

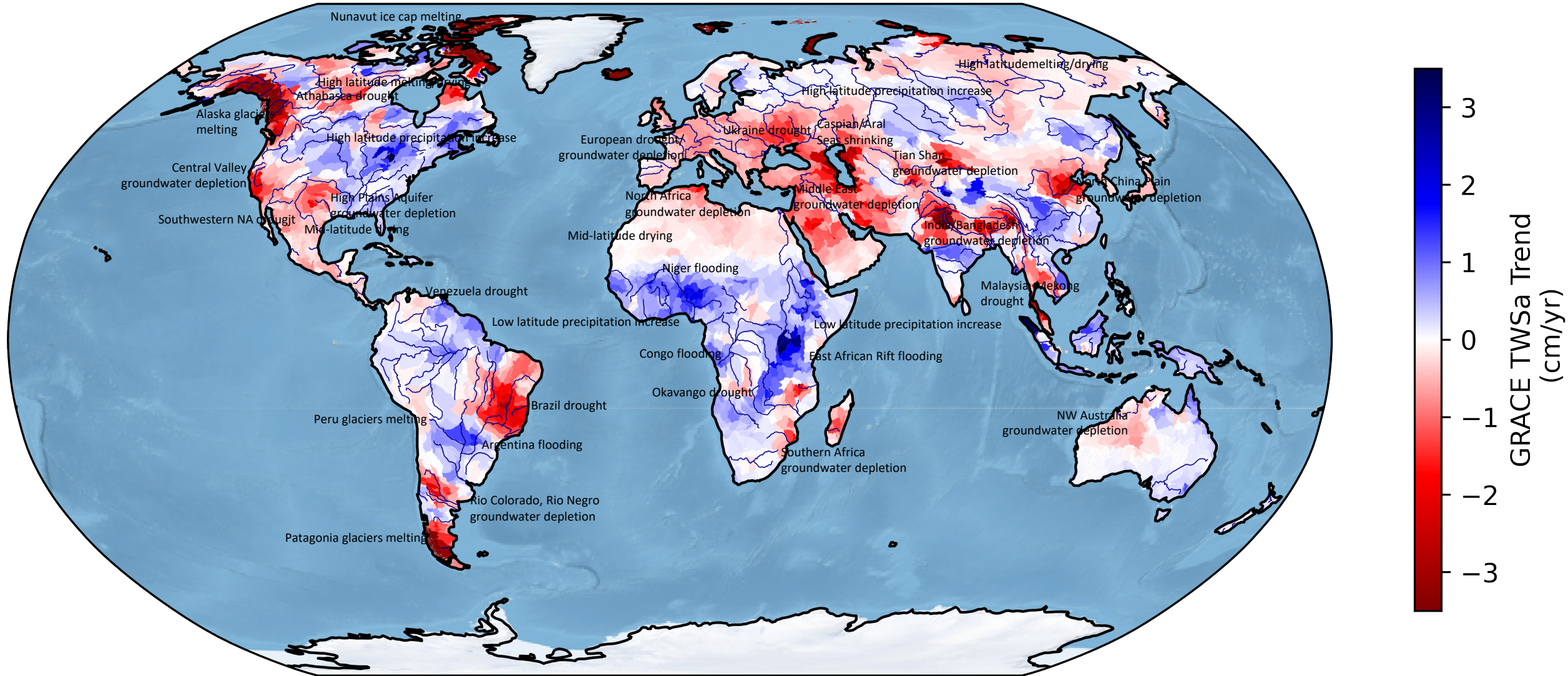
**Global Institute for
Water Security**

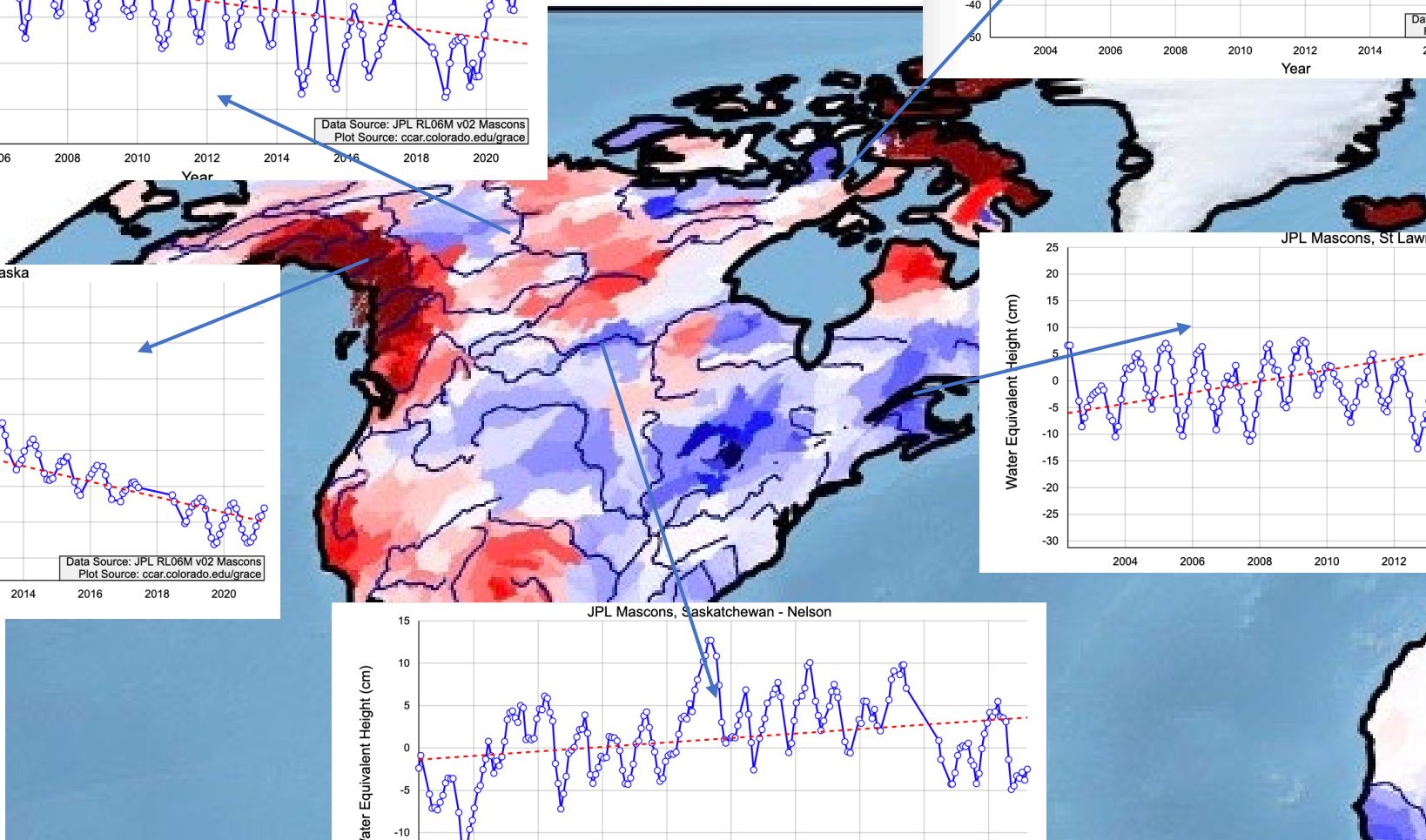
