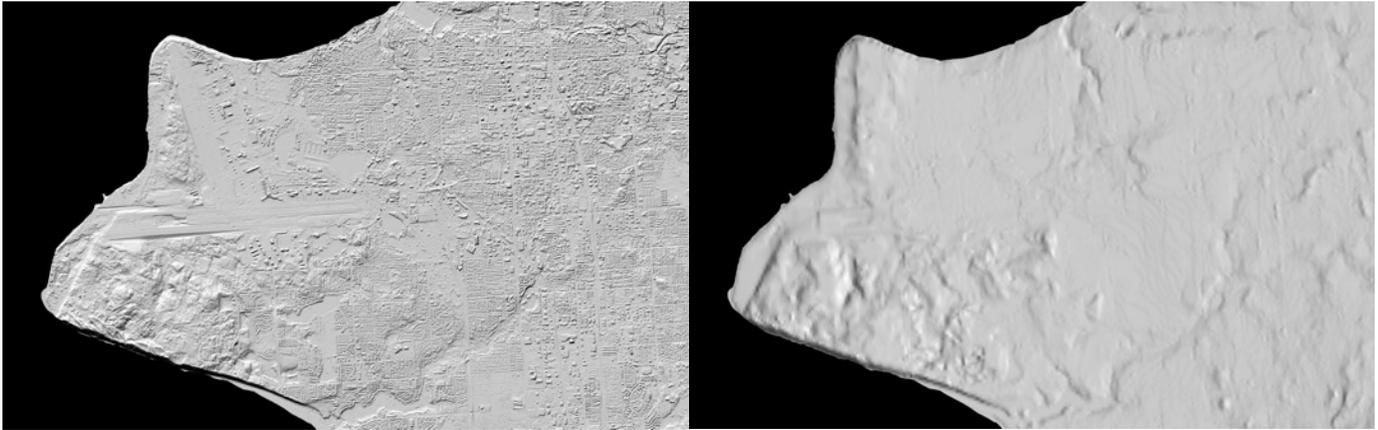
News & Information

High-Resolution, Three-Dimensional Topographic Maps of Alaska Released to the Public

The first ever high-resolution, three-dimensional topographic maps of Alaska have been released to the public less than a year after the announcement of a [White House Arctic initiative](#) in direct response to [President Obama's Executive Order](#) calling for enhanced coordination of national efforts in the Arctic. Arctic Digital Elevation Models (Arctic DEMs) show Alaska's terrain in detail never before seen in the Arctic region. High-resolution (2-meter) images were captured by Digital Globe commercial satellites and processed using software developed by the [Glacier Dynamics Group](#) at the [Byrd Polar and Climate Research Center](#) (BPCRC) under the direction of Principal Investigator (PI) and Professor [Dr. Ian Howat](#), with algorithms crafted by senior research associate [Dr. Myoung-Jong Noh](#). This project, an upscaling of a proof-of-concept deployed a few years ago, included working with the University of Illinois [Blue Waters](#) and [Ohio Supercomputing Center](#) to optimize code for high performance computing. The elevation maps and explorative aids are available to the public at <http://arcticdemapp.s3-website-us-west-2.amazonaws.com/explorer/>.

The National Science Foundation (NSF) and the National Geospatial-Intelligence Agency (NGA) led this collaborative and interdisciplinary effort among the defense, scientific, and technological communities. This project stands as a paradigm in modern science as an astonishing cooperative effort between private and public sectors. In addition to the NSF and the NGA, the U.S. Geological Survey, the state of Alaska, The Ohio State University, the University of Illinois, Cornell University, the Polar Geospatial Center at the University of Minnesota, and ESRI were all partners on this project. DEMs for the remainder of the Arctic will be available by the end of 2017.

The Glacier Dynamics Group at BPCRC is also funded to create high-resolution, three-dimensional topographic maps of Antarctica. Such work continues the legacy of BPCRC in mapping polar regions using remote sensing tools that began with PI [Ken Jezek](#) and the [RAMP](#) project to create a 1-kilometer resolution mosaic of Antarctica in the 1990's.



High-resolution DEM of Anchorage, Alaska resulting from the project (left) compared to the previous DEM of considerably lower resolution (right).

Exploring Statistical Analysis of Environmental Data • Byrd Bites Brown Bag Seminar
Presented by Kaiguang Zhao, Ph. D. • OSU's School of Environment & Natural Resources
Monday, October 24, 2016 at 12:00pm; BPCRC Learning Center, 177 Scott Hall

Abstract: Data underpins essentially all serious scientific pursuits. Letting data speak for itself is straightforward but not always easy or possible. Rather, models often come to the rescue to make sense of data, a process frequently perceived to be tricky and subjective. How to best analyze and interpret data with models - especially statistical models - can differ greatly from one scenario to another; this is particularly true because disciplines tend to have their own established modeling paradigms and researchers have freedom to exercise personal or even idiosyncratic beliefs to their individual intellectual depths. Such model-based inference also varies so as to tailor the specific nature of problems at hand – hypothesis-driven, question-based, or need-driven. This talk will reflect on my non-statistician views of the many aspects in tackling data with models (e.g., all models are wrong, modeling as an art, to explain or to predict, and common data phenomena such as collinearity). As a geospatial modeler, I will also go over several case studies exploring various ways to leverage statistical analytics for problems such as malaria risk assessment, mapping of ecosystem dynamics from satellite, Bayesian calibration of hydrological models, niching modeling, and climate impacts on species distribution. The purpose of this talk is not to inform best modeling practice but rather to encourage the exploration of data analytic power for environmental applications.

