IBS Center
for Climate Physics

Introduction on
IBS Center for Climate Physics

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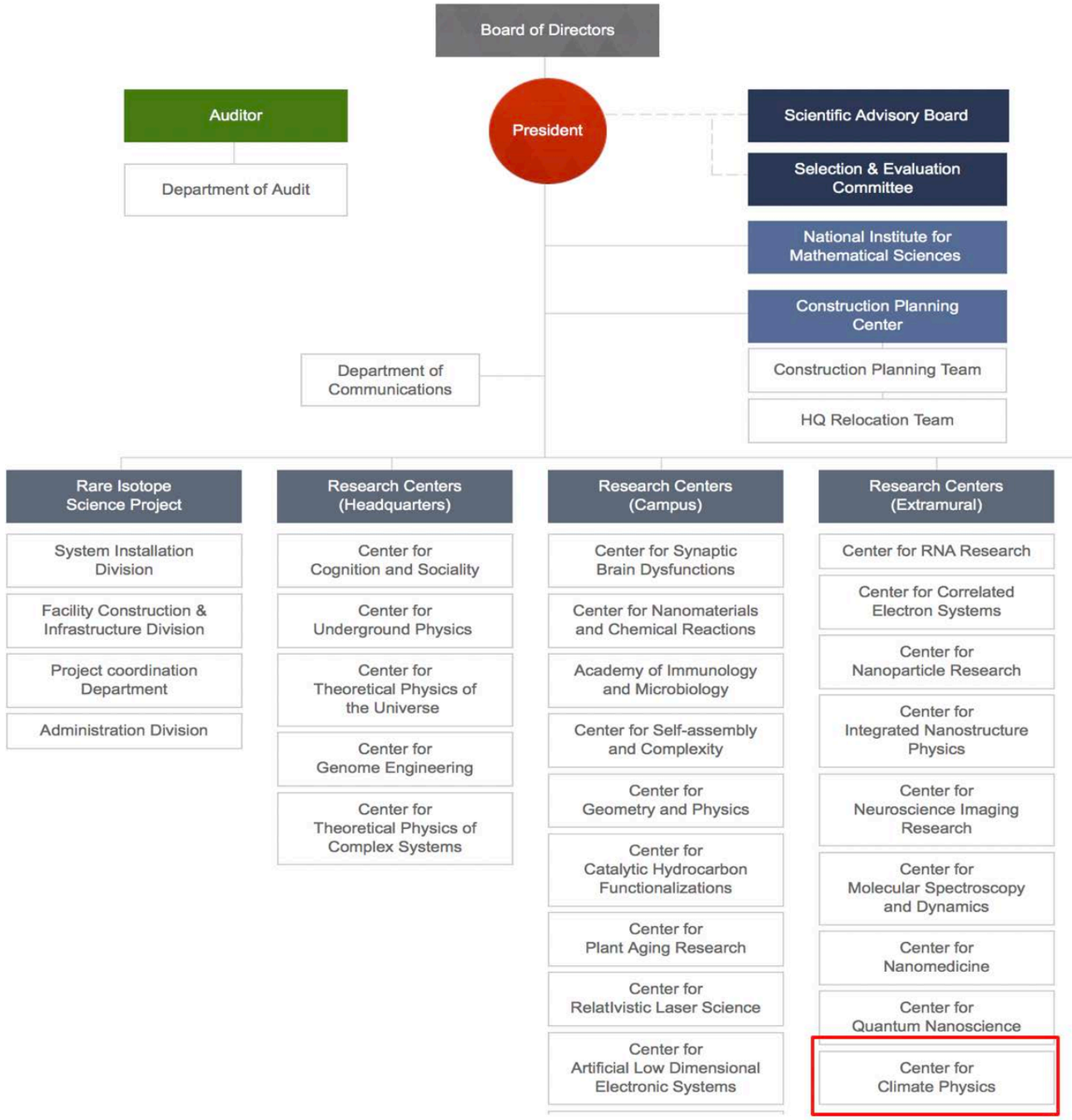
What is Institute for Basic Sciences (IBS)?