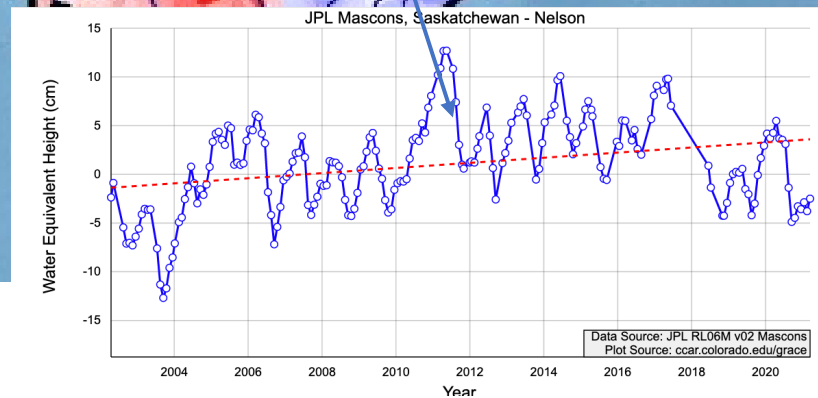
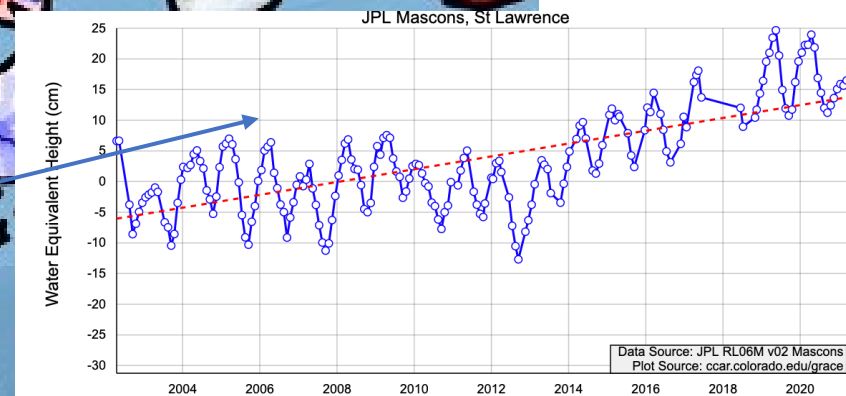
