

2013-14 EOS Experts Guide

Institute for the Study of Earth, Oceans, and Space



University of
New Hampshire

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The EOS Experts Guide lists faculty research expertise within the University of New Hampshire's Institute for the Study of Earth, Oceans, and Space (EOS).

Brief biographies of scientists from the three EOS centers — the Earth Systems Research Center, Ocean Process Analysis Laboratory, and the Space Science Center — provide areas of specialty, research interests, credentials, and contact information. Experts can also be found by means of an alphabetical directory organized by research topic and associated faculty name.

Press Contacts

Our public information staff can connect you to the appropriate source for a story and assist you in meeting your press deadline.

David Sims, Science Writer

The Institute for the Study of Earth, Oceans, and Space
603-862-5369, david.sims@unh.edu

Other Resources

Faculty biographies are on the web at
www.eos.unh.edu/faculty/fac.shtml

News releases for the Institute for the Study of Earth, Oceans, and Space are posted to the web at www.eos.unh.edu/news/recent_eos_news.shtml

EOS Administration

Harlan Spence, Director

603-862-0322, harlan.spence@unh.edu

Experts Directory

(topic, faculty name)

EARTH SCIENCE

- Aerosol Chemistry** – Dibb, Pszenny
- Agricultural Ecosystem** – Asbjornsen, Frolking, Li, Varner
- Air Quality** – Dibb, Ollinger, Pszenny, Wake
- Aquatic Ecosystems** – Wollheim
- Arctic Hydrology** – Lammers, Shiklomanov
- Atmospheric Chemistry** – Dibb, Pszenny
- Biogeochemical Modeling** – Frolking, Li, Ollinger
- Biogeochemistry** – Li, Ollinger, Varner, Wolheim
- Botany** – Rock
- Carbon Cycle** – Varner, Xiao
- Climate Modeling** – Huber, Wake
- Climate Records from Deep Sea Cores** – Huber
- Climate Records from Ice Cores** – Wake
- Climate Change** – Huber, Kirshen, Rock, Wake
- Forest Ecosystem** – Aber, Asbjornsen, Hobbie, Martin, Ollinger, Rock, Varner, Xiao
- Forest Policy, Economics, and Management** – Gorte
- Glaciology** – Wake
- Global & New England Atmospheric Chemistry** – Dibb, Pszenny, Varner
- Global Change** – Aber, Asbjornsen, Huber, Ollinger, Rock, Wake, Xiao
- Global Climate Change and Forests** – Asbjornsen, Gorte, Hobbie, Huber, Ollinger, Palace, Rock, Xiao
- Global Hydrologic Cycle** – Huber, Lammers, Shiklomanov
- Greenhouse Gas Emissions** – Frolking, Huber, Li, Varner, Wake
- Human and Ecosystem Health** – Huber, Wake
- Land Use-Land Cover Change** – Frolking, Shiklomanov, Xiao
- Marine Atmospheric Chemistry** – Pszenny, Varner
- Modeling: Ecosystem, Biogeochemical, and Hydrological** – Aber, Frolking, Huber, Lammers, Li, Ollinger, Wollheim, Xiao
- Mycology** – Hobbie
- New England Climate** – Wake
- Remote Sensing** – Martin, Ollinger, Rock, Palace, Xiao
- Snow Chemistry** – Dibb, Wake
- Terrestrial Ecosystems** – Asbjornsen, Hobbie, Frolking, Ollinger

Trace Gases – Dibb, Pzenny, Varner

Tropical Ecology – Asbjornsen, Palace

Urban Climate Change Impacts and Adaptation – Kirshen

Water Quality – Wollheim

Water Resources – Asbjornsen, Lammers, Shiklomanov, Wollheim

OCEAN SCIENCE

Air-Sea Interaction – Huber, Vandemark

Biological Oceanography – Salisbury

Chemical Oceanography – Kalnejais, Salisbury

Fisheries – Glass

Ocean Biogeochemistry – Huber, Salisbury

Ocean Observing Systems – Salisbury, Vandemark

Ocean Policy – Glass

Ocean Remote Sensing – Salisbury, Vandemark

Oceanic Carbon Cycle – Salisbury, Vandemark

Physical Oceanography – Huber, Pringle, Vandemark

SPACE SCIENCE

Astronomy/Astrophysics – Bloser, Chandran, Chupp, Connell, Forbes, McConnell, Möbius, Ryan, Schwadron, Spence, Vasquez

Atmosphere of Sun – Chandran, Hollweg

Aurora and Ionosphere – Chen, Farrugia, Lessard, Raeder, Spence, Torbert

Balloon Experiments – Bloser, Bravar, McConnell

Clusters of Galaxies – Chandran

Connection Between Laboratory and Space Physics – Chen, Möbius, Torbert

Comets – Raeder, Schwadron

Cosmic Rays – Bravar, Chandran, Connell, Lee, Lopate, McKibben, Ryan, Schwadron, Spence

Earth's Atmosphere – Bravar, Raeder, Ryan

Earth-Sun Connections – Chen, Farrugia, Galvin, Lessard, Schwadron, Smith, Torbert

