July 2013 U.S. CLIVAR Newsgram
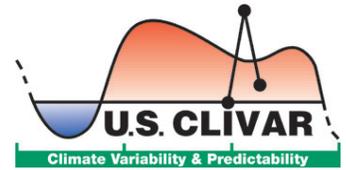
Please forward to interested colleagues. To manage your subscription to this newsgram, **visit this page**. To include an announcement in our next issue, contact **Jennifer Mays**. Follow U.S. CLIVAR on **Twitter**.

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5. WWRP/THORPEX-WCRP International Conference on Subseasonal to Seasonal Prediction
6. Joint 2014 AMS Atmospheric Radiation and Cloud Physics Conference
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8. WCRP-Conference for Latin America and the Caribbean: Developing, Linking, and Applying Climate Knowledge
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10. The Integrated Biogeochemistry and Ecosystem Research (IMBER) Open Science Conference
11. APEC Climate Symposium 2013 "Regional Cooperation on Drought Prediction Science to Support Disaster Preparedness and Management"
12. PICES 2013 Annual Meeting, "Communicating forecasts, uncertainty and consequences of ecosystem change"
13. Workshop on High-End Scenarios of Regional Sea Level Changes and their Uncertainties

cont.

Position Announcements

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2. Professor of Climate, MIT Department of Earth, Atmospheric and Planetary Sciences
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5. Biological/Chemical/Physical Oceanographer, Bermuda Institute of Ocean Sciences
6. Ocean/Ice Modeller, British Antarctic Survey
7. Postdoc/Project Scientist: Using Cloud Observations to Improve Climate Models, NOAA GFDL
8. Postdoctoral Position in Cloud-Radiation-Dynamics Interactions, JPL/Caltech
9. Postdoctoral Fellow in Computational/Geological, Berkeley Lab
10. Postdoctoral Fellows in Atmospheric Chemistry, MIT
11. Two Assistant Specialist Postdoc positions on MJO and Regional Climate Modeling, UC, Santa Barbara
12. Postdoc in Seasonal-to-interannual climate prediction, Institut Català de Ciències del Clima, Spain
13. Coupled wave-ocean-atmosphere-ice forecast Scienctist, Environment Canada
14. Several funded PhD positions in Canadian institutions, ArcTrain-Canada

Calendar of Upcoming Events
also see our online calendar

2013 ASP Researcher Colloquium "Carbon-Climate Connections in the Earth System"
August 6-10, 2013
Boulder, CO

AMS 15th Conference on Mesoscale Processes
August 6-9, 2013
Portland, OR

2013 Community Earth System Modeling Tutorial
August 12-16, 2013
NCAR, Boulder, CO

U. S. CLIVAR Extremes Workshop: Analyses, Dynamics, and Modeling of Large Scale Meteorological Patterns Associated with Extreme Temperature and Precipitation Events
August 20-22, 2013
Lawrence Berkeley Laboratory, Berkeley, CA

OMICS Group International Conference on Aquatic & Marine Biology (Oceanography-2013)
August 21-23, 2013
Miami, FL

11th International Conference on Paleoceanography (ICP 11)
September 1-6, 2013
Barcelona, Spain

WCRP VAMOS/CORDEX Workshop on Latin-America and Caribbean CORDEX LAC: Phase I-South America
September 11-13, 2013
Lima, Peru

2013 EUMETSAT Meteorological Satellite Conference & 19th AMS Satellite Meteorology, Oceanography, and Climatology Conference
September 16-20, 2013
Vienna, Austria

U.S. Ocean Acidification PI Meeting
September 18-20, 2013
Washington, DC

OCEANS '13 MTS/IEEE San Diego
September 23-26, 2013
San Diego, CA

DISCCRS VIII Interdisciplinary Climate Change Research Symposium
October 12-19, 2013
La Foret Conference and Retreat Center, CO

NOAA's 38th Climate Diagnostics and Prediction Workshop
October 21-25, 2013
College Park, MD

Announcements

1. U.S. CLIVAR Summit and US AMOC/UK RADID International Science Meetings

We are back in the office after hosting back-to-back meetings in earlier this month. We held our annual **U.S. CLIVAR Summit** in Annapolis this year. The meeting featured reports from our working groups, agency managers, and a full day of breakout sessions for our three panels.

The **2013 US AMOC/UK RAPID International Science Meeting** was held in Baltimore over two and a half days with plenary presentations from US AMOC and UK RAPID PIs, as well as other invited speakers. Presentations and poster covered current research on AMOC observations and dynamics on a range of timescales and climate impacts.

Abstracts and slides from most plenary presentations and posters will be available on the meeting agenda webpages in the new two weeks. Contact **Jennifer Mays** with any questions.

2. The Climate Historical Forecast Project Database Now Available

The Working Group on Seasonal to Interannual Prediction (WGSIP), in collaboration with the Centro de Investigaciones del Mar y la Atmósfera (CIMA) announce the availability of the CHFP dataset of seasonal hindcasts from leading seasonal forecast centres worldwide for research use. The CHFP database consists of data from retrospective predictions of the seasonal climate from year to year across recent decades and is available from this website: **http://chfps.cima.fcen.uba.ar/**

The database currently contains data from 13 systems and will continue to grow over coming years to serve as a quantitative record of progress in global seasonal forecasting capability.
The research community is encouraged to take advantage of this new and growing resource in their studies of the seasonal predictability of global climate in parallel to the CMIP database for longer term climate studies.

3. News from CLIVAR/ESA Scientific Consultation Workshop

The European Space Agency (ESA) plans to start an "Earth Observation" (EO) related scientific activity this year - referred here as "Ocean Heat Flux" to support the new CLIVAR research opportunity addressing the "**Consistency between Planetary Heat Balance and Ocean Heat storage**". The CLIVAR/ESA scientific consultation workshop provided an opportunity to the scientific community to further shape the ESA activity by gathering the scientific requirements in terms of EO data and products to support the new CLIVAR research opportunity, while building upon recent recommendations of CLIVAR GSOP-WHOI Workshop on Ocean Syntheses and Surface Flux Evaluation, and complementing existing activities such as **Seaflux**. The presentations from the workshop are now **available online**.