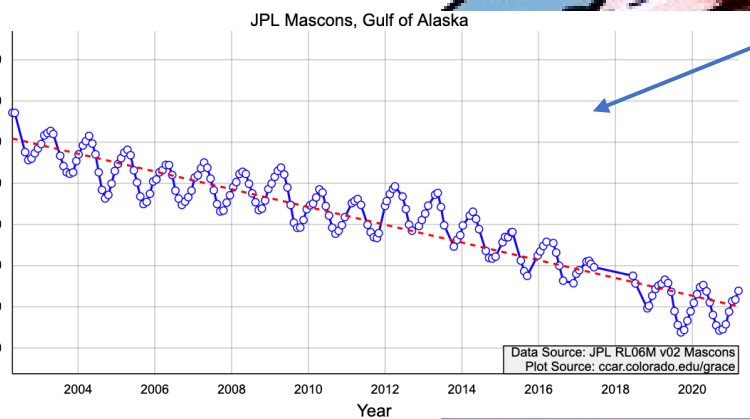
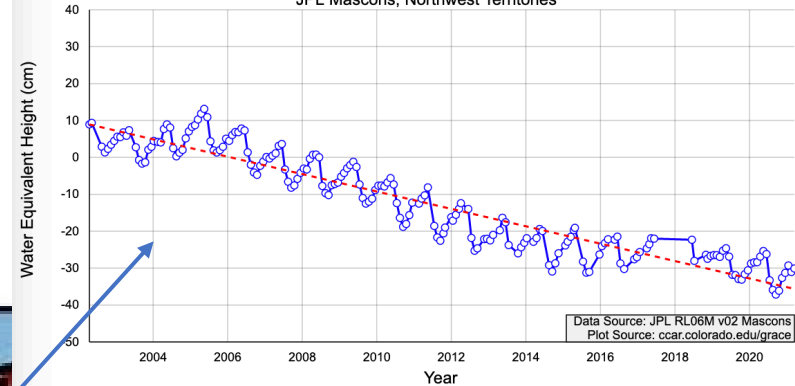
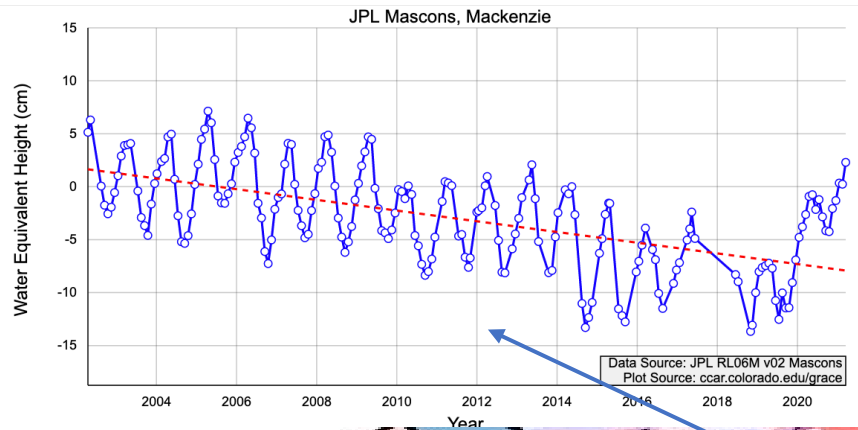
U S A S K

