GeoHealth

FIELD GUIDE



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Welcome

The GeoHealth program will have a robust presence at Fall Meeting 2019, and we invite those from all disciplines to engage with the diverse set of scheduled activities. This field guide highlights some of the offerings at Fall Meeting throughout the week. Use it as a guide to help plan your week and learn about the latest GeoHealth findings.

The GeoHealth program at Fall Meeting will cover critical cross-cutting scientific topics, including:

- Climate impacts on health
- Water and air pollution
- Modeling infectious disease dynamics
- · Disaster risk reduction
- Vulnerable populations and environmental justice

Monday 9 December



Multimedia
Measurements and
Methods, SystemsLevel Fate, Transport,
and Exposure Modeling,
Human and Ecosystem
Health, Remediation, and
Science Communication

8:00 am – 12:20 pm Moscone South – Poster Hall

Per- and polyfluoroalkyl substances (PFAS) are used in a wide array of consumer and industrial products, and have been found in air, soil, water, and biota. Nearly all humans are exposed to these contaminants. Continued exposure above specific levels to certain PFAS may lead to adverse health effects. While an understanding of the occurrence, fate and transport, and exposure is rapidly evolving, there is a substantial need for additional information on these chemicals.

Monitoring, Modeling, and Forecasting Health Impacts of Fire Emissions

4:00 – 6:00 pm Moscone West – 2020, L2

Fire is one of the most dominant ecosystem disturbance agents and landscape management tools worldwide. Biomass burning produces a large volume of pollutants which can be transported over thousands of miles or occur in proximity to populated areas and have a substantial impact within their immediate surroundings. In this session we invite research projects quantifying emissions, atmospheric transport, and exposure levels to wildfire emissions at local to regional scales as well as explicit linkages to health outcomes.

Special Series on Water, Health, and Policy

Convergent research emphasizes deeply integrated, cross-disciplinary partnerships that address specific and compelling societal problems. To exemplify this, Hydrology, GeoHealth, Biogeosciences, and the Societal Impacts and Policy Sciences (SIPS) AGU sections have co-organized a program to explore challenges around water, health, and policy.

Water in the Coupled Earth-Human System: Convergent Science Addressing Societal Water and Health Needs

10:20 am – 12:20 pm Moscone West – 2020, L2

Water in the Coupled Earth-Human System: Convergent Science Addressing Societal Water and Health Needs

1:40 – 6:00 pm Moscone South – Poster Hall

Water in the Coupled Earth-Human System: Convergent Science, Decision-Making, and Community Action

4:00 – 6:00 pm Moscone South – 303–304, L3

Water in the Coupled Earth-Human System: Leveraging Convergence to Move Science to Action to Support a Healthy Environment and Safe Water System

6:15 – 7:15 pm Moscone West – 3002, L3

Tuesday 10 December



Water Is Life: Understanding Geogenic Groundwater Contamination and Improving Public Health

8:00 - 10:00 am | Moscone West - 2020, L2

Through advances in assessments, water quality modeling, and water supply management, geogenic contamination of groundwater is a global public health crisis and is threatening the success of the UN SDG6. The session includes abstracts that investigate geogenic ('naturally occurring') contaminants and the impact of compromised water resources on public health.

Satellites at the Intersection of Health and Air Quality: Seeing What You Breathe and Understanding Disease Exposures: NASA Earth Observation Systems and Applications for Public Health, Air Quality, Environmental Management, and Public Outreach

4:00 - 6:00 pm | Moscone West - 2020, L2

This interdisciplinary panel will curate and discuss a wide suite of satellite data, products, and applications, including GOES, TEMPO, MAIA, TROPOMI, SENTINAL 4, GEMS, AQUA, and TERRA, with an emphasis on how these satellite data products can help shape research in solutions for health concerns.

AGU-AMS Joint Session on GeoHealth Grand Challenges: Detecting, Attributing, and Reducing the Global Burden of Disease from Environmental Exposures

8:00 am - 12:20 pm | Poster Hall: Moscone South

In celebration of the AMS and AGU's Centennial year, this co-sponsored session will highlight the historical contributions of past breakthroughs and look towards future discoveries to better manage growing grand challenges, including pollution, food- and water-security, climate change, and legacy contaminants.

SPECIAL EVENT

Protecting Lives from Extreme Flooding: A Conversation Across Health and Earth Science

2:30 – 3:30 pm Moscone West, Lobby, L2

AGU is hosting a special simulcast event at Fall Meeting that highlights the important contributions of transdisciplinary science in building resilience to extreme floods. Communities from across Earth and space, health, medical, and disaster sciences will gather at Fall Meeting and in Washington, DC to network and explore ways to protect our communities through the integration of science and practice.

Speakers:

- Ana Paula Barros, Duke University
- **Georges Benjamin**, American Public Health Association
- Lynn R. Goldman, George Washington University
- Aubrey K. Miller, National Institutes of Health
- Tommy Wells, District of Columbia Department of Energy & Environment

DON'T MISS — ALL WEEK

Centennial Central

Moscone South, Lower Level

A hub of discussions and activities around the future of science, Centennial Central will bustle throughout the week with scientific sessions featuring emerging and well-known scientists, showcase digital representations of science, offer multiple types of networking, and have an intimate presentation space to foster discussion. Be sure to check the mobile app for detailed programming, which will focus on a different area of science and theme each day.

