

space missions over the last 50 years for the CNES, and other agencies (NASA, JAXA, ESA, IKI). It is also involved in the instrumentation of the future Extremely Large Telescope of the European Southern Observatory (ESO).

LESIA - Paris Observatory



Our forests face existential threats from climate change. Our forests' future depends on our ability to help foresters and others who manage our forests to deeply integrate climate science into their work—both

helping forests to overcome climate change threats and to better slow climate change by trapping more carbon. The Northern Institute of Applied Climate Science has created the most cutting edge model for making this science-into-practice connection, and is partnering with American Forests to spread the NIACS approach as widely as possible.

Northern Institute of Applied Climate Science & American Forests

DataONE Data is diverse - spanning time, space, and disciplines as well as being generated at unprecedented rates. DataONE works to engage the community in creating solutions that enable data managers, librarians, researchers and others to leverage data in support of pressing ecological challenges. DataONE helps researchers address these challenges by providing a single search interface that allows discovery of content from an ever-growing collection of data repositories. In addition to simplifying data discovery, DataONE offers high quality resources for data management, including teaching materials, webinars and a database of best-practices, which help educators and librarians with training and improve methods for data sharing and management.

DataONE

RUTGERS The Department of Earth and Environmental Science, Rutgers University at Newark (DEES) conducts cutting edge from dynamic, urban to global research and is heavily invested in involving underrepresented minority (URM) students in Geosciences. Understanding the Earth processes is of utmost importance in the modern world. We offer curricula in environmental sciences, environmental geosciences, geoengineering and environmental sustainability and prepare our students for successful and rewarding careers and graduate studies. DEES' faculty have strengths in water, soil and air pollution and cutting-edge techniques to study them.

Students and faculty investigate phytoplankton physiology and biogeochemistry, geomicrobiology and astrobiology spanning spatial and temporal scales. Research and education emphasize practical applications, especially in the field. DEES offers rigorous courses that are comparable to the best in the country. Student research is an integral part of the learning experience and provides opportunities for enhanced understanding. Technical abilities and effective communication are emphasized in preparation for successful careers and graduate studies.

Department of Earth and Environmental Science, Rutgers University at Newark



As the frequency and severity of natural disasters

continue to increase worldwide—affecting more people than ever before—the need for countries to more effectively reduce disaster risk has become an urgent global priority. As an applied research center managed by the University of Hawaii, PDC is helping leaders around the world to address this priority through its powerful DisasterAWARE technology platform, scientific research, information, and advanced practices in disaster management. Our work focuses on some of the most hazard-prone areas of the world. We help governmental and nongovernmental organizations and collaborate with experts from across disciplines to tackle the biggest challenges in disaster management.

Pacific Disaster Center



The earth is comprised of complex and

interconnected systems. Today we know that human activities are generating changes to those systems that goes well beyond natural



variability. In the Department of Earth System and Policy we study the planets' different systems — hydrosphere, lithosphere, atmosphere, biosphere and anthroposphere — as an integrated Earth system for evaluating the effect and consequences of human-driven change and be part of the solutions. Through our multidisciplinary approach to teaching and

research we lead the way in solving complex human-driven changes affecting the sustainability of the earth system including the capacity to shape environmental policy and integrate environmental and resource economics. We believe that those with the research capability and/or technical skills and expertise to address today's environmental and sustainability challenges with this holistic view, will have the greatest impact in defining and shaping tomorrow's positive and sustainable changes.

Department of Earth System Science and Policy, University of North Dakota

UMBC The GES Department serves as vital scholarly "connective tissue"

between STEM disciplines and social sciences/humanities.

Research interests among current GES faculty span a broad range of topics in earth systems science, ecosystem science, human geography and urban geography, and human dimensions of global change, with application of geospatial technology to research questions across all areas of interest. The film will provide examples of GES faculty and students conducting interdisciplinary collaborative work of local (e.g. urban Baltimore), regional (e.g. the Chesapeake Bay watershed) and international scope (e.g. Costa Rica forestry and agriculture).

Department of Geography and Environmental Systems, University of Maryland Baltimore County



The University of Wisconsin-Madison Space Science and Engineering Center is internationally recognized for its research into new observations of the Earth's atmosphere, oceans and land surface to improve weather and air quality forecasts and understand climate trends.