Fusion Plasmas – Ebrahimi

Gamma Ray Astronomy – Bloser, Chupp, McConnell, Ryan

Geomagnetic Storms – Farrugia, Lessard, Raeder, Spence

Interstellar Gas/Medium – Chandran, Kucharek, Möbius, Schwadron, Spence

Magnetosphere – Chen, Farrugia, Kistler, Kucharek, Lessard, Raeder, Spence, Torbert

Particles in Space – Chen, Galvin, Kucharek, Lee, Lessard, McKibben, Möbius

Solar Flares – Chandran, Farrugia, Forbes, Kucharek, McConnell, Möbius

Solar Flare X-rays, Gamma rays and Neutrons – Bloser, Bravar, Chupp, Ryan, McConnell, Schwadron

Solar Particles – Bravar, Connell, Galvin, Lee, Lopate, McKibben, Möbius, Ryan, Schwadron, Spence

Space Weather – Farrugia, Galvin, Raeder, Schwadron, Smith, Spence, Torbert

Solar Wind – Chandran, Galvin, Hollweg, Isenberg, Kucharek, Möbius, Schwadron, Smith, Vasquez

Turbulence – Chandran

EOS Faculty Profiles

EARTH SCIENCE

John Aber, Affiliate Professor

Forest Ecosystem Analysis

<http://www.eos.unh.edu/Faculty/jda>

603-862-3045, john.aber@unh.edu

Best Contact Times: Afternoons, prefers phone calls

Affiliation: Department of Natural Resources and the Environment, EOS

Research Interests: Forest ecosystems, nitrogen cycling, forest responses to acid rain, impacts of climate change, atmospheric concentrations of carbon dioxide and ozone

Region of Focus: Eastern U.S., Ireland

Credits: Ph.D. from Yale University; Associate Editor for *Ecosystems*; Co-chair of the Forest Sector of the U.S. National Environmental Assessment; Served as Associate Editor for *Biogeochemistry*, *Trees: Structure and Function*, the *Canadian Journal of Forest Research*, and the *Journal of Near Infrared Reflectance Spectroscopy*; Former panel member of the Ecosystem Studies Program of the National Science Foundation

Heidi Asbjornsen, Associate Professor

Ecosystem Ecology, Plant Ecophysiology, Ecohydrology, Agroecology

<http://www.eos.unh.edu/Faculty/hasbjornsen>

603-862-1011, heidi.asbjornsen@unh.edu

Best Contact Times: Prefers email

Affiliation: EOS, Department of Natural Resources and the Environment

Research Interests: Effects of land use and climate change on terrestrial ecosystems; water-carbon-nutrient cycle linkages; plant water relations across multiple scales

Region of Focus: New England, Mexico, Iowa, Central America

Credits: Ph.D. from Yale University

**Jack E. Dibb, Research Associate Professor and
Director, Earth Systems Research Center (ESRC)
Snow Chemistry, Transport of Pollutants**

<http://www.eos.unh.edu/Faculty/jackdibb>

603-862-3063, jack.dibb@unh.edu

Best Contact Times: Prefers email

Affiliation: EOS, Department of Earth Sciences

Research Interests: Chemical cycling; processes controlling exchange of chemicals between air and snow; regional transport of pollutants

Region of Focus: Greenland, Antarctica, New England

Credits: Ph.D. from SUNY-Binghamton; Directs counting facilities in the Keck Laboratory

**Steve Frolking, Research Professor
Greenhouse Gas Emissions from Terrestrial Ecosystems**

<http://www.eos.unh.edu/Faculty/stevef>

603-862-0244, steve.frolking@unh.edu

Best Contact Times: Mornings 8 - 10 a.m., prefers email

Affiliation: EOS, Department of Earth Sciences

Research Interests: Greenhouse gas emissions from croplands; biogeochemical modeling; sensitivity of boreal forest carbon exchange to climate and weather variability; carbon budget of northern peatlands; land use in China and its impacts; mapping land use

Region of Focus: China, boreal ecosystems

Credits: Ph.D. from University of New Hampshire; Member of the IPCC/OECD Expert Group on N₂O from Agricultural Soils; Post-Doctoral Fellowship in the NOAA Program in Climate and Global Change

**Ross Gorte, Affiliate Research Professor
Forest Management Policy**

603-862-2927, rosswgorte@comcast.net

Best Contact Weekdays 9 a.m. - 4:30 p.m.

Affiliation: EOS

Research Interests: Forest management and economics, forest law/regulation/policy, wildfire control and impacts, wilderness protection and management, community impacts of resource use, and government payments for tax-exempt lands

Region of Focus: Federal lands, particularly western U.S.