Making Discoveries for Humanity & Society

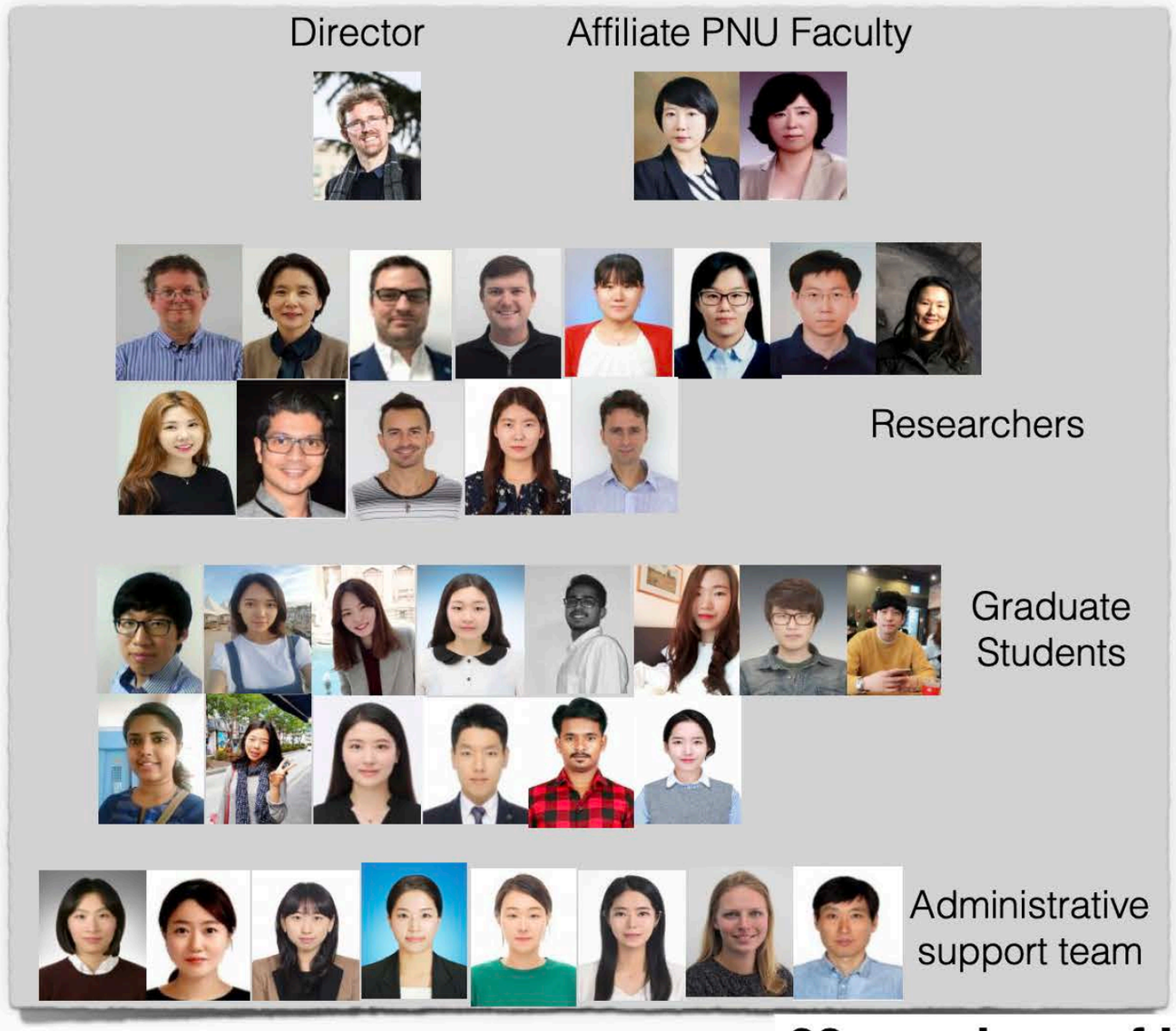
Institute for Basic Science(IBS) is

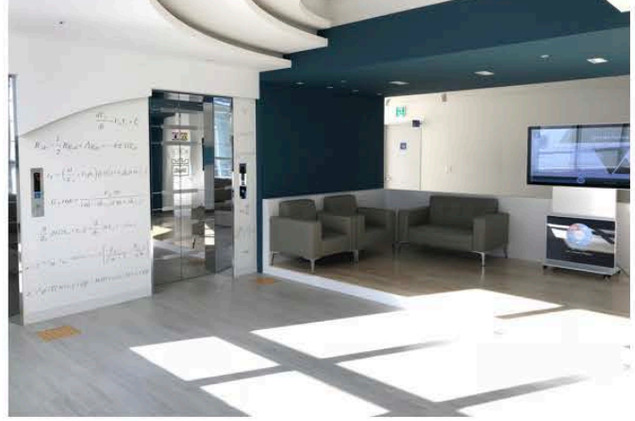
The Institute for Basic Science (IBS) pursues excellence in basic science research. The goal of IBS is to advance the frontiers