Short Film on the Guliya Expedition Released

The short film [Guliya](#), created by Pam Theodotou with extensive field footage captured by Giuliano Bertagna, was screened at the Ohio Peace Short Film Festival in June 2016. Pam, the BPCRC media specialist, created this piece documenting the recent expedition to China led by Lonnie Thompson and Yao Tandong. The début of this new festival in Columbus was made possible by the cooperation of the Ohio State Mershon Center for International Security Studies, the Columbus Moving Image Art Review, Ohio States Film Studies program, and the Gateway Film Center.

H.S.H. Prince Albert II of Monaco Visits Byrd Center

On Wednesday, August 31, H.S.H. Prince Albert II of Monaco visited The Ohio State University in hopes of enhancing cooperation and collaboration between the university and his foundation. Prince Albert made a number of stops on his visit, including the Byrd Center. During his one-hour visit to Scott Hall, he was able to tour the Polar Rock Repository, sediment core lab, and ice core freezers in addition to hearing about POLENET and student projects to develop low-cost environmental monitoring equipment.

Later in the day, the Prince took part in a panel discussion with OSU President Michael Drake and Provost Bruce McPheron at Mershon Auditorium. Prince Albert was very impressed with Ohio State's sustainability efforts towards the development of an environmentally friendly campus. Looking toward the future, Prince Albert made clear that actions by the next generation are essential. He emphasized to students how very crucial their rolls in climate mitigation will be in the near future.

Thank you to Anne Grunow, Stephanie Konfal, Geoff Dipre, Aubrey Hillman, Lonnie Thompson, Ellen Mosley-Thompson, Ryan Cummings, Andrew Hutchman, Lynn Everett, Charmaine Koch, Lynn Lay, and Michele Cook for helping with this high-profile visit.



H.S.H Prince Albert II of Monaco visiting the Polar Rock Repository and learning about POLENET(upper left), viewing an ice core in the cutting room (upper right), examining a lab core in the sediment lab (lower right), and discussing undergraduate research projects with students (lower left).

Emmy for Byrd

WOSU Public Media received an astonishing five Emmy Awards at the 52nd Annual Ohio Valley Regional Emmy Awards this summer. One of these awards went to the film [*Admiral Byrd: Forged on Ice*](#), an original documentary that illuminates the life of Richard E. Byrd.

This hour-long showcase of Admiral Byrd's interesting life is captivating from start to finish. It describes Byrd's legacy, formed from ambition, courage, and dedication. The Byrd Polar and Climate Research Center calls forth his name, bringing his influence and legacy to the attention of mode. Lynn Lay in the Goldthwait Polar Library has a copy of the film DVD which can be borrowed.

Multimedia

Did you miss a seminar? Would you like to see recent field videos? It might be online...

A number of our summer programs were recorded and are available [online](#). We invite you to view the programs, share them with others, or include them as part of a course.

Online History Corner and Polar Timeline

Lynn Lay and Laura Kissel have written a number of articles answering commonly asked history questions that can be found under the [History Corner](#) section of the BPCRC website. In addition, the [Polar Timeline](#) that Lynn and Laura created a number of years ago was recently updated to include new content.

Upcoming Programs & Events

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|---------------------|---|
| September 21 | Byrd Center September Public Tour
BPCRC Auditorium (240 Scott Hall); 5:30 to 7:00 pm |
| October 6 | Byrd Bites Brown Bag Seminar – IT Update and Online IT Request System presented by Tom Kassebaum
BPCRC Learning Center, 177 Scott Hall; Noon |
| October 21 | GIS Day
Research Commons, 18 th Avenue Library; 9 a.m. to 1 p.m. |
| October 24 | Byrd Bites Brown Bag Seminar – <i>Exploring Statistical Analysis of Environmental Data</i> presented by Kaiguang Zhao, School of Environment and Natural Resources at OSU
BPCRC Learning Center, 177 Scott Hall; Noon |
| October 26 | Byrd Center October Public Tour
BPCRC Auditorium (240 Scott Hall); 5:30 to 7:00 pm |
| November 8 | Byrd Bites Brown Bag Seminar by George Grant, BPCRC Graduate Student
BPCRC Learning Center, 177 Scott Hall; Noon |
| November 16 | Byrd Center November Public Tour
BPCRC Auditorium (240 Scott Hall); 5:30 to 7:00 pm |

Scheduled Byrd Bites Brown Bags

We are currently looking for Byrd Bites talks. This is a friendly environment to explain your research, describe recent field experiences, or practice for a conference talk. E-mail Jason (cervenec.1@osu.edu) if you would like to give a talk.