Credits: Ph.D. from Michigan State University, retired specialist with the Congressional Research Service

Erik Hobbie, Research Associate Professor

Forest Ecosystems

<http://www.eos.unh.edu/Faculty/hobbie>

603-862-3581, erik.hobbie@unh.edu

Best Contact Times: Mornings

Affiliation: EOS, Department of Natural Resources and the Environment

Research Interests: Forest ecosystems, nitrogen cycling, forest biogeochemistry, fungi, stable isotopes, ecological modeling

Region of Focus: Arctic, Northeastern U.S., coniferous forests

Credits: Ph.D. from University of Virginia, post-doctoral positions at the U.S. Environmental Protection Agency and at the Max Planck Institute for Biogeochemistry; Bullard Fellow at Harvard University

Matthew Huber, Professor

Climate Dynamics, Impacts Prediction

<http://web.ics.purdue.edu/~huberm>

matthew.huber@unh.edu

Best Contact Times: Afternoons, email only

Affiliation: EOS, Department of Earth Sciences

Research Interests: Global and regional climate change: past, present, and future; impacts and interactions of climate with human and natural systems; planetary climates

Credits: Ph.D. from University of California Santa Cruz; PI or co-PI on multiple NSF grants; Editor *Earth System Dynamics*, Associate Editor *Geochemistry, Geophysics and Geosystems*; Former Co-chair of the NCAR Community Climate System Model Paleoclimate Working Group (2004-2006); Research on tropical cyclones and global warming highlighted as one of the top 100 scientific stories of 2007 (#37) by Discover Magazine (January 2008); Research on Cretaceous-Tertiary impact highlighted as one of the 100 top scientific discoveries of 2004 by Discover Magazine (Jan. 2005)

Paul Kirshen, Research Professor

Environmental Engineering

<http://www.unh.edu/civil-engineering/dr-paul-kirshen>

603-862-4637, paul.kirshen@unh.edu

Best Contact Times: 10 a.m. to 6 p.m.

Affiliation: EOS and Department of Civil Engineering

Research Interests: Research in developed and developing countries on integrated water resources management, climate change impacts and adaptation, water resources operations, decision support systems, coastal watersheds, and urban water systems

Credits: Ph.D. from the Massachusetts Institute of Technology

Richard Lammers, Research Associate Professor
Hydrology and Water Resources

<http://www.eos.unh.edu/Faculty/lammers>

Richard.Lammers@unh.edu

Best Contact Times: Afternoons, prefers email

Affiliation: EOS/Water Systems Analysis Group

Research Interests: Understanding the high latitude hydrological cycle; convergence of human and biogeophysical datasets, modeling, and analysis; global-scale hydrometeorology; uncertainty of estimates based on future scenarios; physically-based hydrological models; Spatial datasets and geoprocessing; river networks; techniques of Internet-based data serving and analysis

Region of Focus: Arctic, high latitudes, global

Credits: Ph.D. from University of Toronto; Co-Director Water Systems Analysis Group

Changsheng Li, Research Professor
Biogeochemistry

<http://www.eos.unh.edu/Faculty/li>

603-862-1771, changsheng.li@unh.edu

Best Contact Times: Afternoons, prefers email

Affiliation: EOS, Department of Natural Resources and the Environment

Research Interests: Carbon and nitrogen biogeochemical cycles in terrestrial ecosystems; modeling soil trace gas emissions; effect of trace elements on human health; agricultural crop production and fertilizer efficiency; nitrogen contamination in water

Region of Focus: China, U.S.

Credits: Ph.D. from Chinese Academy of Sciences and the University of Wisconsin; Organized the first interdisciplinary research team to study effects of trace elements on human health in China; Former Deputy Director of the Research Center for Eco-Environmental Sciences at the Chinese Academy of Sciences; Former Senior Official of the National Environmental Protection Agency of China

Mary Martin, Research Assistant Professor
Forest Ecosystems

<http://www.eos.unh.edu/Faculty/mem>

603-862-4508, mary.martin@unh.edu

Best Contact Times: Afternoons 2 - 4 p.m., prefers email

Affiliation: EOS, Department of Natural Resources and the Environment

Research Interests: Hyperspectral remote sensing, information management

Region of Focus: Northeastern U.S., Hubbard Brook Experimental Forest

Credits: Ph.D. from the University of New Hampshire; Hubbard Brook Long-Term Ecological Research Information Manager

**Scott V. Ollinger, Professor and Associate Director,
Institute for the Study of Earth, Oceans, and Space
Terrestrial Ecosystems and Biogeochemistry**

<http://www.eos.unh.edu/Faculty/sollinger>

603-862-2926, scott.ollinger@unh.edu

Best Contact Times: Afternoons, prefers email

Affiliation: EOS, Department of Natural Resources and the Environment

Research Interests: Ecosystems, climate change, carbon cycling, forest productivity; effects of rising CO₂, nitrogen deposition, air pollution and acid rain; remote sensing; ecological modeling, ecosystem-climate feedbacks

Region of Focus: North America, Northeastern U.S., White Mountain National Forest

Credits: Ph.D. from the University of New Hampshire; Director, National Ecological Observatory Network (NEON); Principal Investigator, NASA North American Carbon Program; Science team member NASA HypIRI satellite mission; Contributor, Northeastern Climate Impacts Analysis; Elected member of the Northeastern Ecosystems Research Cooperative Steering Committee; Member of the Hubbard Brook Research Foundation's Science Links Program; Former member of the US EPA Clean Air Act Ecological Effects Subcommittee; Former Science Advisor for the New York State Energy Research and Development Authority (NYSERDA); Former Associate Editor for *Biogeochemistry*; Expert Reviewer for the IPCC Regional Climate Change Impact Assessment