Jay Famiglietti, Executive Director
Global Institute for Water Security
School of Environment and Sustainability

Changing freshwater availability from GRACE/FO (2002-2022)

Chandanpurkar et al., in preparation, 2022






A stylized topographic map graphic with concentric, wavy lines in a light blue/grey color, set against a dark blue background.

Vision

“Global water security solutions and accelerated efforts towards climate adaptation achieved through interdisciplinary research, science-informed policy and transdisciplinary engagement.”

A faint, light grey topographic map graphic with concentric, wavy lines, located in the bottom right corner of the slide.

Global Institute for
Water Security
USASK

Mission

GIWS Mission

- To conduct world-class, innovative, interdisciplinary water research that drives transformative solutions and adaptation strategies locally, nationally and globally
- To provide enriching graduate student and postdoctoral training experiences that prepare HQP to confidently confront the complexities of water and related issues in their chosen professions
- To engage deeply in transdisciplinary, collaborative partnerships at all levels to co-develop solution- and adaptation-oriented research projects
- To communicate our results broadly, to advise governments and to participate in water diplomacy, and to affect sustainable water management and policy
- To mentor the next generation of leadership in water research and practice



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Climate Change & Water Security

Understanding and modelling of current and future effects of climate change on hydrology, ecology and water resource systems



Sustainable Development of Natural Resources

Assessment and management of environmental risks with emphasis on water

Land-Water Management & Environmental Change

Effects of agricultural and urban land and water management on water quality and water movement through a watershed



Socio-Hydrology

Encompasses both the human drivers of hydrological change and the social processes to inform decision-makers



Water & Health

Water, sanitation and hygiene, transmission of waterborne and water-related diseases, aquatic pollution and effects on the food chain



Water & Wastewater Treatment Technologies

Development of advanced water treatment technologies and improved technologies for the treatment of industrial wastes



Groundwater and Hydrogeology

Quantify the extent of groundwater resources and their quality, the natural recharge, the long-term impacts of abstractions and waste disposals

Example areas for strategic growth

Strengths

- Simulation models for forecasting
- Field-based research from plot to landscape scales (strong physical, chemical and biological observation-basis)
- Cold regions water science
- Toxicology
- Interdisciplinarity and Indigenous engagement
- Climate change and water security

Strategic growth opportunities

- Water-Food-Energy-Environment Nexus
- Water Policy and Diplomacy
- Water Quality
- Groundwater
- Remote Sensing
- Corporate Water Use and Industry Engagement
- Integrate field sites and field data into a network
- Water and Health, Water for Humanity and Leadership in the SDG's, especially SDG 6, clean water and sanitation



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Some near-term strategic priorities