4. NRC Study Emerging Research Questions in the Arctic - Request for Input

The Committee on "Emerging Research Questions in the Arctic" of the National Research Council (NRC) is looking for assistance. This committee is charged to provide guidance on future research questions in the Arctic over the next 10-20 years, identifying the key scientific questions that are emerging (i.e., only now

becoming possible to ask or address) in different realms of Arctic science and exploring both disciplinary realms (e.g., marine, terrestrial, atmosphere, cryosphere, and social sciences) and cross cutting realms (e.g., integrated systems science and sustainability science).

To help accomplish these goals, the committee would like to draw widely on the expertise and experience of the Arctic science community. They request your assistance by filling out a **short questionnaire** by Friday, August 23, 2013. If you would like to be kept abreast of the study and notified when the Committee's report is available, please provide your **contact information here**. Questions can be directed to **Lauren Brown** at the NRC .

5. NMME Forecasts for August 2013 to February 2014 Now Available

The forecasts for August 2013 to February 2014 are **now available online**. Both NMME and International MME (IMME) forecasts can be accessed from this page. Forecasts are presented for the following fields:

- 2-meter surface temperature (global and North America)
- Precipitation rate (global and North America)
- Sea-surface temperature (global and Nino3.4-region)

Mean spatial anomaly forecasts and probability forecasts can both be accessed from the homepage. The "Phase I Plus" fields, maximum and minimum 2 m temperature, 200 mb heights, and soil moisture, are also accessible from the homepage at "Preview: additional variables."

6. CO_2 Data Version 3.3 from the Atmospheric CO_2 Observations from Space (ACOS) Task Now Available

The OCO-2 Team and the Goddard Earth Sciences Data and Information Services Center (GES DISC) are pleased to announce the availability of Atmospheric CO_2 Observation from Space (ACOS) Version 3.3, Level 2 data. A description of the improvements with v3.3 and access to the data and documentation can be found on the **website**.

7. Special Issue of Nonlinear Processes in Geophysics: Physics-driven data mining in climate change and weather extremes

Publishers: European Geophysical Union (EGU) and American Geophysical Union (AGU)

Submission Deadline: **December 10, 2013**

Guest editors Auroop R. Ganguly, Northeastern University; Vimal Mishra, Indian Institute of Technology; David Wang, Northeastern University; William Hsieh, University of British Columbia; Forrest Hoffman, Oak Ridge National Laboratory; Vipin Kumar, University of Minnesota; and Juergen Kurths, Potsdam Institute for Climate Impact Research, have obtained approval for the publication of a Special Issue in the journal "**Nonlinear Processes in Geophysics**" (NPG) "Physics-driven data mining in climate change and weather extremes" and request contributions.

The special issue encourages papers in physics-guided data mining, where the physics may be incorporated within the data-driven models through, for example, variable selection, learning of data-driven or network models, effective pre- or post-processing, interpretability, and explain-ability. The papers accepted in this special issue may be broad in scope. However, the new methods, methodological adaptations, or novel applications, in climate change and weather extremes, must have a clear component where the physics either helps formulate or drive the data mining approach and/or enables in the generalization and interpretability of the corresponding results.

The focus of the special issue will be on physics-guided mining of weather and climate data, where the data may be obtained from in-situ and remote sensing observations, paleoclimate reconstructions, reanalysis products, and numerical simulations from physics-based weather and climate models. The novelty may be in approaches for physics-guided climate or weather data mining and/or in the nature of the insights obtained in climate change and/or weather extremes, such as heat waves, cold snaps, heavy precipitation, floods, droughts, tropical and extratropical cyclones, tornadoes, and storm surges, as well as climate variability and change on interannual to glacial-interglacial timescales, both historical and projected. In addition to mining of temporal, spatial, and spatiotemporal data relevant for gaining novel insights in climate change and/or weather extremes, statistical downscaling, data assimilation, large-scale optimization, and stochastic differential equation based methods may be considered as long as there are clear innovations in computational data sciences and in strong coupling of process physics and data-driven methods.

If you are interested in preparing an article for the special issue, please do so by replying to Guest Editor, **Forrest Hoffman**, ORNL.

8. Recorded Presentations Available from AGU Presentations on Communicating Science

Presentations from two recent conferences sponsored by AGU are now available to the public. The Chapman Conference on Communicating Climate Science featured talks by leading climate scientists, social scientists, journalists, and communications experts. To find talks that interest you, check the conference program first, and then visit the list of presentations to find talks you want to view listed by the speaker's name.

AGU also offers recordings of plenary presentations from their recent Science Policy Conference. Dr. Cora Marrett, acting director of NSF, and Bart Gordon, former chairman of the House Science Committee, discuss the value of science and James Balog, founder of the Extreme Ice Survey, and Richard Harris, science correspondent for National Public Radio, talk about the future of climate change and how to communicate to the public.

Chapman Conference: Communicating Climate Science Talks
Science Policy Conference: Preparing for Our Future Talks

Announcement of Opportunities

1. NSF Program Solicitation 13-576: Paleo Perspectives on Climate Change (P2C2)

The Paleo Perspectives on Climate Change (P2C2) competition is a coordinated paleoclimate science initiative that is funded by the National Science Foundation (NSF) Divisions of Atmospheric and GeoSpace

Sciences (AGS), Earth Sciences (EAR), Ocean Sciences (OCE), and Polar Programs (PLR) in the Geosciences (GEO) Directorate. The annual P2C2 competition supports the scientific objectives of the U.S. Global Change Research Program (USGCRP) by fostering interdisciplinary research and synthesis of climate data.

The importance of P2C2 research, as an element of the USGCRP, stems from its unique capability, on timescales longer than the instrumental record, to: 1) document the past temporal and spatial variability of Earth's climate system; 2) evaluate the rates of change associated with this variability; 3) determine the sensitivity of the Earth's climate system to variations in climate-forcing factors; and 4) provide a test environment for simulation predictions from numerical models.

Proposals to the P2C2 competition must clearly state how the proposed projects will contribute to achieving these goals and how the research is relevant to the P2C2 Areas of Research Interest. Research projects that link polar and non-polar regions are strongly encouraged. Research projects that seek to use existing and archived digital data and physical samples are strongly encouraged.