New to the Center

Demie Huffman

Demie Huffman is from Granville, Ohio. Demie graduated with a B.A. in Chemistry with a minor in Creative Writing from Goucher College, and is a part of the Environmental Science Graduate Program at Ohio State for her Master's degree. Her research at Byrd will focus on studying black carbon emissions in ice core samples. As a part of her creative writing minor, she started - and is still working on - writing a young adult science fiction novel. Demie will be working with Dr. Joel Barker.

Andrew Hutchman

Andrew is a graduate of East Liverpool High School Class of 2014. He is currently a third year student studying Atmospheric Sciences and Civil Engineering at The Ohio State University. Andrew is interested primarily in research that combines his two areas of interest, weather and engineering. For example, his interests include working with urban heat island mitigation through smarter city planning and structural design of roadways and structures to withstand large storms and natural disasters. In his free time, Andrew loves traveling and minimalist backpacking/camping. He is also on the Ohio State bowling team. Andrew will be working with Jason Cervenc in Education and Outreach.



Steven Quiring

Steven Quiring is a new faculty member in Geography from Winnipeg, Manitoba, Canada. Steven is a climatologist with research interests in hydroclimatology, synoptic climatology and applying climate data to solve societally relevant problems (climate data analytics). His current research projects are concentrated in two areas. The first is improving our understanding of the land-atmosphere interactions and applying this information to improve drought and seasonal climate predictability. The second is modeling the impact of weather events on power infrastructure. A lot of his past work has focused on the impacts of hurricanes on the power system and now is expanding his focus to look at thunderstorms and winter storms. Steven enjoys playing hockey and loves watching football. He and his wife Shona have been married for 17 years and have a 3-year-old daughter.



Emily Sambuco

Emily Sambuco is from Pickerington, Ohio. Emily is a senior this year at Ohio State, majoring in Atmospheric Science and minoring in Environmental Science. She has worked in the Office of Responsible Research Practices at OSU for the first 3 years of her undergraduate studies. Emily currently volunteers in Dr. Andrea Grottoli's lab, where she is able to help with Earth Science research regarding corals and climate change. Emily is also an Executive Board member of Meteorology Club at Ohio State, which allows her to plan and be part of many educational events regarding weather and climate. She is very interested in pursuing a career in education and outreach. After graduating, Emily hopes to work with various government agencies to better educate the public on issues regarding climate change. In her free time, Emily enjoys singing, as she has been a part of Women's Glee Club for the past few years. She also enjoys the outdoors and staying active. In her free time, Emily loves to run, hike and go camping. Emily will be working with Jason Cervenc in Education and Outreach.



Gabriel Zeballos-Castellon

Gabriel Zeballos-Castellon is from La Paz, Bolivia. Gabriel is deeply interested in the Andes and the impact that global and climate change has upon the ecosystems and society. In college, Gabriel focused his research first on environmental quality using plant biomonitoring (BS in Biology), and later on tropical alpine landscapes change, examining the relationships between glacier retreat and the associated downstream wetlands using satellite imagery (BS in Geography). He is currently a graduate student in the Department of Geography, and his interest is to enhance the understanding of wetlands in tropical alpine ecosystems. Gabriel is usually curious for diverse knowledge areas, but very often he likes to jump out of the desk and dance a little tango or play indoor or outdoor sports such as raquetball or soccer. Gabriel will be working with Dr. Bryan Mark.



Zhi-Ping Zhong

Zhi-Ping Zhong is from Ruijin city, Jiangxi Province, China. Zhiping got his PhD in Microbiology in the Institute of Microbiology, Chinese Academy of Sciences, where he focused on microbial ecology and bacterial taxonomy. He is interested in isolating and identifying bacterial strains, exploring the uncultured microorganisms, and investigating the microbial community structure, function and dynamics in the environment. He joined BPCRC to study microbial and viral ecology in the ice cores from selected depths deposited ~1,000 to ~1,000,000 years ago, which might help provide a window into how microbial life has changed over tens to hundreds of thousands of years. Zhi-Ping will be working with Dr. Lonnie Thompson. In his free time, Zhi-Ping likes singing, table tennis and billiards.



Newsletter

If you would like to add announcements, information, or photos to the newsletter, please e-mail them to cervenec.1@osu.edu.

IMPENDING DEADLINES...

NSF

[Arctic Research Opportunities](#) • 16-595

[Graduate Research Fellowship Program \(GRFP\)](#) • 16-588

[Improving Undergraduate STEM Education](#) • 16-584 **

[Advancing Informal STEM Learning](#) • 15-593 **

[Paleo Perspectives on Climate Change \(P2C2\)](#) • 13-576

***There is a [Dear Colleague Letter](#) associated with these two calls in support of engaging students and the public in polar research.*

Due: Anytime

Due: 10/24/2016

(geoscience deadline)

Due: 10/11/2016

(Pathways into Geoscience deadline)

Due: 11/8/2016

Due: 10/17/2016

As always, you can check out funding sources any time at <http://research.osu.edu/researchers/funding/>.