Space Science and Engineering Center (SSEC), University of Wisconsin-Madison



NASA Goddard Space Flight Center's Heliophysics Science Division is the only organization on the planet that brings together a broad study of the heliophysics system from the sun to the edge of heliosphere. The work of HSD

protects space assets (robotic and human spaceflight), it supports sister agencies such as NOAA, and guides the understanding of the very formation of life in the solar system and extrasolar systems.

NASA Goddard Space Flight Center - Heliophysics Science Division

AGU 100

ADVANCING EARTH AND SPACE SCIENCE

TV News

AGU TV is in Washington, DC

WebsEdge will be producing AGU TV for the second time at the AGU 2018 Fall Meeting. The program provides a unique platform to highlight the latest research and emerging trends within the fields of Earth and space science and engage people in these issues beyond the meeting.

AGU TV 2018 Highlights



Geophysics Department, GFZ Helmholtz Centre Potsdam cover Earth science geophysics to study the dynamic behaviour of the solid Earth: from its

surface to the core, and from long-term processes to rapid events. The department stretches its research to the edges of the magnetosphere and interaction with solar wind and radiation. In the Geophysics Department at GFZ we host, and combine, seismology and volcanology, geomagnetism and magnetosphere physics. We apply active seismic and electro/magnetic methods to near-surface exploration and structural imaging, as well as geodynamic modelling. This enables research starting from observation, to process understanding via modelling and



prediction, to hazard determination and early warning. In addition, we operate the global seismological broadband network GEOfON, delivering rapid earthquake information and interactive seismic hazard maps.

Geophysics Department, GFZ Helmholtz Centre Potsdam



The IceCube Neutrino Observatory is the first detector of its kind, designed to observe the cosmos from deep within the South Pole ice. Encompassing a cubic kilometer of ice,



IceCube searches for nearly massless subatomic particles called neutrinos. These high-energy astronomical messengers provide information to probe the most violent astrophysical sources: events like exploding stars, gamma-ray bursts, and cataclysmic phenomena involving black holes and neutron stars. APS TV talked to scientists at the IceCube Neutrino Observatory at the University of Wisconsin-Madison to understand just how this massive detector came to be.

IceCube Neutrino Observatory at the University of Wisconsin-Madison



Cooperative Institute for Dynamic Earth Research

Founded in 2003, CIDER is an institute without walls, funded from 2012 to 2018 by the Frontiers of Earth Systems Dynamics (FESD) program of NSF. Its centerpiece is a 4-6 week-long summer program, that brings together scientists across generations around a given theme. CIDER encourages sustained, in-depth interactions among participants, requiring them to spend significant time on-site. The summer program includes two weeks of lectures and tutorials, during which multi-disciplinary groups are formed around specific timely topics that emerge from discussions during lectures or social events.

Cooperative Institute for Dynamic Earth Research (CIDER)



The Colorado School of Mines is transforming its geophysics department to place greater emphasis on computation, allow more flexibility in educational tracks and to recognize the transition of our profession. We are teaming with the Mines hydrology program to create a first of its kind MS track in hydrogeophysics. Also we are partnering with the Humanitarian engineering program to create an innovative geophysics program designed to assist parts of the world that have major challenges but limited resources to manage them.

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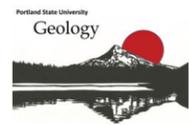
YouTube Channel: WebsEdgeEducation

Watch AGU TV around the conference venue and at the Marriott Marquis. AGU TV is produced by www.websedge.com



In an age of unprecedented spacecraft exploration of neighboring planets and revolutionary discoveries of distant worlds, the Weizmann Institute's Center for Planetary Science is in the thick of it. Using theoretical calculations, laboratory simulations, and innovative instruments on board a host of missions, our scientists are peering into new environments like never before.

Helen Kimmel Center for Planetary Science, Weizmann Institute of Science



The Department of Geology at Portland State University takes advantage of the region's spectacular landscapes in the Pacific Northwest to study problems of local, national, and international interest. PSU students and faculty work collaboratively with neighboring academic institutions, agencies, and community partners to address fundamental research questions with important applications. We provide a wide range of educational pathways and offer research opportunities to undergraduates and graduate students within the MS Geology program and doctoral students in the cross- and interdisciplinary Earth, Environment and Society (EES) PhD program. Student success is fostered by an intimate departmental climate, faculty access and student-focused research.