- **Campus-wide coordination on water degree programs**
- **Attracting top quality graduate students**
- **Building a stronger international reputation**
- **Sustaining elements of GWF**
- **Diversification of funding, including advancement**
- **A USask-wide Prairie Resilience Center**
- **Deep engagement with GIFS, AgBio, SENS, Engineering on the Food-Water –Energy (FEW) Nexus**
- **CRC Tier 1 hire in remote sensing: focus on soil moisture**
- **Deeper engagement with policy and social sciences**
- **National and global groundwater program**
- **Water quality**
- **Science communication: outreach platform, microcredentials, Water Day on the Hill**



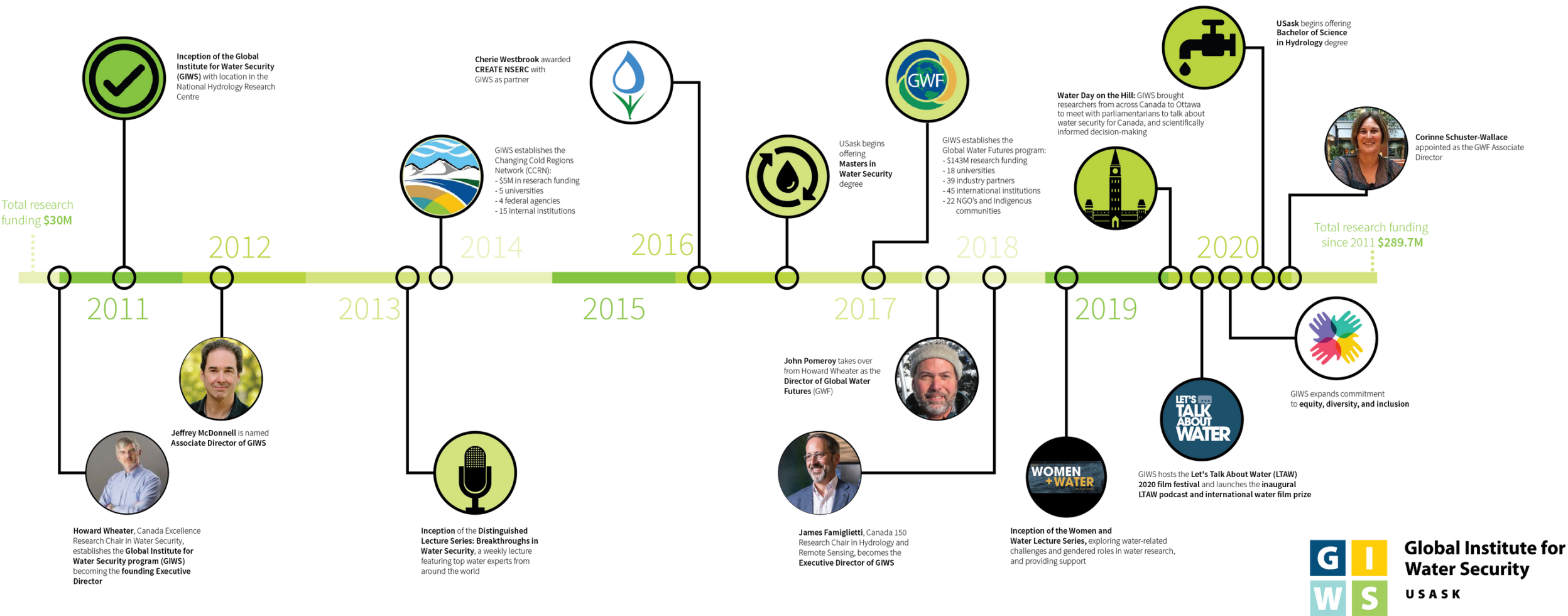
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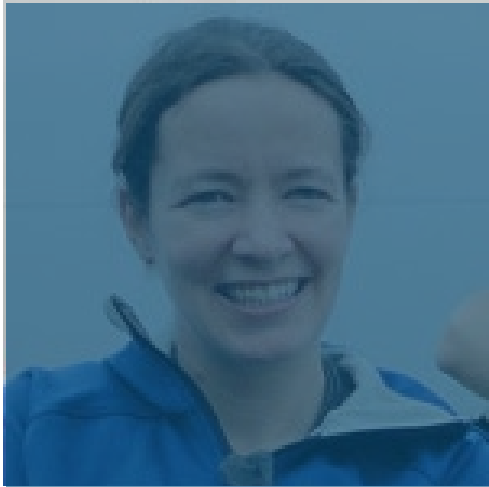
A blue background with a white topographic map pattern of concentric, irregular lines.