**Michael Palace, Research Assistant Professor
Tropical Ecology and Remote Sensing of Biometric Properties**

<http://www.eos.unh.edu/Faculty/mpalace>

603-862-4193, michael.palace@unh.edu

Best Contact Times: irregular hours, prefers email

Affiliation: EOS, Department of Natural Resources and the Environment

Research Interests: Tropical forests and savannas, archaeology, eco-epidemiology, remote sensing theory, pollination networks, primate ecology

Region of Focus: South and Central America, New England

Credits: Ph.D. from University of New Hampshire

Alex Pszenny, Research Associate Professor

Atmospheric Chemistry

<http://www.eos.unh.edu/Faculty/alexanderpsz>

603-862-1994, alex.pszenny@unh.edu

Best Contact Times: Mornings, prefers email

Affiliation: EOS

Research Interests: Multiphase atmospheric chemistry; biogeochemical cycles of nitrogen, sulfur and halogens; air/sea chemical exchange; chemistry of the marine atmosphere

Region of Focus: global

Credits: Ph.D. from University of Rhode Island; Former Chief Scientist for the Mount Washington Observatory; Former Research Oceanographer in the Ocean Chemistry Division at NOAA Atlantic and Meteorological Laboratory; Former Executive Officer of the International Global Atmospheric Chemistry (IGAC) Project; Former Director of the Atmospheric Chemistry Program at the National Science Foundation; Editor for “Atmospheric Chemistry and Physics”

Barrett N. Rock, Professor Emeritus

Global Climate Change and Forests

<http://www.eos.unh.edu/Faculty/barrettrock>

603-862-2949, Rock.bg@comcast.net

Best Contact Times: Afternoons, prefers email

Affiliation: EOS, Department of Natural Resources and the Environment

Research Interests: Remote sensing of vegetation; mapping forest species; environmental outreach and K-12 education; regional impact of climate change

Region of Focus: Eastern U.S., Eastern Europe

Credits: Ph.D. from the University of Maryland; Former site botanist for NASA/Geosat remote sensing study in West Virginia; Former group leader of the Geobotanical Remote Sensing Program at the Jet Propulsion Laboratory; Former Senior Scientist and Assistant Director of the GLOBE Program; Coordinator of the New England Regional Assessment of the Potential Consequences of Climate Variability and Change; forest decline and recovery in Central Europe (Czech Republic and Poland)

**Alexander Shiklomanov, Research Assistant Professor
Hydrology and Water Resources, Analysis and Modeling**

<http://www.eos.unh.edu/Faculty/ashiklomanov>

603-862-4387, alex.shiklomanov@unh.edu

Best Contact Times: Afternoons, prefers email

Affiliation: EOS, Water Systems Analysis Group; Arctic and Antarctic Research Institute, St. Petersburg, Russia

Research Interests: Hydrological monitoring systems, water balance and streamflow routing models, human activity and its influence on hydrology, climate change and hydrological systems, effect of land cover and land use change on hydrology

Region of Focus: Northern Eurasia, pan-Arctic, global

Credits: Ph.D. from Russian State Hydrometeorological University, St.Petersburg

**Ruth K. Varner, Associate Professor
Biogeochemistry, Trace Gas Exchange in Terrestrial Ecosystems**

<http://www.eos.unh.edu/Faculty/ruthvarner>

603-862-0853, ruth.varner@unh.edu

Best Contact Times: Afternoons

Affiliation: EOS, Department of Earth Sciences

Research Interests: Methyl halogen cycling in terrestrial ecosystems, production of hydrocarbons and halocarbons in the coastal ocean, carbon dioxide, methane and nitrous oxide fluxes from boreal, temperate and tropical forest soils

Region of Focus: Coastal New England, Brazil, boreal forest

Credits: Ph.D. from University of New Hampshire; Director, Joan and James Leitzel Center; Director, Northern Ecosystems Research for Undergraduates program

**Cameron P. Wake, Research Associate Professor
Climate Records, Air Quality/Human Health Interactions**

<http://www.eos.unh.edu/Faculty/cameronwake>

603-862-2329, cameron.wake@unh.edu

Best Contact Times: 9 a.m.- 5 p.m., phone or email

Affiliation: EOS, Department of Earth Sciences, Sustainability Institute

Research Interests: Ice core and instrumental climate records, climate change in the Arctic and New England due to natural and anthropogenic causes, adaptation and mitigation climate change

Region of Focus: Himalayas, Canadian Arctic, New England

Credits: Ph.D. from University of New Hampshire; Involved in research expeditions to Nepal, China, Pakistan, and the Canadian Arctic; Director, Carbon Solutions New England

Wilfred Wollheim, Assistant Professor

Aquatic Biogeochemistry, Modeling

<http://wsag.unh.edu/Wollheim/wollheim.html>

603-862-0812, wil.wollheim@unh.edu

Best Contact Times: Afternoons, prefers e-mail

Affiliation: Department of Natural Resources and the Environment; EOS/Water Systems Analysis Group