Department of Geology, Portland State University



The harsh and extreme environment, sparse infrastructure and isolated communities are a challenge when working in the Arctic. The results, however, are very robust engineering solutions tailored for extreme conditions. DTU combines knowledge and expertise across the relevant academic fields, as well as a strong presence in Greenland, to create solutions to deal with the consequences of a changing climate.

Technical University of Denmark - DTU Arctic



The National Science Foundation's

ambitious, 15-year EarthScope program examines the development and current structure of the North American continent with unprecedented resolution, using three observatories and thousands of seismic, GPS, and other instruments in the field. Hundreds of scientists have participated, using EarthScope's freely available data for research. Highlighted are a few of the important outcomes from

EarthScope: creating new, detailed, deep-earth images of our continent, helping us understand its current movement and changes; drilling deep into the San Andreas Fault, expanding our understanding of how fault zones function; and applying high-resolution GPS in surprising new ways to monitor groundwater and surface water, including landscape changes due to drought. After the EarthScope program officially ends, legacy products such as the Flyover Country app will feature EarthScope science to a broad audience. The EarthScope data will continue to be freely available for a new generation of Earth science researchers to plumb the depths of how the North American continent works.

EarthScope



The Bay Area Environmental Research Institute is a 501(c)(3) recognized non-profit established in 1993, with offices at NASA Ames Research Center. The Institute is dedicated to promoting and enabling scientific research, primarily in the fields of Earth Science, Astronomy, and Astrophysics.

BAER Institute provides complete and dedicated support for over 100 scientists, engineers and project staff, working across 35 different projects.

The Bay Area Environmental Research Institute (BAER)



The aim of HydroSciences Montpellier (HSM) is to quantify and predict how climate change and human activities affect water resources in the Mediterranean and tropical regions.

HSM is internationally known for its work on hydrosystems, including water pathways and resources. Researchers are investigating diverse issues such as contaminant fate, transformation and fluxes in human-impacted watersheds, metrology and hydro-climatic risks with projects around the world.

HydroSciences Montpellier (HSM)



The Frederick S. Pardee Center for the Study of the Longer-Range Future

The Frederick S. Pardee Center for the Study of the Longer-Range Future at Boston University is an interdisciplinary, solutions-oriented research center that seeks to understand the environmental, political, economic, social, and cultural forces that affect the human condition today and in the decades, to come. Through its post-doctoral associates and its seed grants to BU faculty, the Pardee Center leads



interdisciplinary research projects that have practical implications for forward-looking policy and decision-making. Through its Graduate Summer Fellows program – an intensive 10-week research and writing fellowship for BU master's and doctoral students – the Pardee Center trains future generations of interdisciplinary scholars.

The Frederick S. Pardee Center for the Study of the Longer-Range Future, Boston University



Rapid decrease in Arctic sea ice and significant environmental changes are one of the most drastic evidences of global warming. Better



understandings of the status, trends, and causes of the Arctic change and accurate future prediction are very important issues for not only Arctic but also global communities. Japan Agency for Marine-Earth Science and Technology (JAMSTEC) are conducting research and development (R&D) activities for better understanding of recent drastic changes and accurate future prediction on the Arctic environments. In this film, we introduce our R&D activities and facilities, such as R/V Mirai, Earth Simulator, etc.

Institute of Arctic Climate and Environment Research, Japan Agency for Marine-Earth Science and Technology



The Climate and Space Sciences and Engineering Department combines scientific, technological excellence and leadership to explore the Sun, the Earth, our solar system, and the space beyond. We use observations, modelling as well as theory to discover and explain phenomena that define our place in the universe also



addressing the pressing problems associated with global change. As part of the University of Michigan College of Engineering, we inspire our students to develop as intellectually curious, engaged citizens and use our knowledge to inform the public, stakeholders, and policy makers.

Climate and Space Sciences and Engineering Department, University of Michigan



Earthcube is a quick growing community of scientists across all geoscience domains, as well as geoinformatics researchers and data scientists. As a community-governed effort, EarthCube's goal is to enable geoscientists to tackle the challenges of understanding and predicting a complex and evolving solid Earth, hydrosphere, atmosphere, and space environment systems by democratizing, better integrating, and improving access to data.