of knowledge and to train the leading scientists of tomorrow.

ibs Institute for Basic Science



IBS Center for Climate Physics (ICCP)





38 members of ICCP

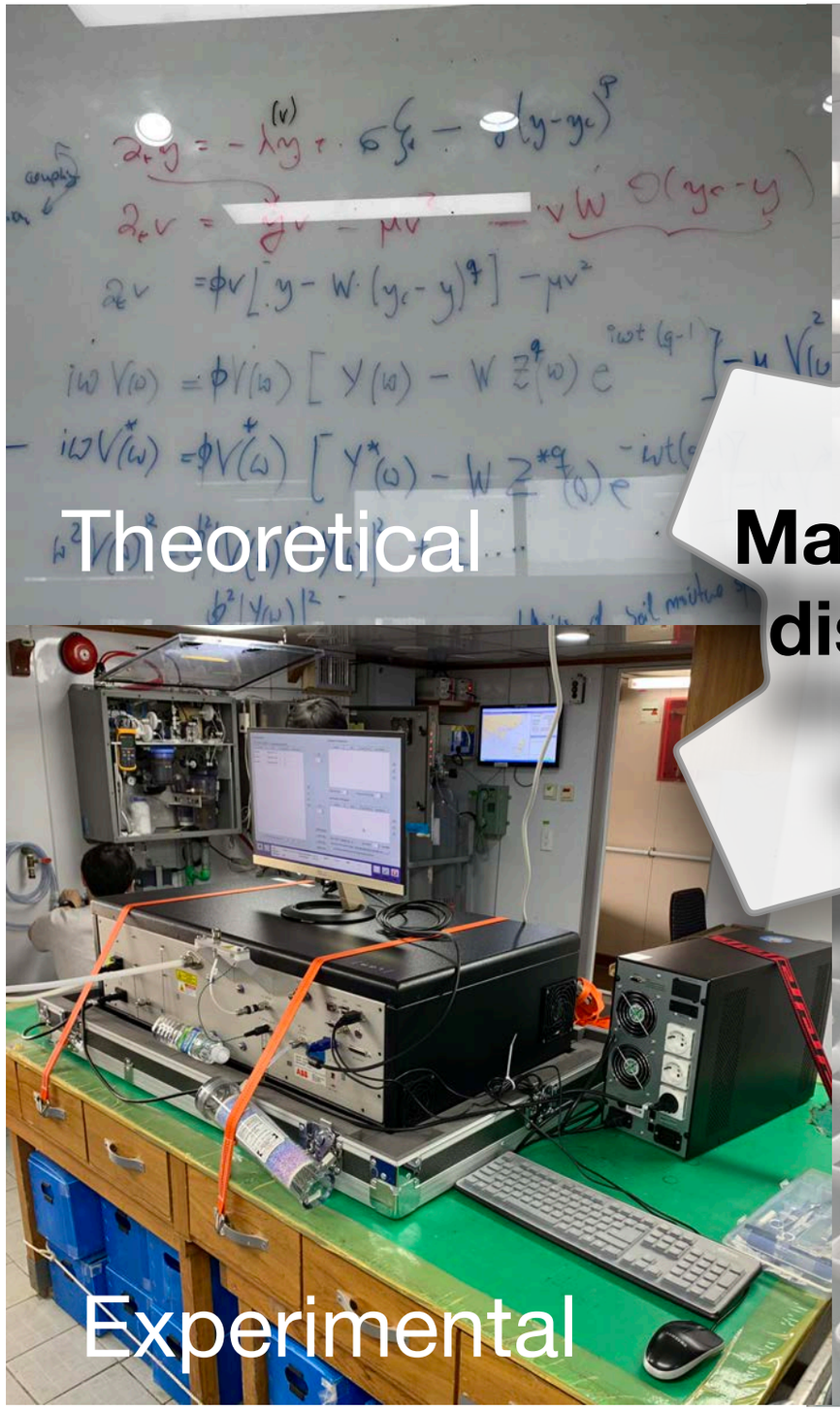
1 Director, 2 affiliate PNU faculty, 13 researchers, 14 students, 8 support team members