Full Proposal Deadline(s) (due by 5 p.m. proposer's local time): **October 15, 2013**

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 35 - Approximately 35 new awards per year will be made with a typical award duration of three years. Anticipated Funding Amount: $11,000,000 per year pending availability of funds

2. Upcoming NSF Ocean Sciences (OCE) Proposal Deadlines

The following **NSF Ocean Sciences** programs have upcoming semi-annual proposal deadlines of **August 15, 2013**.

Biological Oceanography
Chemical Oceanography
Marine Geology and Geophysics
Ocean Drilling Program
Oceanographic Centers, Facilities and Equipment
Physical Oceanography

3. Special Call for IODP-Related Workshop Proposals

The JOIDES Resolution Facility Board recently announced that after the Indian Ocean, the JOIDES Resolution will likely work in the southern Pacific Ocean, followed by the southern and central Atlantic Ocean. The U.S. Science Support Program associated with the Integrated Ocean Drilling Program is seeking workshop proposals to specifically develop expeditions in these regions.

Proposed workshops should promote the development of new ideas to study the Earth's processes and history via scientific ocean drilling. Broad-based scientific community involvement, co-sponsorship by related programs, and the active participation of graduate students are strongly encouraged. Funding may also be requested for small meetings (<$5,000) or to support participants at larger international workshops. Workshops should result in a drilling proposal submitted to IODP within one year of the meeting.

The workshop submission deadline for this special call is **August 15, 2013**. (Workshops focusing on any region will still be accepted at the USSSP standing deadline of October 1, 2013.) For more information, please visit the **program website**.

Meetings and Workshops

1. **ASP Researcher Workshop 'Key Uncertainties in the Global Carbon-Cycle: Perspectives across terrestrial and ocean ecosystems'**
NCAR, Boulder, CO
August 6, 2013 to August 10, 2013

This workshop will be held the middle week of a **3-week Advanced Studies Program Colloquium at NCAR** where graduate students will learn about terrestrial and ocean carbon cycles through lectures and exercises, and engage in group research projects focused on CMIP5 simulations. This event will be webcast: **http://www.fin.ucar.edu/it/mms/ml-live.htm**.

2. **U.S. CLIVAR Extremes Workshop, "Analyses, Dynamics, and Modeling of Large Scale Meteorological Patterns Associated with Extreme Temperature and Precipitation Events"**
LBNL, Berkeley, CA
August 20-22, 2013

The U.S. CLIVAR Working Group on Extremes will hold a workshop to explore short-term, extreme, temperature and precipitation events that occur in North America with an emphasis upon the large scale meteorological patterns (LSMPs) associated with such events. To improve our understanding of such events this workshop will bring together experts in synoptic and dynamic meteorology, atmospheric modeling, and statistics. Extreme events with a time scale of 5 days or less will be emphasized. Observational studies often emphasize statistical analyses of surface data. Modeling studies often emphasize the skill in simulating the surface data. However, improvements in understanding and simulation follow from applying synoptic and dynamic analyses, motivating the common interface of understanding and simulating the LSMPs associated with extreme events. Conversely, model assessment and statistical tools can be applied to LSMPs. Hence, LSMPs provide a unifying workshop locus for bringing together modelers, statisticians, synopticians, and dynamicists.

The specific objectives are:

- Establish methodology and research protocols for incorporating LSMPs in statistical, dynamical, and synoptic analyses;
- Provide preliminary assessments of where current climate models stand in their simulation of LSMPs and downscale connection to T/P extreme events.

3. **AGU Fall 2013 Meeting Sessions of Interest**

We've compiled a list of sessions scheduled for the Fall 2013 AGU meeting that may be of particular interest to the CLIVAR community. Abstracts are due next week, Aug. 6th. **Check out the list here**.

4. NOAA's 38th Climate Diagnostics and Prediction Workshop
NOAA Center for Weather and Climate Prediction (NCWCP), College Park, MD
21-24 October 2013

The objective of this workshop is to accelerate improvements in NOAA operational products and datasets, and delivery of climate information by bringing NCEP and broader climate community together to address the following themes:

1. Exploring potential sources of predictability on intra-seasonal to interannual (ISI) time scales;
2. Realizing prediction skill by improving forecast tools and techniques through dynamical models and statistical methods, forecaster practices and protocols, data quality and assimilation, and scientific best practices;
3. Enhancing monitoring and timely attribution and assessment of recent high impact weather, water, and climate events.
4. Improving forecast evaluation process, including verification techniques, performance metrics, evaluating existing forecast tools, the process of phasing out old tools and implementing new forecast tools, and engaging users in the evaluation process;
5. Developing applications that enhance NOAA climate services by improving understanding of user needs and delivering the best available climate information for the NOAA societal challenges in water, coasts, extremes, and marine ecosystems.

The Climate Predictability, Climate Prediction, and NMME sessions are joint sessions organized by the CDPW and MAPP Prediction Task Force.

The workshop will feature oral presentations, poster sessions, invited talks and panel discussions. Discounted student registration and some travel support for students will be available. There will be special events for students and young professionals (e.g., poster and presentation awards, networking reception).

For Questions, please contact workshop organizers:
Jin Huang (**Jin.Huang@noaa.gov**, 301-683-3425)
Matthew Rosencrans (**matthew.rosencrans@noaa.gov**, 301-683-3413)
Hugo Berbery (**berbery@atmos.umd.edu**, 301-405-0323)
Dan Barrie (**daniel.barrie@noaa.gov**, 301-734-1256)
Marina Timofeyeva (**marina.timofeyeva@noaa.gov**, 301-713-1970, ext.131)

5. WWRP/THORPEX-WCRP International Conference on Subseasonal to Seasonal Prediction
NOAA Center for Weather and Climate Prediction, College Park, MD
10-13 February 2014

The goal of the WWRP/THORPEX-WCRP joint Subseasonal-to-Seasonal (S2S) research project is to improve forecast skill and understanding on the subseasonal to seasonal timescale, and promote its uptake by operational centers and exploitation by the applications community. The conference will bring together research community, the operational centers, and the applications community interested in forecasts on subseasonal to seasonal timescale.