CERES

New partnership with renowned organization CERES to drive investor and corporate action on the global water crisis & new report on corporate water governance

GIWS formed in 2011





Water: by the numbers (since 2011)

Some numbers from GIWS

Membership: 400 members across campus including 94 faculty members from 21 academic units



Highly Qualified Personnel: 718 graduate students; 181 postdoctoral fellows; 639 research associates, scientists, and research assistants

Research Funding: \$289.7 million



Publications: 1,873 journal articles, 94 books/book chapters, 1,513 conference papers, 802 invited, key-note and plenary lectures



Decolonization and Indigenization

- Water is an important aspect of life and for indigenous people - it is a critical part of their culture and in many cases their livelihoods depend on it.
- USask researchers have established themselves as leaders in Canada in engaging Indigenous Communities in water research through a mutually agreed co-creation and co-development process.
- 36 Indigenous Community Partners (and growing)
- Engaged in innovative projects with indigenous communities, to meet their needs and cultural values. These include co-creation of science, social science to address governance and culture challenges, provision of education opportunities, and the use of different artistic and theatrical media to enhance knowledge translation.



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Equity, Diversity, and Inclusion

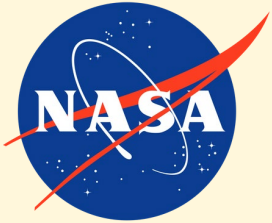
- EDI is at the core of our mission to help protect precious freshwater resources and woven into the fabric of how we work
- USask is one of the 17 participating institutions in the Tri-agency's Dimensions Pilot Program to identify and eliminating obstacles and inequities (Dimensions, 2020),
- We support and adhere to USask's Institutional EDI Strategy and Action Plan 2020 – to integrate inclusive excellence throughout teaching, research, community engagement and governance to reduce barriers to EDI .
- GIWS has hired Dr. Andrea Rowe as EDI Specialist to develop protocols for GIWS and for GWF, including inclusive recruitment, hiring, fieldwork, and support ongoing EDI training, including team building, psychological safety, anti-racism training, and more.



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Environment and
Climate Change Canada
Environnement et
Changement climatique Canada



Partners

The water community at Usasak has built an extensive network of close to 500 government (local, Provincial, Federal), community (including 36 Indigenous communities), and scores of industry and non-governmental entities, while engaging with several hundred research collaborators spread across the globe.

Awards



Awards (2021)

- GIWS Water Security Research Excellence Award
 - Helen Baulch
 - Lee Wilson
- Best PhD Thesis Award
 - Razi Sheikholeslami

Awards (2022)

... Stick Around 😊

Major Awards & Recognition

1 AGU Walter Langbein Lecturer



John Pomeroy

1 Canadian Society of Soil Science



Bing Si

1 Soil Science Society of America



Bing Si

1 Royal Swedish Academy of Agriculture and Forestry



Irena Creed

1 Bancroft Award from the Royal Society of Canada



Irena Creed

1 The Royal Society, College of New Scholars, Artists and Scientists



Christy Morrissey

1 Water Canada, Water's Next Award, Education and Outreach



James Famiglietti

1 Smart 50 Awards 2021 - joint program to use wastewater to monitor for SARS-CoV-2



John Giesy & Markus Brinkmann

1 International Environmental Modelling and Software Society



Saman Razavi

1 Canadian Broadcasting Corporation (CBC) Future 40 Award



Markus Brinkmann



**GIWS
&
University**



GIWS Water Security Research Excellence Award for 2021
Helen Baulch



GIWS Water Security Research Excellence Award for 2021
Lee Wilson



University of Saskatchewan – New Researcher Award (2020-2021).
Kerry McPhedran



Distinguished Alumni Achievement Award, University of Waterloo, September 2021.
– School of Environment and Sustainability Student Association (SENSA), Student's Choice Outstanding Teacher Award (inaugural award), August 2020.
Maureen Reed