Research Interests: Aquatic biogeochemistry, aquatic ecosystem services, modeling river network dynamics, impacts of land use change and climate change

Region of Focus: Focus: Ipswich and Parker Rivers (MA), Great Bay Watershed (NH/ME), Gulf of Maine watershed, New England, Northeastern U.S., Continental US, Arctic Alaska, global

Credits: Ph.D. from the University of New Hampshire; Co-Director Water Systems Analysis Group

Jingfeng Xiao, Research Assistant Professor

Remote Sensing and Modeling of Terrestrial Ecosystems and Carbon Cycle

<http://www.eos.unh.edu/Faculty/jingfengxiao>

603-862-1873, j.xiao@unh.edu

Best Contact Times: Afternoons, prefers e-mail

Affiliation: EOS

Research Interests: remote sensing, terrestrial carbon cycle, ecological modeling, vegetation dynamics, land cover/land use change, disturbances, and human-environment interactions

Region of Focus: North America, China, global

Credits: Ph.D. from the University of North Carolina at Chapel Hill

OCEAN SCIENCE

Christopher Glass, Research Professor and Director, Northeast Consortium

Fisheries, Fish Behavior

<http://www.eos.unh.edu/Faculty/christopherg>

603-862-0122, chris.glass@unh.edu

Best Contact Times: Weekdays, prefers email

Affiliation: EOS

Research Interests: Ecosystem sensitive fish harvesting technology, fish behavior in relation to fishing gear, sustainable resource use through conservation technology

Regions of focus: Coastal to open ocean

Credits: Ph.D. from University of Glasgow, Scotland; Former director of Marine Conservation at Manomet Center for Conservation Services, Manomet, Mass; Former senior scientist at the Marine Laboratory, Aberdeen, Scotland

Linda Kalnejais, Assistant Professor

Chemical Oceanography

<http://www.eos.unh.edu/Faculty/Kalnejais>

603-862-1008, linda.kalnejais@unh.edu

Best contact times: afternoon, prefers email

Affiliation: EOS, Department of Earth Science

Research Interests: Sediment geochemistry; chemistry of pollutants; trace metal geochemistry and coastal oceanography

Region of focus: coastal to open ocean

Credits: Ph.D. from the Massachusetts Institute of Technology and Woods Hole Oceanographic Institution Joint program; Former Post-Doctoral researcher at the University of California, Berkeley

James M. Pringle, Associate Professor

Physical Oceanography

<http://marine.unh.edu/people/faculty/pringle-james.html>

603-862-5000, jpringle@cisunix.unh.edu

Best Contact Times: Afternoons, prefers email

Affiliation: EOS, Department of Earth Sciences

Research Interests: Physics of coastal processes including waves and turbulence; understanding how basic physical processes affect coastal ocean biology

Region of Focus: Ocean

Credits: Ph.D. from the Massachusetts Institute of Technology and Woods Hole Oceanographic Institution Joint program; Former Post-Doctoral Fellow at the Scripps Institution of Oceanography

Joe Salisbury, Research Assistant Professor

Oceanography/Biogeochemistry

<http://www.eos.unh.edu/Faculty/joe>

603-862-0849, joe.salisbury@unh.edu

Best Contact Times: Weekday mornings

Affiliation: EOS, Department of Earth Sciences

Research Interests: distributions of carbon dioxide, air-sea carbon exchange and productivity in riverine-influenced coastal regions; using space-borne sensors to identify and classify estuarine and river plumes of the world.

Regions of Focus: Gulf of Maine, global ocean river plumes

Credits: Ph.D. University of New Hampshire

**Douglas C. Vandemark, Research Associate Professor;
Director, Ocean Process Analysis Laboratory, and
Director, Center for Coastal Ocean Observing and Analysis (COOA)**

Ocean Remote Sensing, Air-Sea Interaction

<http://www.eos.unh.edu/Faculty/douglasvande>

603-862-0195, doug.vandemark@unh.edu

Best Contact Times: Mornings, prefers email

Affiliation: EOS, Department of Earth Sciences, Department of Natural Resources and the Environment

Research Interests: Air-sea interaction, biogeochemical cycles of carbon, oceanic carbon dioxide flux, ocean observation using satellite sensors, ocean wave measurement and modeling

Regions of Focus: Gulf of Maine, global ocean

Credits: Ph.D. from University of New Hampshire; Member of NASA's Ocean Surface Topography Science Team; Former NASA/GSFC engineer and research scientist

SPACE SCIENCE

Peter F. Bloser, Research Assistant Professor

High-Energy Astronomy and Solar Physics

<http://www.eos.unh.edu/Faculty/pbloser>

603-862-0289, peter.bloser@unh.edu

Best Contact Times: Weekday afternoons, prefers email

Affiliation: EOS, Department of Physics

Research Interests: X-ray and gamma-ray emission from galactic binaries, pulsars, and solar flares; X-ray and gamma-ray polarimetry; advanced gamma-ray instrumentation for space and balloon platforms; application of gamma-ray and neutron detection technology to Homeland Security scenarios

Region of Focus: Space

Credits: Ph.D. from Harvard University; Investigator on several technology development and balloon-flight programs related to future NASA missions in high-energy astronomy and solar physics