EarthCube



The European Multidisciplinary Seafloor and water column Observatory (EMSO) aims to explore the oceans, to gain a better understanding of phenomena happening within and below them, and to explain the critical role that these phenomena play in the broader Earth systems. EMSO consists in a system of regional facilities placed at key sites around Europe, from North East to the Atlantic, through the Mediterranean to the Black Sea. Observatories are platforms equipped with multiple sensors, placed along the water column and on the seafloor. They constantly measure different biogeochemical and physical parameters that address natural hazards, climate change and marine ecosystems. EMSO offers data and services to a large and diverse group of users, from scientists and industries to institutions and policy makers. It is an extraordinary infrastructure to provide relevant information for defining environmental policies based on scientific data.

European Multidisciplinary Seafloor and water-column Observatory, European Research Infrastructure Consortium (EMSO-ERIC)



The Federal Ministry of Education and Research (BMBF) coordinates the national marine research

program "MARE:N - Coastal, Marine and Polar Research for Sustainability" under the umbrella of the framework programme "Research for Sustainable Development" (FONA). Published in 2016, MARE:N serves as the Federal Government's funding framework for coastal, marine and polar research in the coming decade. The central objective of MARE:N is to generate knowledge for the future of the seas and oceans and their role in the earth system, to assess human impacts and to develop solutions for their protection and sustainable use. Germany will host the kick-off Conference for the United Nations Decade of Ocean Science for Sustainable Development taking place from 2021 to 2030.

German Federal Ministry of Education and Research (BMBF)



The Center for Lithospheric Research, Czech Geological Survey has an integrated and multidisciplinary approach of continental research from field observations – mapping (geological and geophysical), sampling – laboratory determination of P-T and geochronological and mineral fabric data, geochemistry and analysis of geophysical signal (potential data – gravity and airborne magnetic) and paleomagnetism. This approach results in a large synthesis at the plate scale and allows assessment of the mechanical behaviour and rheological properties of the lithosphere during collisional and accretionary processes. In the interior of the Pangean system (future supercontinent) a new model of lower crustal flow is proposed allowing the redistribution of the lower plate underneath the upper plate at gigantic scales. We call this mechanism relamination and show how this material is coming to the asthenosphere and then relaminates beneath the Moho of the upper plate. We show how this material penetrates the upper plates in the form of translithospheric diapirs.

Center for Lithospheric Research, Czech Geological Survey



In the past century, our department made fundamental contributions ranging from the theory of plate tectonics, the circulation of mantle, the dynamics of ocean waves and the structure of the Solar System. The first Ph.D. granted to a woman in the US was to a Hopkins geologist, Florence Bascom and the department was one of the first to link traditional geology with planetary science and oceanography. In recent years the department has gone through a major

revitalization connecting its storied past to a bright future. Our faculty all seek to understand planets as interconnected systems, ones that are far more dynamic than previously understood.

Morton K. Blaustein Department of Earth and Planetary Science, John Hopkins University



Climate Change affects the Arctic more than anywhere else. An increase in temperature leads to fundamental changes to the Arctic ecosystem - from permafrost thaw, to changes in marine life and vegetation in the region. At Denmark's Aarhus University, the Department of Bioscience explores how climate change affects the processes on land, in the water and ice and in the air. As such they provide world leading expertise on diverse areas across climate ecosystem interactions, ecosystem health, as well as the environmental impacts of Arctic mineral and oil exploitation.

Aarhus University - Department of Bioscience



Qingdao National Laboratory for Marine Science and Technology (QNLML)

Qingdao National Laboratory for Marine Science and Technology (QNLML) is the first marine national laboratory in China. The research areas of QNLML include the ocean dynamic processes and climate change, benthic processes and gas resources, extreme environments and resources in deep sea and polar regions, evolution and protection of marine ecological environments, marine technologies and equipment and more. QNLML brings together teams from around the world to undertake original research projects and promote the open sharing of resources, with the goal of better understanding the oceans.

Qingdao National Laboratory for Marine Science and Technology (QNLML)



LESIA is one of the six scientific departments of the

Paris Observatory, with affiliations to PSL Research University; the National Center for Scientific Research (CNRS); Sorbonne University and University Paris-Diderot. LESIA specializes in instrumentation for astronomy, space and ground-based telescopes and radio astronomy. As one of the largest French laboratories for astrophysics, LESIA contributes to instruments for the ESA Solar Orbiter mission, NASA/MSL 2020 and many space missions (Bepi Colombo, Plato, Ariel, etc.). It has contributed to many other high-profile