2021: College of Arts and Science New Researcher Award.
Tara Kahan



Nanshan Distinguished Lecture on the Environment, Southern University of Science and Technology (SUSTech), Shenzhen China, 2020.
Jeffrey McDonnell



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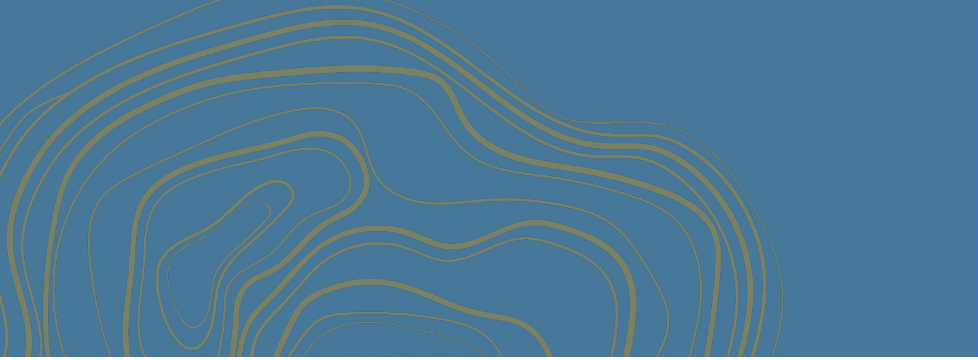


New Canada Research Chair

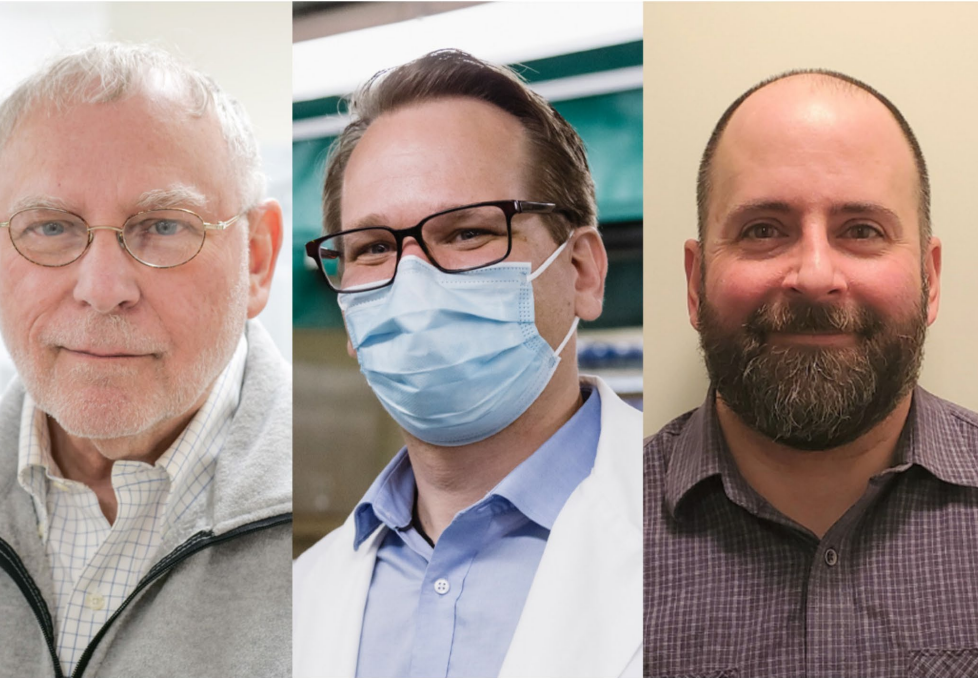
Dr. Lori Bradford has been named Canada Research Chair Tier-2 in Social and Cultural Decision Making in Engineering Design



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Wastewater Team Success



The University of Saskatchewan Wastewater Surveillance Team, which responded swiftly to the arrival of COVID-19 by developing a monitoring program that provides reliable forecasts of infection outbreaks in communities, recognized with USask's 2022 Publicly Engaged Scholarship Team Award:

From left: Dr. John Giesy, Dr. Markus Brinkmann, Dr. Kerry McPhedran



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AAAS Fellow

Dr. Jeffrey McDonnell has been named a fellow by the American Association for the Advancement of Science (AAAS).