Topics of the conference will include: (a) relevant phenomenon for subseasonal to seasonal predictions and their predictability; (b) prediction of extremes; (c) initialization and perturbation methods; (d) design

of forecast systems, bias correction, verifications, and quantification of uncertainty; (e) approaches to integrate S2S forecasts into applications.

S2S Goals:
(1) Improve forecast skill and understanding on the timescale between two weeks and a season
(2) Promote its uptake by operational centers and
(3) Exploitation by the applications community

Registration: Will open on 15 August, 2013. Registration fee: TBD. Registration covers lunch, refreshments and ice breaker. We will update you with an official amount and a link to register as soon as practical.

Important Dates:
18 October 2013: Abstracts Due
01 November 2013: Abstract Notifications Sent
01 November 2013: Preliminary Agenda
15 August 2013 through 17 January 2014: Online Registration Open (early registration is encouraged)
22 November 2013: Final Program

Notes: There is travel support available for select students/young scientists. Details will be made available when registration opens. Contact: **Arun Kumar**.

6. **Joint 2014 AMS Atmospheric Radiation and Cloud Physics Conference**
Boston, MA
7-11 July 2014

The 14th Conference on Atmospheric Radiation will be held in conjunction with 14th Conference on Cloud Physics and will include an Anthony Slingo Symposium. Hotel and general information will be posted on the AMS website in mid-November of 2013. Papers are solicited in all areas of atmospheric radiation, spanning radiative transfer theory, cloud and aerosol remote sensing, Earth radiation budget, new approaches to radiation measurement, and radiative parameterizations in regional and global models. Joint sessions with Cloud Physics, optical and radiative properties of clouds, cloud remote sensing, indirect effects, and through the Anthony Slingo Symposium are planned.

7. **Arthur M. Sackler Colloquium of the National Academy of Sciences: The Science of Science Communication II**
National Academy of Sciences Building, Washington, DC
September 23-25, 2013

The National Academy of Sciences is hosting its second Sackler colloquium on this topic to advance a national dialogue about science communication.
Highlights include:
• Presentations by leading scientists summarizing their fields' contributions to effective science communication.
• An expanded three-day program that includes scholarly exchanges; panels of communication researchers and practitioners moderated by science writer, producer, and television personality Cara Santa Maria; and workshops focused on some of the biggest science communication challenges facing professionals and the public today.

- A keynote lecture by University of Pennsylvania professor Kathleen Hall Jamieson: Responding to the Attack on the Best Available Evidence.

The colloquium offers scientists, communication practitioners, and opinion leaders the opportunity to discuss issues of mutual concern, share successes and ongoing questions, and fine-tune their understanding of how lessons from research can drive effective communication of scientific topics. A registration fee of $100 per day covers the cost of meals during the conference. Daily registration is permitted. Participation in the Day 3 workshops requires at least one other day of participation.

8. WCRP-Conference for Latin America and the Caribbean: Developing, Linking, and Applying Climate Knowledge
Montevideo, Uruguay
March 17-21, 2014

This conference will provide a space for building interdisciplinary dialogues between climate scientists, social scientists, policy makers, practitioners, and key boundary institutions. It will be organized around key thematic areas, which will encourage dialogue between the climate and social sciences and decision-making communities.

The two main goals of this event are to (a) address critical knowledge challenges gaps in understanding, simulating, and predicting climate variability and change in the Latin American and Caribbean region; and (b) identify gaps and ways to overcome limitations in the knowledge networks that include basic and applied climate science and processes to inform policy and decisions relevant for the Latin American and Caribbean region.

The conference will provide a space for building interdisciplinary dialogues between climate scientists, social scientists, policy makers, practitioners, and key boundary institutions. It will be organized around key thematic areas, which will encourage dialogue between the climate, social sciences and decision-making communities.

Closing Date for abstracts: **30 September 2013**
Acceptance of abstracts: By mid November 2013

9. FP7 GEOCARBON International Conference, "Towards a Global Carbon Observing System: Progresses and Challenges"
Geneva, Switzerland
1 - 2 October 2013

The Conference will be followed immediately by the GEO CL-02 Task meeting "Global Carbon Observation and Analysis". The Conference is open to the global community working on carbon cycle monitoring, from scientists and data providers to potential users and stakeholders, including EC and GEO. The aim is to present recent results and achievements in observing and modeling C-cycle and GHG, at any level: research, monitoring, methodology, policy, infrastructure, etc. The final aim is to gather elements useful for the design of a global carbon cycle observing system.

Abstracts are invited for the following sessions:
- Tropical C-budget and hotspots

- Observations from space
- In situ observations
- Global methane cycle
- Model data fusion at global and regional scale
- Carbon and policy

The closing date for abstract submission is the **10 August 2013**. All received abstracts will be reviewed by a Scientific Committee, notification of acceptance will be provided by the end of August.

10. The Integrated Biogeochemistry and Ecosystem Research (IMBER) Open Science Conference
Bergen, Norway
23-27 June 2014

"Future Oceans – Research for marine sustainability: multiple stressors, drivers, challenges and solutions"

The Integrated Biogeochemistry and Ecosystem Research (IMBER) Project will convene its Open Science Conference from 23-27 June 2014 in Bergen, Norway, with the goals of:

· highlighting research results from the IMBER project and activities,
· promoting integrated synthesis of IMBER research, and
· developing a science plan and implementation strategy for the next phase of IMBER research.

The Call for Abstracts for the IMBER OSC 2014 is now open! Deadline for abstract submission: **15 January 2014.** Contributions to the IMBER OSC 2014 are welcome from all marine and oceanographic communities!

11. APEC Climate Symposium 2013 "Regional Cooperation on Drought Prediction Science to Support Disaster Preparedness and Management"
Jakarta, Indonesia
November 11 - 13, 2013

The theme of this year's symposium is "Regional Cooperation on Drought Prediction Science to Support Disaster Preparedness and Management". As with previous APCC events, this symposium will present the latest scientific and technological developments in climate prediction and climate information applications. The event will bring scientists and researchers together with representatives from government agencies, NGOs, and the private sector in order to foster a col! laborative dialogue on drought prediction and management.

The 3-day conference will include presentations on drought prediction at multiple time-scales, drought impact assessment, the application of advance climate information to decision-making, the development of innovative Early Warning Systems, and methods for disseminating drought information to relevant stakeholders.