Ulisse Bravar, Research Assistant Professor

Space Physics

<http://www.eos.unh.edu/Faculty/ubravar>

603-862-3868, ulisse.bravar@unh.edu

Best Contact Times: irregular hours, prefers email

Affiliation: EOS, Department of Physics

Research Interests: Galactic cosmic rays, gamma rays and solar energetic particles; advanced neutron instrumentation for space and balloon platforms; neutron detection technology for homeland security scenarios; neutrino oscillations & neutrino factories

Region of Focus: Space

Credits: Ph.D. from University of New Mexico

Benjamin Chandran, Professor

Theoretical Plasma Physics and Astrophysics

<http://www.eos.unh.edu/Faculty/benjaminchan>

603-862-2255, benjamin.chandran@unh.edu

Best Contact Times: Afternoons

Affiliation: EOS, Department of Physics

Research Interests: Turbulence, dynamos, shock acceleration, kinetic theory, plasma stability, wave-particle interactions

Regions of Focus: Clusters of galaxies, the solar corona and solar wind, solar flares, cosmic rays, the galactic center

Credits: Ph.D. from Princeton University

Li-Jen Chen, Research Assistant Professor

Space Plasma Physics

<http://www.eos.unh.edu/Faculty/li-jenchen>

603-862-0567, lijen.chen@unh.edu

Best Contact Times: 9AM-5PM

Affiliation: EOS, Department of Physics

Research Interests: Magnetic reconnection, magnetospheric substorms, electrostatic solitary waves, Alfvén waves

Region of Focus: Magnetic reconnection

Credits: Ph.D. from University of Washington

Edward L. Chupp, Professor Emeritus

Solar Flare Gamma-Rays and Neutrons

<http://www.eos.unh.edu/Faculty/edwardchupp>

603-862-2750, edward.chupp@unh.edu

Best Contact Times: Afternoons MTWTh 3 -5 PM., prefers email

Affiliation: EOS, Department of Physics

Research Interests: Astrophysics, Solar Flare particle acceleration, Gamma-ray astronomy

Region of Focus: The cosmos and space

Credits: Ph.D. from University of California-Berkeley; Collaborates with Naval Research Laboratory and the Paris Observatory (Meudon).

James J. Connell, Associate Professor

Comic Rays Astrophysics, Solar Energetic Particles and Space Instrumentation

<http://www.eos.unh.edu/Faculty/jamesconnell>

603-862-5096, james.connell@unh.edu

Best contact times: Mornings or afternoons, prefers initial email

Affiliation: EOS, Department of Physics

Research interests: Galactic cosmic rays, anomalous cosmic rays and solar energetic particles, including neutrons; space instrumentation; stellar and galactic nucleosynthesis and the origin of the elements; nuclear astrophysics

Region of Focus: Space

Credits: Ph.D. from Washington University in St. Louis; Co-Investigator on the Energetic Heavy Ion Sensor (EHIS) for the Geostationary Operational Environmental Satellite series-R (GOES-R); Co-Investigator of the COSPIN Consortium energetic charged particle instrument on the NASA/ESA Ulysses mission

Charles J. Farrugia, Research Professor

Solar Wind-Magnetosphere Coupling

<http://www.eos.unh.edu/Faculty/charlesfarr>

603-862-4596, charlie.farrugia@unh.edu

Best Contact Times: Afternoons

Affiliation: EOS, Department of Physics

Research Interests: Solar wind-magnetosphere interactions, magnetosphere-ionosphere coupling, auroral signatures of magnetopause processes, the magnetosheath, space weather, solar ejecta

Region of Focus: Interplanetary space, Earth's magnetosphere and ionosphere

Credits: D. Phil. from University of Bern, Switzerland

Terry G. Forbes, Professor Emeritus

Astrophysics / Solar-Terrestrial Physics

<http://www.eos.unh.edu/Faculty/tgforbes>

603-862-3872, terry.forbes@unh.edu

Best Contact Times: Afternoons, prefers phone calls

Affiliation: EOS, Department of Physics

Research Interests: Theory of solar flares, magnetospheric substorms, astrophysics, space physics

Region of Focus: Space

Credits: Ph.D. from University of Colorado; Associate Editor of *Solar Physics and Journal of Geophysical Research*; Member of American Geophysical Union, American Astronomical Society, The European Geophysical Society, the Royal Astronomical Society and the International Astronomical Union; Former scientist at Los Alamos National Laboratory; Former Research Fellow at University of St. Andrews, Scotland

Antoinette B. Galvin, Research Professor

Astrophysics, Outer Layers of the Sun

<http://www.eos.unh.edu/Faculty/antoinettega>

603-862-3511, toni.galvin@unh.edu

Best Contact Times: Afternoons, prefers email

Affiliation: EOS, Department of Physics

Research Interests: Solar wind composition, solar energetic particles, implications for the solar coronal processes

Region of Focus: The Sun

Credits: Ph.D. from University of Maryland; Involved with development of experiments on eight space missions including ISEE, ICE, Ulysses, Wind, Geotail, SOHO, ACE, and STEREO