Monday: Interior Earth: Habitability

Tuesday: Earth Covering: Habitability in a Changing Planet

Wednesday: It Is Rocket Science

Thursday: Earth and Space Science for the Future

Friday: Earth and Space Science for the Benefit of Humanity

Exhibit Hall

Moscone North, Hall F

Explore the latest products, services, and solutions from more than 300 exhibitors.

Monday: 6:00 – 8:00 pm

Tuesday: 10:00 am - 5:30 pm

Wednesday: 10:00 am - 5:30 pm

Thursday: 10:00 am – 5:30 pm

Friday: 9:30 am – 1:30 pm

Wednesday

11 December



Impacts of Mining, Coal Production, and Coal Combustion Residuals on Human and Planetary Health

8:00 - 10:00 am | Moscone West - 2020, L2

Mining for metals, coal, oil sands, industrial minerals, gemstones and rocks has been carried out since the dawn of civilization, providing wealth, energy and building materials, and underpinning social and industrial development. The aim of this session is to evaluate and summarize current knowledge of the adverse effects of resource extraction and the disposal of associated waste materials on critical planetary systems (air, soil, water) as well as human health.

Assessment of Global Climate Variability and Hydroclimatological Processes on Infectious Diseases 10:20 am – 12:20 pm | Moscone West – 2020, L2

Multiple environmental pathways have emerged from the climatic variability and extreme weather events, which have affected the state of well-being of human health. These phenomena have affected the spatiotemporal distribution of vector-borne diseases, water borne-diseases, and air-borne diseases through the influence on vectors by making the hosts more susceptible to diseases. This session will provide a platform to discuss the impacts of enhanced climatic variability on the spatiotemporal movement of diseases and the development of early warning systems.

Navigating a Career in GeoHealth 11:00 am - 12:00 pm | Career Center Theater

The field of GeoHealth is a new discipline that is emerging at the intersection of public health and environmental sciences. But how do you navigate a career in GeoHealth? This session provides a platform for early-career researchers and students to learn about expectations and opportunities, differences in research, and interdisciplinary collaborations.

Extreme Heat:
Understanding
Vulnerability, Risk, and
the Implications for
Policy, Individual and
Community Health,
Economics, and Natural
Resources

1:40 – 3:40 pm Moscone West – 2020, L2

Extreme heat events adversely affect human health, agriculture, energy consumption, and the economy. The frequency and the extent of these events have been increasing, and these trends are expected to worsen as greenhouse gases continue to accumulate in the atmosphere. This session will focus on the many pathways through which extreme heat affects public health, natural resources, and the economy, including those shaped by socio-economics and the built environment.

DON'T MISS — ALL WEEK

Poster Hall

8:00 am – 6:00 pm Moscone South, Halls A–C

Explore the latest scientific discoveries and debate the findings with your colleagues. The Poster Hall is organized into scientific neighborhoods to make it easier for you to identify interdisciplinary connections and relevant posters.

AGU Central

Moscone North, LL

Check the Mobile App for daily hours. Learn more about your membership benefits, pick up new AGU100 merchandise, take part in a variety of Centennial activities, or check out one of the AGU Central stage presentations. Visit the photo booth and capture your own Centennial souvenir!

Gabriel Fillippelli, Editor in Chief, GeoHealth: What is GeoHealth and Why do We Care?

Wednesday, 11 December 1:00 - 2:00 pm AGU Central, Moscone North, LL

Thursday

12 December



Geochemistry to Health: Linking Geoscience to Exposures and Health Impacts of Nutrients and Toxicants

10:20 am – 12:20 pm Moscone West – 2020, L2

Both metals and organic chemicals are released to the environment via natural and anthropogenic activities. Many of them are pollutants that pose harmful effects on ecosystem and human health. This session will bring together environmental scientists. ecologists, geoscientists, and epidemiologists under the discussion of Geohealth. We welcome presentations covering new advancements in linking environmental sources and biogeochemical processes to health relevant impacts of any toxicants or nutrients, with particular interests in studies looking at the influence of global changes.

Earth Science Data Access and Integration at the Nexus of Science, Policy, and Society

1:40 – 3:40 pm Moscone South – Hall D, Centennial Central

Earth Science Data Access and Integration at the Nexus of Science, Policy, and Society Growing volumes of Earth science data have enabled unprecedented studies of Earth system dynamics and their changes over time. These data are increasingly provided in near-real-time, facilitating monitoring and forecasting tools with a variety of societal applications. This data integration offers opportunities for novel transdisciplinary research and applications. However, these efforts are also fraught with a variety of significant challenges.

Earth System Interactions and Implications for Geohealth / eLightning

4:00 – 6:00 pm Moscone South – eLightning Theater I

Knowledge of the multiple interactions among ocean, land, and atmosphere is essential to understand many critical geohealth issues, including the outbreaks of infectious diseases. health and safety impacts of air- and water-borne pollutants and pathogens. This session encourages observational and modeling studies of key processes of the Earth system (ocean, land, atmosphere) and how these processes interact to affect human and ecosystem health

DON'T MISS — ALL WEEK

Sketch Your Science

All week starting at 8:00 am Sharing Science Room, <u>Moscone West</u>, 2001A

Ever imagined your research as a piece of art? How about just being able to provide a visual abstract? Then Sketch Your Science during Fall Meeting 2019! Look for sketches on Twitter using #sketchyourscience, #AGU19, and #sharingscience.

Stop by the Sharing Science Room all week for programming on social media, podcasting, and how to communicate your science.



AGU FALL MEETING 100 | San Francisco, CA | 9-13 December 2019

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