Please feel free to contact **Ms. Nina Horstmann** or **Ms. Sooyang Joo** if you would like to request more information about this year's symposium.

12. PICES 2013 Annual Meeting, "Communicating forecasts, uncertainty and consequences of ecosystem change"
Nanaimo, BC, Canada
October 11–20, 2013

The North Pacific Marine Science Organization (PICES) announces its 2013 Annual Meeting to be held October 11–20, 2013, at the Vancouver Island Conference Centre, Nanaimo, British Columbia, Canada. The meeting is hosted by the Government of Canada, Department of Fisheries and Oceans in coordination with the PICES Secretariat. Local arrangements are made by the Department of Fisheries and Oceans, Science Branch, Pacific Region. Some sessions/workshops of interest to the CLIVAR community include:

Recent trends and future projections of North Pacific climate and ecosystems
The North Pacific Ocean experiences change on a range of timescales, and is among the most difficult regions of the world ocean in which to detect secular climate trends associated with anthropogenic forcing against the background of natural variability. Understanding impacts on ecosystems and the human communities dependent on them requires understanding of the magnitudes of climate variability and change. Sustained observations of past and present states, modeling of future states with global climate models (GCMs), and downscaling of GCM projections to the regional scale are all key components of the scientific effort to understand impacts and inform adaptation efforts.

Cost-effective, cooperative ocean monitoring
Long-term monitoring is a key component of an ecosystem-based approach to fisheries management. Data time series enable the examination of changes in oceanographic and community metrics. In addition to costly ocean monitoring systems with sensor arrays and autonomous vehicles, low cost cooperative monitoring efforts would enhance our understanding of marine ecosystems, as well as help insure their long-term viability. An important consideration for sustainable long-term ocean monitoring is the development of affordable solutions to deploying and retrieving sensors. When combined with efforts such as the Global Oceans Observing System (GOOS), cooperative ocean monitoring networks will make an important contribution to achieving data-driven ecosystem-based management.

Identifying mechanisms linking physical climate and ecosystem change: Observed indices, hypothesized processes, and "data dreams" for the future
In this workshop, we seek to identify and model key processes that enable us to succinctly and quantifiably explain the mechanisms underlying the correlative relationships in physical-biological datasets, both in the North Pacific and North Atlantic. The description and modeling of these key processes may (a) involve few or several variables (but not full complexity), (b) use dynamical (e.g., eddy-resolving ocean models, NPZ, IBM, etc.) or statistically based methods (e.g., Bayesian, linear inverse models, etc.), (c) explain variability in low or high tropic levels (although we seek to emphasize secondary and higher producers), and (d) include uncertainty estimation.

13. Workshop on High-End Scenarios of Regional Sea Level Changes and their Uncertainties
University of Hamburg, Germany
20–22 November 2013

The workshop aims to:

• Review regional sea level projections simulated for high-end climate change scenarios as they result from CMPI5 and other computations

- Discuss implications for a range of regional sea level scenarios
- Analyze in-depth inherent uncertainties of and consistencies among existing estimates
- Develop a strategy as to how to further improve regional sea level projections
- Present studies resulting from downscaling to better address regional sea level projections and their uncertainties, e.g. for the North Atlantic, Baltic/North Sea, and Mediterranean
- Discuss the quality of models analyzed through dedicated model-data intercomparison studies.

To register, please send an email to **events@ecra-climate.eu**. Contributions in the form of oral presentations limited to 20 minutes are invited. Please state a tentative title of your talk when registering in order to facilitate the creation of the workshop programme. More details on the programme and logistics will then become available in September.

Position Announcements

1. **NSF Ocean Drilling Program Director**
Arlington, VA

Job Announcement Number:OCE-2013-0010
SALARY RANGE: $105,211.00 to $163,957.00 / Per Year
OPEN PERIOD: Thursday, July 25, 2013 to **Monday, August 26, 2013**
SERIES & GRADE: AD-1301-04
POSITION INFORMATION: Full-time. - This position will be filled as a one- or two-year VSEE, IPA, or as a Fed Temp Appointment.

WHO MAY APPLY: Applications will be accepted from US Citizens. Due to a recent change in Federal Appropriations Law, only Non-Citizens who are permanent US residents and actively seeking citizenship can be considered for Federal appointments. Therefore, you are required to provide documentation that confirms you are actively seeking citizenship at the time you submit your application. Non-citizens who do not provide documentation will only be considered for the IPA program.

QUALIFICATIONS REQUIRED: Candidates must have a Ph.D. in geophysics or closely related discipline, plus after award of the Ph.D., six or more years of successful research, research administration, and/or managerial experience pertinent to the position.

The responsibilities of the NSF program director are constantly evolving. The program director is guided by the goals of NSF's Strategic Plan: (1) enable the United States to uphold a position of world leadership in all aspects of science, mathematics, and engineering, (2) promote the discovery, integration, dissemination, and employment of new knowledge in service to society, and (3) achieve excellence in U.S. science, mathematics, engineering, and technology education at all levels. The core strategies NSF staff employs include developing intellectual capital strengthening the physical infrastructure, integrating research and education, and promoting partnerships.

Responsibilities of the program director include, for example, long-range planning and budget development for the areas of science represented by the program or program cluster, the administration of the merit review process and proposal recommendation, the preparation of press releases, feature articles and material describing advances in research supported, and coordination and liaison with other programs in NSF, other Federal agencies and organizations.

HOW TO APPLY: Your application should be submitted online and must be completed and all required documents successfully faxed or uploaded before 11:59 PM Eastern time on the closing date. You must answer all of the job-related questions to ensure full consideration for this position. For more detailed information, please review our NSF eRecruit Frequently Asked Questions.

2. **Professor of Climate**
MIT Department of Earth, Atmospheric and Planetary Sciences

The MIT Department of Earth, Atmospheric and Planetary Sciences announces a major expansion of its activities in climate science and seeks applicants for up to three faculty positions in Climate-related fields. Preference will be given to junior appointments at the assistant professor level, but a senior appointment can be considered for an individual with exceptional qualifications. Areas of specific interest include observations, models and theory of the atmosphere, ocean and cryosphere, and climates, biogeochemical cycles and ecology.