Kai Germaschewski, Assistant Professor

Computational Plasma Physics

<http://www.eos.unh.edu/Faculty/kgermaschewski>

603-862-3869, kai.germaschewski@unh.edu

Best Contact Times: M-F 10 a.m. – 5 p.m. or by email

Affiliation: EOS, Department of Physics

Research Interests: Fluid and kinetic modeling of plasmas, magnetic reconnection, magnetospheric physics

Region of Focus: Development of highly scalable computational models, extended magnetohydrodynamics, adaptive mesh refinement and implicit time integration, modern architectures like GPUs, Intel MIC

Credits: Ph.D. University of Düsseldorf, Germany

Joseph V. Hollweg, Professor Emeritus

The Sun's Atmosphere

<http://www.eos.unh.edu/Faculty/josephhollwe>

603-862-3869, joe.hollweg@unh.edu

Best Contact Times: M-F 11:00-3:00

Affiliation: EOS, Department of Physics

Research Interests: Dynamics of the Sun's atmosphere and solar wind, physics of waves in the solar atmosphere, developing theoretical models

Region of Focus: The Sun, solar wind

Credits: Ph.D. from Massachusetts Institute of Technology; Involved with experimental programs on the SOHO mission; Former Principal Investigator of Solar Terrestrial Theory group; Recipient of the 1992 James Arthur Prize for Solar Physics; elected Fellow of the American Geophysical Union 2002

Philip A. Isenberg, Research Professor

Energization of Solar Wind

<http://www.eos.unh.edu/Faculty/pai>

603-862-3870, phil.isenberg@unh.edu

Best Contact Times: Afternoons, prefers email

Affiliation: EOS, Department of Physics

Research Interests: Solar wind acceleration, solar wind interactions with particles from comets and the inter-stellar medium, solar flares

Region of Focus: The Sun and interplanetary space

Credits: Ph.D. from University of Chicago; Member of the UNH Solar-Terrestrial Theory Group

Lynn M. Kistler, Professor and Director, Space Science Center

Magnetospheric Physics, Space Plasma Physics

<http://www-ssg.sr.unh.edu/tof/Team/kistler/Kistler.html>

603-862-1399, lynn.kistler@unh.edu

Best Contact Times: Afternoons 2-4 p.m., prefers email

Affiliation: EOS, Department of Physics

Research Interests: Sources, transport, and acceleration of magnetospheric particles; instrumentation for spacecraft; ions in space plasmas

Region of Focus: Space

Credits: Ph.D. from University of Maryland; Lead investigator for instrument on the German Equator-S satellite; Involved in CLUSTER and ACE missions

Harald Kucharek, Research Associate Professor

Solar Wind, Interstellar Gas, Magnetospheres

<http://www.eos.unh.edu/Faculty/haraldkuchar>

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Best Contact Times: Afternoons

Affiliation: EOS, Department of Physics

Research Interests: Acceleration of ions in interplanetary space, solar wind, interstellar gas, and physics of collisionless shocks

Region of Focus: Near-Earth Space, solar system and surrounding interstellar medium

Credits: Dr. rer. nat. from Technische Universitaet Muenchen, Research Scientist at the Max-Planck Institute for Extraterrestrial Physics in Germany, Involved in Cluster, ACE, SOHO, and IBEX missions

Martin A. Lee, Professor

Space Plasma Physics / Astrophysics

<http://www.eos.unh.edu/Faculty/martinlee>

603-862-3509, marty.lee@unh.edu

Best Contact Times: Afternoons, prefers email

Affiliation: EOS, Department of Physics

Research Interests: Space plasma processes in the solar system, behavior of energetic particles, solar wind

Region of Focus: Space

Credits: Ph.D. from University of Chicago; Member of UNH Solar-Terrestrial Theory Group; Pioneered the “shock surfing” mechanism to initiate acceleration of ions; Expert on ion diffusive shock acceleration; Co-investigator on the CELIAS instrument on the SOHO spacecraft, and the IBEX mission

Marc Lessard, Associate Professor

Space Physics

<http://www.eos.unh.edu/Faculty/marcessard>

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Best Contact Times: Weekday afternoons

Affiliation: EOS, Department of Physics

Research Interests: Interactions of the sun and the solar wind with Earth's magnetosphere and ionosphere. Research methods include ground-based observations of ultra-low frequency electromagnetic waves, which provide important information about the transfer of energy from the solar wind to the ionosphere, including auroral phenomena, and sounding rocket observations of auroral processes, causes, and effects

Region of Focus: Aurora and ionosphere, magnetosphere, Earth-sun connections; sounding rocket and ground-based instrumentation

Credits: Ph.D. from Dartmouth College

Clifford Lopate, Research Associate Professor

Cosmic Rays and Solar Energetic Particles

<http://www.eos.unh.edu/Faculty/cliffordlopa>

603-862-5101, clifford.lopate@unh.edu

Best Contact Times: Afternoons, prefers email

Affiliation: EOS, Department of Physics

Research Interests: Acceleration and transport of charged particles in the heliosphere, cosmic ray astrophysics, new detector development

Region of Focus: Heliosphere

Credits: Ph.D. from University of Chicago; Principal Investigator on the Energetic Heavy Ion Sensor (EHIS) for the Geostationary Operational Environmental Satellite series-R (GOES-R); Former NASA Graduate Student Researchers Program fellow; Principle Investigator on Climax/Haleakala neutron monitors

**Mark L. McConnell, Professor and Chair, UNH Department of Physics
High Energy Astronomy**

<http://astrophysics.sr.unh.edu/people/mcconnell>

603-862-2047, mark.mcconnell@unh.edu

Best Contact Times: Weekdays 8 a.m. - 4:30 p.m.