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Palash Sanyal

USask Alumni 'One To Watch' Award Winner



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GIWS Grants

Capacity Building Grants Postdoctoral Fellowships

To stimulate novel transdisciplinary and interdisciplinary research ideas and build new research teams to further Vision and Mission of the Global Institute for Water Security, and in alignment with the C150 Chair in Hydrology and Remote Sensing program. The idea is to build capacity and pursue larger funding opportunities as they may arise in near future. For this round, applications in the following thematic areas will be considered:

- Canadian and Global Groundwater Sustainability
- Food-Water Nexus
- Remote Sensing
- Science Communication
- Water Policy and Diplomacy



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GIWS Grants

Capacity Building Grants

Value and Duration of Award: At least 1 project will be funded within each theme. 50% of the total proposal budget will be funded for a maximum of up to \$100K over 2-years. A total of \$500K is available in this round. Leveraged/ matching funds (cash) could be secured from any sources including, scholarships, fellowships, internal and external (academic, government, for-profit, not-for-profit) institutions/ agencies. GIWS will provide reasonable administrative support to successful project proposals.



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GIWS Grants

Postdoctoral Fellowships

Value and Duration of Award: A total of two postdoctoral fellowships are available at \$75K per postdoctoral fellow per year for two years i.e. \$150K per postdoctoral fellow. A total of \$300K is available in this round.



Global Institute for
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what about water?

Podcast | Education
Films | Outreach



- **Top Water Podcast in North America**
 - entering our 4th season
 - 34 episodes + bonus episodes
 - 100,000 + listens on all platforms
- **Millions of impressions on social media**
- **Youth and International Film Prize and Festival that was viewed 100,000 times by people in over 100 countries**
- **250 Submissions from 50 countries**
- **Shoot-A-Short Workshops, Media and Science Literacy, Education and Outreach for thousands**

We are taking action

Since June 1, 2021

- CFI-MSI on network of sites funded
- CREATE on Food-Water funded
- Water signature area presentation and renewed
- NFRF-T on Global Groundwater Sustainability LOI invited for full proposal
- CRC-Tier 1 in Remote Sensing moving forward
- Campus-wide discussions on Prairie Resilience Center
- Coordinated teaching discussions with OVPA
- What About Water outreach
- Water Day on the Hill
- Sci-comm micro-credential with SENS
- Irrigation micro-credential with AgBio and Engineering
- New strategic partnerships

































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Water Resources

200 Institutions

Search a university

World Rank	Institution	Country/Region	Total Score	Q1
1	 ETH Zurich		301.2	95.1
2	 University of Arizona		290.0	84.5
3	 Beijing Normal University		279.2	96.6
4	 Texas A&M University		278.5	89.2
5	 Wuhan University		273.5	92.3
6	 Hohai University		271.5	99.5
7	 University of New South Wales		262.7	88.6
8	 Delft University of Technology		254.3	100
10	 University of Illinois at Urbana-Champaign		248.9	73.4
11	 Northwest A&F University		248.6	91.5
12	 University of California, Davis		246.5	76.5
13	 University of Bristol		245.9	67.3
13	 University of California, Irvine		245.9	54.3
15	 University of Saskatchewan		243.9	74.5
16	 University of Colorado at Boulder		241.8	66

We're #15 in the world!!!

We're making progress!

USask water retains #1 spot in Canada for university water resources programs, but jumps 5 spots, from #20 to #15 globally in the 2021 Shanghai Rankings.

Thank you!



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