The successful candidates will have to have a strong record of accomplishment in their discipline, a strong commitment to teaching and student advising, a keen interest in relating their work to complementary research in the Department and in the MIT/Woods Hold Joint Program in Oceanography. Joint appointments with other MIT departments are also potentially negotiable where appropriate.

More information about this position can be obtained by writing **Professor Raffaele Ferrari**. A completed application will include a curriculum vitae, a statement of research and teaching objectives, and the names of 5 potential references. Applications are being accepted at **Academic Jobs Online** [Position ID #1122: MIT-EAPS-CLIMATE2011]. Please do not ask your referees to upload letters at the time of application; letters will be requested directly by MIT. To receive consideration, a completed application must be received. Search Contact: **Mr. Michael Richard**, HR Administrator, EAPS, 54-926, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139; Phone: 617-253-5184; Fax: 617-253-8298. (Search ongoing as of May 2013.)

3. **Two Tenure-Track Faculty Positions in Marine Geochemistry**
University of Hawaii

The Department of Oceanography, University of Hawai`i at Mānoa, invites applications for two full time, tenure-track faculty positions. Areas of interest include (but are not limited to) Sediment Geochemistry / Biogeochemistry, Global Geochemical/Biogeochemical Cycles, Paleoceanography, Physical-Biogeochemical Interactions, Land-Ocean Dynamics, and Marine Atmospheric Chemistry. Appointments are expected to be at the Assistant Professor level, although candidates with suitable qualifications may be considered for appointment at the Associate level, subject to position clearance and availability of funds. The anticipated start date is August 1, 2014. The level of State support for each position will be equivalent to nine (9) months per year, with the remaining three (3) months to be raised through extramural funds. The successful candidates will be expected to develop and sustain outstanding research programs and contribute to the department's educational mission (including classroom instruction) at both the graduate and undergraduate level. The latter will include teaching in the Department's Global Environmental Science Bachelor of Science degree program.

Applicants must have a Ph.D. degree in oceanography or another relevant discipline received by 1 June 2013; excellent communication skills; demonstrated capability for creative, high quality research; and the demonstrated capability/experience and desire to contribute to teaching and mentoring of undergradu-

ate and graduate students. At the Associate level, the minimum qualifications are as stated above, with four years of experience at the rank of Assistant (or equivalent). Applications should include a curriculum vitae, statement of research and teaching interests, three representative publications, and the names and contact information for at least three references. Questions should be directed to Dr. Kathleen Ruttenberg, chair of the search committee, at **kcr@soest.hawaii.edu**. More information about the Department can be found at **www.soest.hawaii.edu/oceanography**.

Submit application by mail or email to:
Chair (Geochemistry Faculty Position Search)
Department of Oceanography
University of Hawai`i at Mānoa
1000 Pope Road
Honolulu, HI 96822
Email: **ocnsrch@soest.hawaii.edu**
Electronic submissions are preferred. Review of applications will begin on **August 15, 2013**.

4. **Two Tenure Track Assistant Professor Positions in Climate Dynamics**
George Mason University

GMU is hiring two assistant professor (tenure-track) positions in Climate Dynamics. This is in addition to the 10 faculty positions that COLA scientists already occupy in the Department of Atmospheric, Oceanic, and Earth Sciences at GMU. The announcement is quite broad within the discipline of climate dynamics, covering a wide range of time scales and phenomena. Applications can be **submitted at the website**.

5. **Biological/Chemical/Physical Oceanographer**
Bermuda Institute of Ocean Sciences (BIOS)

Applications are invited from scientists with interests in biological, chemical or physical oceanography to complement existing and future oceanographic research and educational activities at BIOS. BIOS anticipates hiring several oceanographers/marine scientists with a range of rank possible from early career to senior scientist.

Scientific activities at BIOS are wide-ranging and include oceanographic and atmospheric time-series studies, coral reef research and ocean and human health interactions (**http://www.bios.edu/about/team-members/**). BIOS is particularly interested in candidates with expertise in the following interdisciplinary themes: (1) Biological or biogeochemical oceanography including those with interests in molecular biology/genomics; microbial ecology; phytoplankton/zooplankton ecology and physiology; nutrient and/or trace element geochemistry; or natural products chemistry. (2) Physical oceanography, especially those with interests in new observing technologies including mooring and AUV systems; or physical-biological modeling.

Successful applicants will be expected to build a strong research program, complementary to and synergistic with a broad range of oceanographic research at BIOS. Familiarity with the U.S. federal agency research funding system is especially desirable. The successful applicants should also be willing to fulfill a variety of teaching needs (**http://www.bios.edu/education/**) in oceanography and/or other areas of the candidate's specialization. Rank and salary will be commensurate with experience.

BIOS offers a competitive package in a stimulating, challenging and rewarding work environment. Qualified candidates should submit their application to include: cover letter, curriculum vitae including names of references and salary requirements to:

Gillian Hollis
Bermuda Institute of Ocean Sciences
17 Biological Station
St. Georges, GE01, Bermuda
gillian.hollis@bios.edu
Review of applications will begin **August 1**. The position will remain open until filled. See more at: **http://www.bios.edu/about/careers#sthash.PVeOHxwq.dpuf.**

6. **Ocean/Ice Modeller**
British Antarctic Survey

Based in the Polar Oceans programme, the postholder will join a team investigating ocean and ice variability in the Southern and Arctic oceans. The postholder will be responsible for creating a model of the ocean, sea ice, and ice shelves in the Weddell Sea, Antarctica. They will study the formation and evolution of dense water masses in the region, which ultimately contribute to the production of Antarctic Bottom Water. Full details at **this website**. The closing date for applications is **11th August 2013**, Contact Paul Holland with any informal inquiries about the post before then.

