

NEESPI Focus Research Centers

Brief information

**NEESPI Focus Research
Center for Water System
Studies (WSS FRC)**

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NEESPI Focus Research Center for Water System Studies (WSS FRC)

- **Venue:** Water Systems Analysis Group, University of New Hampshire, Durham, New Hampshire, USA
- **Objectives:** conduct, promote, and facilitate research aimed to improve understanding and modeling of the water cycle and water management in the Earth System focusing on Northern Eurasia
- **Links to International Projects:** GWSP, CLIC, GEWEX, GTN-H, IPY
- **Leaders:** Vörösmarty, Lammers, Shiklomanov, Douglas, Xiao
- **Current Science foci:**
 - Water resources and water budgets
 - Water management
 - Variability and change of hydrological cycle
 - Interactions between humans and hydrology
 - Monitoring of the water cycle
 - Remote sensing for hydrological research
- **Funded and pending proposals to NSF, NASA, NOAA, GWSP and IPY**
- **Other relevant activities:**
 - ✓ The Focus Research Center is currently serving as the base institution for the NSF ARCSS Arctic Fresh Water Initiative (FWI), ArcticRIMS, and R-ArcticNet.

Water problems in Northern Eurasia

- Droughts and Desertification



- Floods and Inundation



- Hydrological impacts of land cover change

- Water quality

- Risky water management

- Global water cycle impact



WSAG UNH Research Activity in the NEESPI Region

- Collaborative Research to Develop a Hydrological Observing System for Pan-Arctic Land Mass. NSF. (2001-2005)
- A Global Rapid Integrated Monitoring System for Water Cycle and Water Resource Assessment. With the Regents of the University of California. NASA. (2003-2005).
- An Integrated Assessment of the Pan-Arctic Freshwater System – Analysis of Retrospective and Contemporary Conditions. NSF. (2003-2007)
- River discharge from the Russian Federation: An understanding of contemporary trends and their placement in a Holocene context. NSF with UCLA. (2003-2005)
- A Prototype Hydrological Data Assimilation System Using Remotely Sensed Precipitation Field. NASA (2004-2006)
- Assessment of Recent Hydrologic Change over the Arctic Terrestrial Drainage System. With University of Colorado. (2004-2006). NASA ESE
- Water Indicators: Mapping the Links between Water, Food Security, and Poverty. Global Water System Project.
- Understanding the Changing Carbon, Nitrogen and Water Cycles in the Earth System. NASA (2004-2006).
- **Pending:** *Contributions of Changes in Land Use/Land Cover, Water Use, and Climate to the Hydrological Cycle Across the Central Asian States. NASA LCLUC.*

Major coordination effort of 22 funded projects

UNH CHAMP Coordination Office
Includes:

Two PI's plus full time
CHAMP Director

Responsibilities:

- ❖ Web.page
- ❖ Meeting support and organization
- ❖ Ongoing communications within and outside FWI (Fresh Water Initiative) community.



The screenshot displays the Arctic CHAMP website interface. At the top, there is a navigation menu with buttons for Home, Overview, Freshwater Initiative Projects, CHAMP Presentations, Events, History, Related Links, and Science Steering Committee. Below the menu, the main content area is organized into a grid of sections, each with a title, a brief description, and a representative image:

- What Is Arctic Hydrology?**: A brief overview of arctic hydrology. Image: A diagram of a hydrological cycle.
- Current State of the Arctic Hydrosphere**: Text and graphics about the current state of the arctic hydrosphere. Image: A map of the Arctic region.
- Fall AGU Press Conference**: Arctic Climate Change & the Intensifying Hydrologic Cycle. Image: A landscape with mountains and a river.
- Freshwater Initiative Projects**: Linking CHAMP/ASOF/SEARCH, and funded by the NSF Office of Polar Programs. Image: A green box with the text 'Freshwater Initiative Project'.
- FWI All-Hands Meetings**: 2005 Meeting Plans and Past Meeting Archive. Image: A group of people at a meeting.
- Arctic CHAMP Report**: The Hydrologic Cycle and its Role in Arctic and Global Environmental Change: A Rationale and Strategy for Synthesis Study (CHAMP). Image: A book cover.
- Education and Outreach**: Bringing science into the real-world. Image: Three people in outdoor gear.
- FWI Featured Project**: Learn more about Permafrost & the Hydrological Cycle in the Russian Arctic. Image: A map of the Russian Arctic.
- FWI Synthesis Activities**: Image: A globe with arrows indicating a cycle.

At the bottom right of the content area, there is a 'Site Search' button. The footer of the website features logos for the National Science Foundation (NSF), the National Science Foundation Arctic Program, and the Arctic CHAMP logo, along with the text 'Arctic CHAMP Science Management Office' and a link for 'Contact Information'.

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<http://arcticchamp.sr.unh.edu/>