ICCP's Mission

ICCP's mission is to enhance the understanding of natural climate variability and man-made climate change, and to improve the ability to predict climate impacts on the hydrological cycle, ice-sheets, sea level, and regional processes.

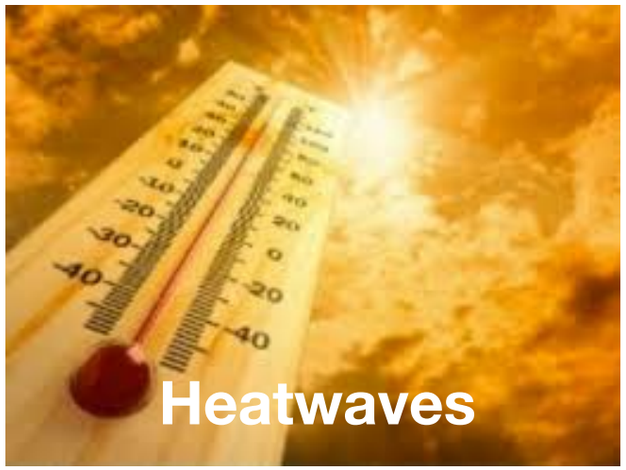
ICCP will provide basic scientific knowledge on the evolution of the climate system and its interactions with humans. This information can help the general public and policymakers in planning, decision making, and in optimizing adaption and mitigation efforts to climate-induced risks.

ICCP's Philosophy



Making breakthrough discoveries in earth system science

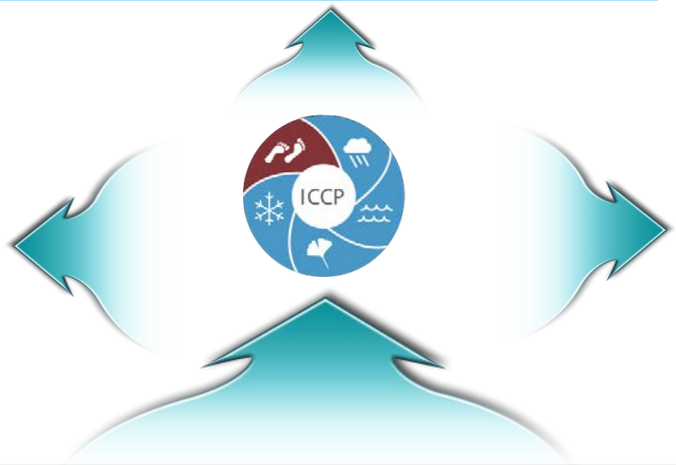
Science Relevant



ICCP's Structure

Scientific breakthroughs

Train next generation of earth system scientists



Climate Knowledge

Earth System Dynamics

Sensitivity to radiative forcing, climate modes, abrupt climate change, climate-vegetation coupling, human interactions, sea level rise