Dr. Paul Holland, British Antarctic Survey
pahol@bas.ac.uk, +44 (0)1223 221444
http://www.bas.ac.uk/profile/paul/

7. **Post doc/Project Scientist: Using Cloud Observations to Improve Climate Models**
NOAA GFDL

The Department of Energy's Atmospheric Radiation Measurement (ARM) program seeks a postdoctoral fellow or project scientist to use cloud-scale observations to evaluate and develop cloud and convection parameterizations in climate models. GFDL is experimenting with new approaches for modeling clouds and convection in climate models which are based partly on their distributions of vertical velocity and associated aerosol and microphysical processes. Scientists with backgrounds in general circulation modeling and parameterization development and/or evaluation of models using observations are especially encouraged to apply. Please send your CV, three suggested references for letters of recommendation, and statement of interest to **Leo Donner**. Deadline: **7 August 2013**

8. **Postdoctoral Position in Cloud-Radiation-Dynamics Interactions**
JPL/Caltech

The California Institute of Technology (Caltech) Postdoctoral Scholars Program at the Jet Propulsion Laboratory (JPL) invites applicants for a postdoctoral research positions in the study of cloud-radiation-dynamical interactions. A major emphasis of the research involves the application of satellite observations (e.g. CloudSat/Calipso, TRMM, AIRS) to better characterize and understand these interactions and improve their representation in global models.

Applicants must have a recent Ph.D. in atmospheric science or a closely related field, must be familiar with atmospheric modeling and parameterization issues and must have a strong background in data analysis. Experience with one or more state-of-the-art global atmospheric/climate models, the framework for simulation and model intercomparison studies, and/or one or more of the above types of satellite data is desired. Postdoctoral scholar positions are contingent upon evidence of completion of the Ph.D. To apply, please send a letter describing your research interests, your CV, and the names of three references by mail to Duane Waliser, Jet Propulsion Laboratory, MS 183-501, 4800 Oak Grove Drive, Pasadena, CA 91109-8099. You can also email your application to **duane.waliser@jpl.nasa.gov**.

9. **Postdoctoral Fellow in Computational/Geological**
Berkeley Lab

This postdoctoral fellow position is for a recent PhD graduate who is interested in developing reduced order models for earth system models. The successful candidate will work on a project titled "Multiscale reduced order models for integrated earth system models" funded by the Department of Energy. He/She will combine multiple reduced order modeling techniques from different disciplines and apply these techniques to subsurface flow models and, subsequently, to other submodels within the Community Land Model (CLM) and Community Earth System Model (CESM). He/She will also develop methods to accurately quantify the modeling errors and uncertainties of these reduced order models, and study their impacts on uncertainty quantification.

The ideal candidate must have excellent knowledge in one or more of the following areas: statistical techniques, model order reduction techniques, Gaussian process regression and numerical land-surface models. He/She should be familiar with Fortran or C++, and have demonstrated ability to develop complex scientific codes. He/She must be able to work independently with minimal supervision, and proactively propose and test new ideas that are relevant to the project. Good oral and written communication skills are expected.

Responsibilities:
•Develop new reduced order models for subsurface and land-surface models.
•Quantify errors and uncertainties in the reduced order models.
•Develop a hierarchy of reduced order models and study the propagation of modeling errors and uncertainties.
•Work with climate scientists to incorporate the models into CLM and CESM.
•Author technical reports and peer-reviewed journal articles.

Qualifications:
•Doctoral degree in applied mathematics, earth sciences, engineering or other relevant disciplines.
•Strong mathematical foundation in model order reduction techniques and statistical modeling techniques such as Gaussian process regression.
•Ability to work with domain scientists to identify modeling requirements and express these requirements mathematically.
•Programming experience in Fortran or C++.
•Familiar with subsurface modeling, CLM, and CESM.
•Has prior experience in the development of large-scale subsurface flow simulators similar to pFLOTRAN, Amanzi or TOUGH.
•Motivated to work independently and contribute proactively to the project.
•Capable of giving clear oral and written presentation of results.

This is a 1-year term appointment with the possibility of renewal for up to 5 years based upon satisfactory job performance, continuing availability of funds, and ongoing operational needs. This position requires completion of a background check. Salary for post-doctoral positions depends on years of experience post-degree.

Apply directly online and follow the on-line instructions to complete the application process.

10. **Postdoctoral Fellows in Atmospheric Chemistry**
MIT Center for Global Change Science

New openings for Post-doctoral Fellows in the MIT Center for Global Change Science. The Fellows will be required to have a doctoral degree in some area of the atmospheric sciences with significant experience in three-dimensional atmospheric chemical transport modeling. Experience with using these models together with observations to optimally estimate trace gas sources and sinks (i.e., inverse modeling) is desirable. The Fellows will join the international team of experimentalists and theoreticians in the Advanced Global Atmospheric Gases Experiment (AGAGE), and will focus on interpretation of AGAGE observations of greenhouse and ozone-depleting gases using such inverse methods. They will also join the large atmospheric chemistry group at MIT. Salary depends on experience.

Qualified scientists are encouraged to apply by e-mailing their Curriculum Vitae (with a list of degrees, positions, publications, names and addresses of three professional references, and a brief statement of research interests) to the attention of:

Prof. Ronald G. Prinn
Department of Earth, Atmospheric and Planetary Sciences
Massachusetts Institute of Technology
77 Massachusetts Avenue, Room 54-1312
Cambridge MA 02139-4307
E-mail: **rprinn@mit.edu**
Fax: (+1) 617 253 0354
In addition, applicants should arrange for the three letters of recommendation to be sent directly by referees to the same address. All materials must be received by **September 30, 2013**. More information can be obtained from **http://cgcs.mit.edu/research/agage**, **http://atmoschem.mit.edu**, and **http://mit.edu/rprinn.**

11. **Two Assistant Specialist Post doc positions on MJO and Regional Climate Modeling**
University of California, Santa Barbara

Two Assistant Specialist Post doc positions are available at the University of California, Santa Barbara:

1) Madden-Julian Oscillation: the main goal of this project is to advance our understanding of the influence of the Madden-Julian Oscillation (MJO) on the predictability of extreme precipitation in the contiguous United States. The candidate will be involved in diagnostic analyses and predictability experiments with regional (WRF) and global models. Log in to **https://recruit.ap.ucsb.edu/apply/JPF00178** to submit your cover letter describing your research interests and experience, curriculum vitae, three letters of recommendation and representative publications. For more information, please contact **Dr. Charles Jones.**

2) Regional Climate Modeling: the main goal of the project is to advance our current understanding of climate processes on regional-to-continental scales and how they affect the water balance in the High Asia Mountains. The project focuses on the present climate and employs multiple sources of data (e.g., in-situ, reanalysis and satellite data) and regional models to investigate multiannual-to-decadal variations in winter westerly disturbances (WD), Indian Summer Monsoon (ISM) and their impacts on rainfall, snow and runoff variability in the Himalayas. Log in to **https://recruit.ap.ucsb.edu/apply/JPF00174** to submit your cover letter describing your research interests and experience, curriculum vitae, three letters of recommendation and representative publications. For more information, please contact **Dr. Leila M. V. Carvalho**.