Hydroclimate

- Extreme events, subtropical expansion, mega-droughts, and East Asian Monsoon systems

Earth System Predictability

- Predictions of soil water, productivity, nutrients, forest fire, longterm migration stress, sea-ice and vegetation

Physical Oceanography

- Polar oceanography, ice-sheet ocean interactions, inverse modeling, ocean-carbon cycle feedbacks, high resolution ocean modeling tracers

Director

Associate Director (from 2020)

Our Computing Facility

Compute

Cray XC50LC
468 compute nodes,192 GB
40 Service nodes
4 Data analysis nodes, 768 GB
2 login nodes

Aleph IBS/ICCP supercomputer

Store

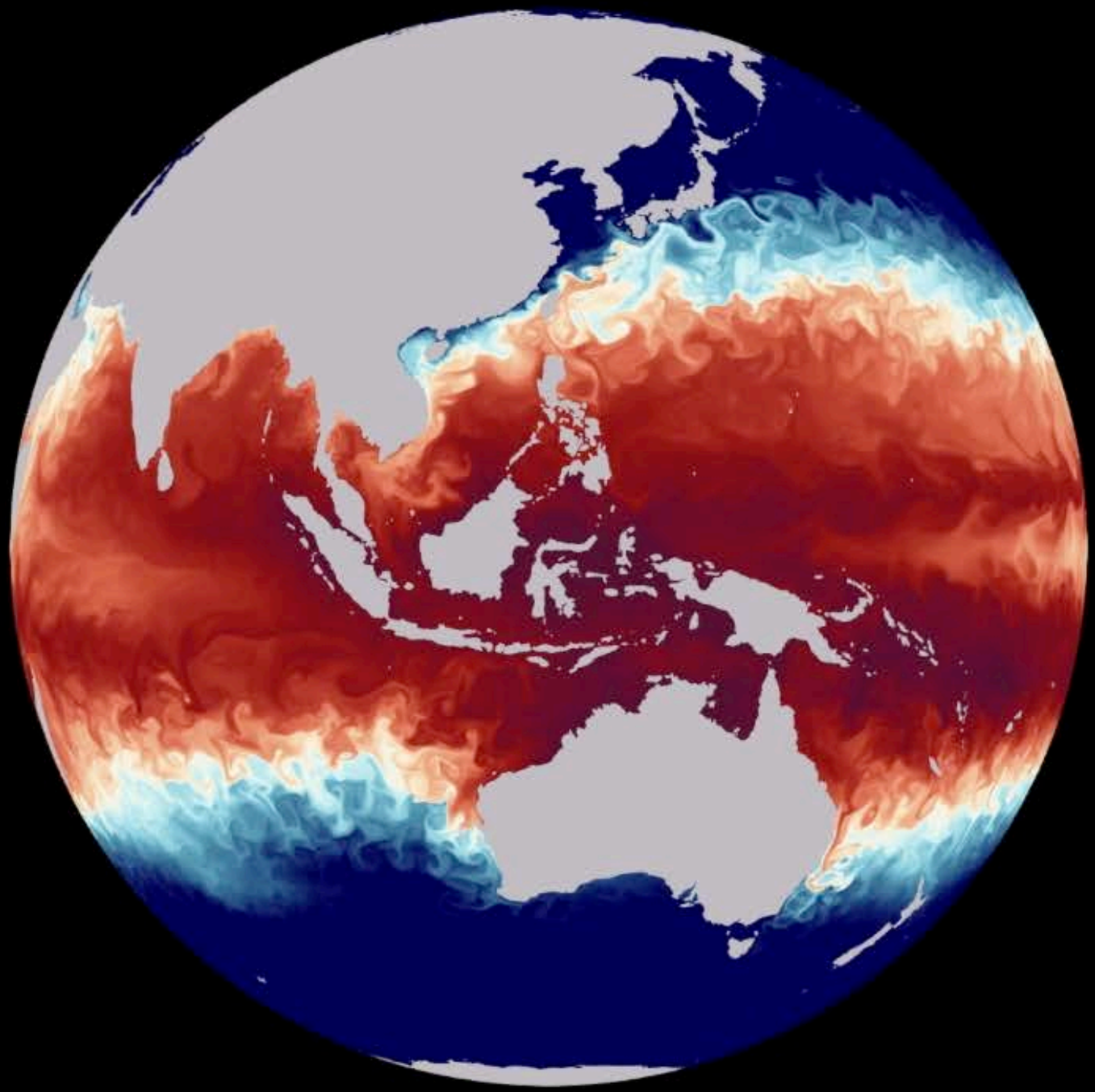
Cray Lustre L300
8.52 PB

Archive

Cray, IBM TSMF
43 PB

Conduct frontier simulations of the climate system and all of its components in a) ultra-high resolution, b) running from past to future, and c) using large-ensembles. This research will provide breakthroughs in our understanding of regional climate change, sea level rise, earth system predictability, and extreme events.

Clouds calculated on Aleph

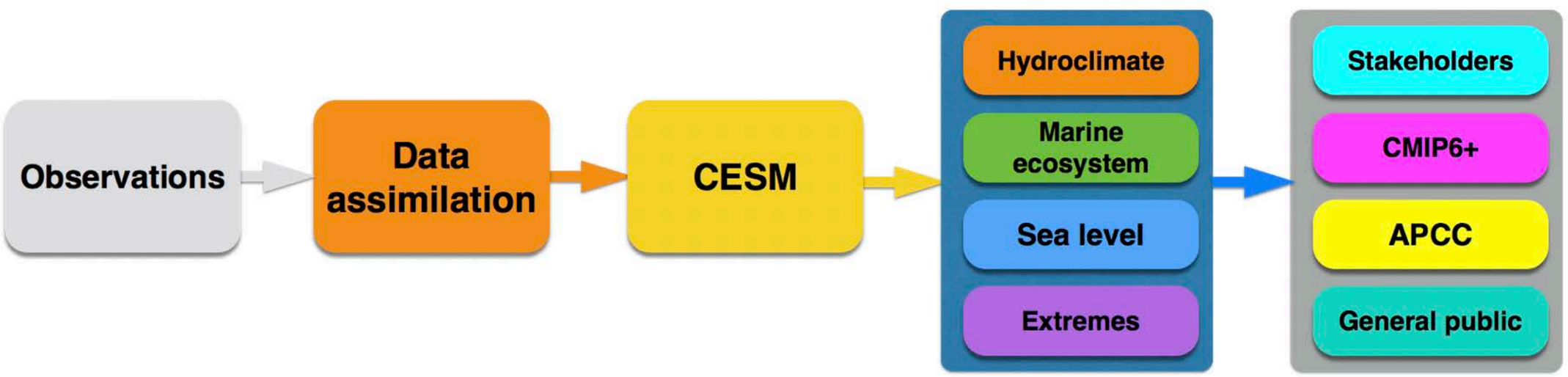


Ocean temperatures calculated on Aleph

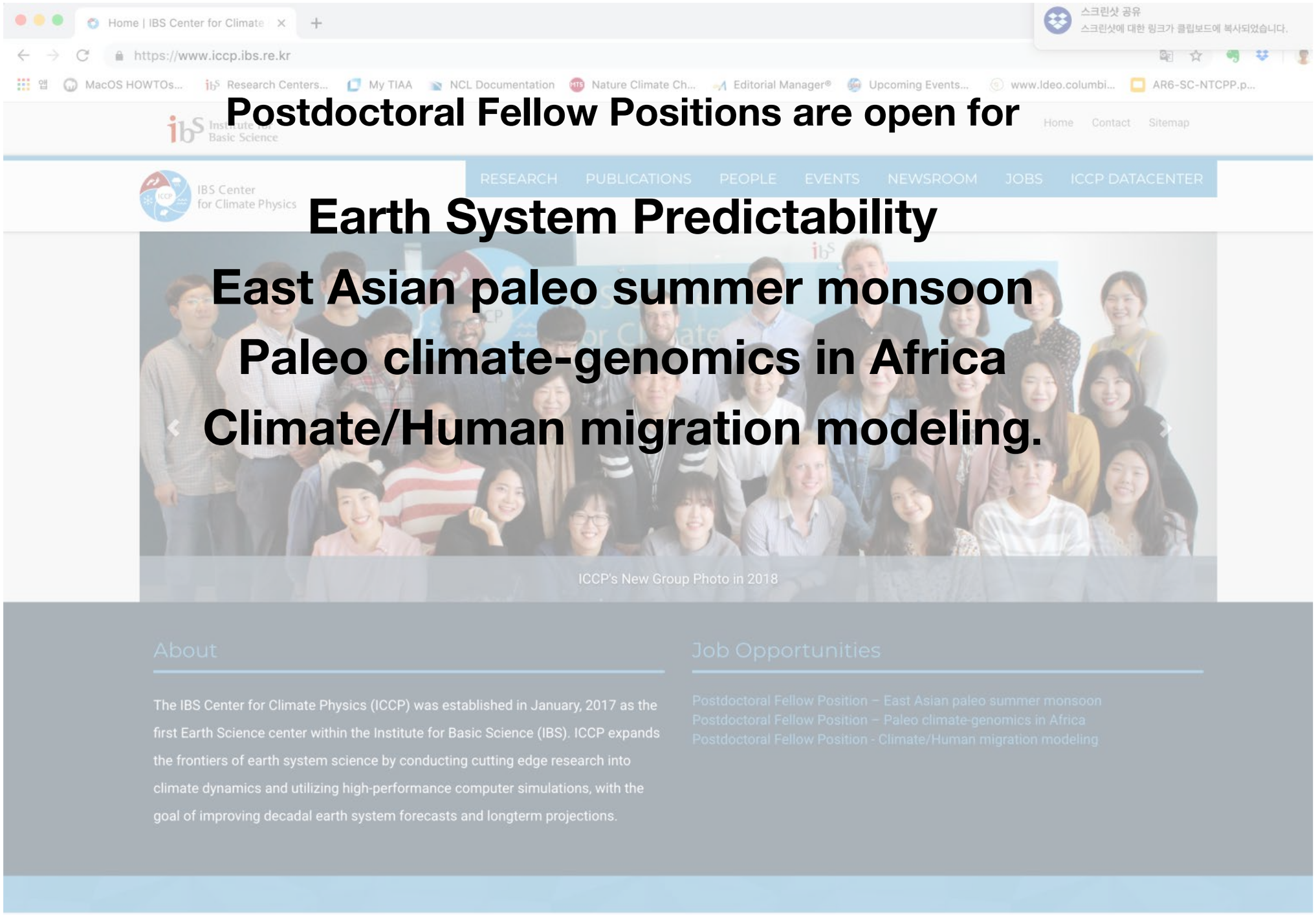
Mission of the Earth System Predictability Project in ICCP

To enhance our predictive capability of Earth System components such as total soil water, wildfire occurrence, marine biogeochemical process, sea level, and statistics of climate extremes on timescales of months to decades using comprehensive Earth System models.

- Understanding of sources of short and longterm predictability
- Development of a high-resolution earth system forecasting framework
- Improvement of prediction of earth system components



Postdoctoral Opportunity



Postdoctoral Fellow Positions are open for

Earth System Predictability

East Asian paleo summer monsoon

Paleo climate-genomics in Africa

Climate/Human migration modeling.

Detail info: https://www.iccp.ibs.re.kr/jobs

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Thank you very much!

Any Question?

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