12. **Postdoc in Seasonal-to-interannual climate prediction**
Institut Català de Ciències del Clima, Barcelona, Catalonia, **Spain**

General description and work environment: The Institut Català de Ciències del Clima (IC3) is a climate institution created by the Government of Catalunya and the University of Barcelona, aiming at understanding climate change and variability, the dynamics and theory underlying those changes and the impact on society. IC3 focus on the Mediterranean regions, tropical Africa, South America and Southeast Asia.

The Climate Forecasting Unit (CFU) undertakes research to forecast global climate variations from one month to several years into the future (also known as seasonal-to-decadal prediction). The unit members also investigate the impact of climate variability in socio-economic sectors, and the management of such risk via the development of climate services for renewable energy, insurance, etc. For details, see **this website**.

Main duties: The successful applicant will investigate the predictability and actual forecast quality of seasonal-to-interannual ensemble predictions carried out with the dynamical global climate model EC-Earth in the framework of several European projects. The applicant will be involved in developments to carry out initialised seasonal-to-interannual ensemble simulations to contribute to the maintenance of the international leadership of the Unit in the field. These developments include testing the impact of the highest possible horizontal and vertical resolution, the use of stochastic parametrisations and the improvement of the initialisation of the ocean, land and atmospheric components. Systematic comparisons with a large range of operational hindcasts and research experiments will be undertaken. Process-based analysis of the forecast quality will be a main focus of the job; such analysis should be the main tool to understand the origin of the model drift and identify the predictability sources that are underrepresented in current forecast systems. The incumbent will be involved with the Unit's climate services initiatives, will help developing the tasks of the externally-funded projects and could contribute to the mentoring of master and PhD students. Outstanding opportunities exist for collaboration with other European and international research institutions.

Desired skills / qualifications: Applicants must have a Ph.D. in Atmospheric Sciences, Physical Oceanography or a related discipline. Ideal candidates will have several of the following attributes:

- Knowledge of climate dynamics and experience in climate modeling and prediction.
- Good programming skills in Fortran and Bash, while knowledge of python scripting and the R language will be highly valued.
- Fluency in spoken and written English, fluency in other European languages will be also valued.
- A good publication record.

This position implies becoming part of dynamic, multi-national research group that performs cutting-edge, highly-demanding climate prediction experiments. The candidate should be able to work as an active and collaborative team member to help in the delivery of shared objectives ant to efficiently communicate with a range of colleagues of varying levels of technical and scientific competence. Hence, the ability to work as part of a large, strongly-coordinated team and to continuously share both knowledge and tools is an essential aspect required.

Conditions and application procedures: The position is opened for 24 months with a possibility for extension and starts preferably in October 2013 or as soon as possible after that date. The salary will be competitive and commensurate with experience. To apply, please send your CV accompanied with a brief statement (max. 1 page) of interest and experience with the following subject "Application for Post doc position on seasonal-to-interannual climate prediction – CFU" by e-mail to **jobs@ic3.cat.**

13. **Coupled wave-ocean-atmosphere-ice forecast Scientist**
Environment Canada

Environment Canada is seeking highly motivated and qualified scientists to contribute to the development of coupled wave-ocean-atmosphere-ice forecast. This is a challenging opportunity to work across several disciplines. This is also a unique opportunity to carry out research in an operational environment.

Essential Qualifications: A recent (i.e. less than 5 years) Ph.D. in physical ocean sciences, atmospheric sciences, physics, mathematics or a closely related field is required. Experience in numerical modeling, experience with data processing and analysis, and knowledge of programming (Fortran, UNIX environment) are also required. Demonstrated ability to communicate results in the form of scholarly articles and the ability to work in a collaborative team are essential.

Details: The successful candidate will be located at the RPN quarters of Environment Canada (EC) in Montreal QC. Funding is available for at least 2 years pending satisfactory progression revision after 1 year. The preferred start date is 1 April 2014. Salary in the range of $55-60k and health coverage are guaranteed after the 3rd month of employment to the end of the appointment.

Application: To apply, please send a cover letter explaining how you meet the essential selection criteria, a curriculum vitae, together with a list of publications, names of three persons who may act as references, and a brief statement of research interest, to the address below. Review of applications will begin **5 Sept. 2013** and will continue until positions are filled.

Dr. Natacha Bernier, Research Scientist
Meteorological Research Division, Environment Canada
2121 Trans-Canada Highway, Dorval QC Canada H9P 1J3
+1-514-421-5235 **Natacha.Bernier@ec.gc.ca**

14. **Several funded PhD positions in Canadian institutions**
ArcTrain-Canada

ArcTrain-Canada, a new program on processes and impacts of climate change in the North Atlantic Ocean and the Canadian Arctic, is offering several funded PhD positions in Canadian institutions:

- Quantification of lateral exchanges of heat and salt between boundary currents and the Central Labrador Sea (Dalhousie Univeristy, Halifax)
- Ocean-atmosphere-ice sheet isotopic modelling and stable water isotopes in the Laurentide and Greenland Ice Sheets (University of Calgary)
- Decadal-centennial climate and ocean changes in the subpolar NW North Atlantic during the last 2000 years (UQAM, Montreal)
- The Mid-Pliocene climate in Arctic and subarctic Canada (UQAM, Montreal)
- High resolution inter-annual climatology of the sub-polar North Atlantic for studies of the North Atlantic Current (University of Alberta, Edmonton)
- Forecasting future sea ice condition in the Arctic: A Lagrangian approach (McGill University, Montreal)
- Radioactive, radiogenic and light isotope signatures of surbarctic rivers from eastern Canada (UQAM, Montreal)
- Coupled ice and climate system modelling with a focus on high frequency variability/instability (Memorial University of Newfoundland, St. John's)

Visit **www.arctrain.ca** for more information on how to apply.