Affiliation: EOS, Department of Physics

Research Interests: Studies of X-ray and gamma-ray emission from black holes, neutron stars, white dwarfs, gamma-ray bursts and solar flares; Development of detector technologies for X-ray, gamma-ray and cosmic-ray astronomy (some of which may have dual application for medical imaging or nuclear waste management); Current focus is on the development of balloon-borne instrumentation for the measurement of gamma-ray polarization from gamma-ray bursts, solar flares, and other high-energy cosmic sources

Region of Focus: Space

Credits: Ph.D. from the University of New Hampshire; Has served as an investigator on several satellite projects sponsored by NASA and the European Space Agency, including the Compton Gamma-Ray Observatory (CGRO), the High Energy Solar Spectroscopic Imager (HESSI) and the International Gamma-Ray Astrophysics Laboratory (INTEGRAL); Has also served as an investigator on several technology development programs related to future NASA missions in high-energy astronomy

R. Bruce McKibben, Affiliate Professor

Energetic Charged Particles in the Heliosphere

<http://www.eos.unh.edu/Faculty/brucemckibbe>

603-862-5087, bruce.mckibben@unh.edu

Best Contact Times: Afternoons or by email

Affiliation: EOS, Department of Physics

Research Interests: Acceleration and propagation of energetic charged particles in the heliosphere, including galactic cosmic rays, solar energetic particles, particles accelerated by interplanetary shock waves, the so-called anomalous cosmic ray component, and particles accelerated in planetary magnetospheres; Studies of heliospheric structure using these particles as probes

Region of Focus: The heliosphere

Credits: Ph.D. from University of Chicago; Co-Investigator on the Energetic Heavy Ion Sensor (EHIS) for the Geostationary Operational Environmental Satellite series-R (GOES-R); former Senior Scientist in the Enrico Fermi Institute at the University of Chicago; Principal Investigator of the COSPIN Consortium energetic charged particle instrument on the NASA/ESA Ulysses Mission, which ended operations in 2009 after nearly 19 years in space and 3 passes over the Sun's polar regions; Co-Investigator on cosmic ray experiments on the now-completed Pioneer 10 (1972-2003) and Pioneer 11 (1973-1995) missions to Jupiter, Saturn, and beyond, and on the SPACe DUSt (SPADUS) experiment on the Earth-orbiting ARGOS P91-1 spacecraft (1999-2003)

Eberhard S. Möbius, Professor

Solar Flares, Solar Wind, Interstellar Gas

<http://www.eos.unh.edu/Faculty/eberhardmoeb>

603-862-3097, eberhard.moebius@unh.edu

Best Contact Times: Mornings 9 -11 a.m. except Mondays, prefers email

Affiliation: EOS, Department of Physics

Research Interests: Acceleration of ions in interplanetary space, solar flares, solar wind, interstellar gas, auroras

Region of Focus: Near-Earth Space, Solar System and surrounding Interstellar Medium

Credits: Ph.D. from Ruhr-Universität in Bochum; Former Research Scientist at the Max-Planck Institute for Extraterrestrial Physics in Germany; Involved with the AMPTE, Cluster, ACE, FAST, Equator-S, STEREO, and IBEX missions; Teaches general education classes on astronomy and cosmology

Joachim Raeder, Professor

Space Science, Space Weather, Magnetosphere

<http://www.eos.unh.edu/Faculty/joachimraede>

603-862-3412, J.Raeder@unh.edu

Best Contact Times: Mornings 10-12 a.m., phone or email

Affiliation: EOS, Department of Physics

Research Interests: Space weather, the solar wind-magnetosphere-ionosphere-thermosphere system, influence of cosmic rays and solar energetic particles on Earth's climate, cometary physics, magnetosphere constellation missions, high-performance computing

Region of Focus: Earth's space environment, atmosphere

Credits: Ph.D. from the University of Cologne (Germany); 13 years of research at UCLA; served on numerous NASA, NSF and NRC panels; Co-Investigator on NASA's THEMIS mission

James M. Ryan, Professor

Cosmic and Gamma Rays

<http://www.eos.unh.edu/Faculty/jamesryan>

603-862-3510, james.ryan@unh.edu

Best Contact Times: Afternoons, prefers email

Affiliation: EOS, Department of Physics

Research Interests: Cosmic and gamma rays, solar flares, Earth's atmosphere

Region of Focus: Space

Credits: Ph.D. from University of California-Riverside; Project Director for the COMPTEL experiment on the Compton Gamma-Ray Observatory

Nathan Schwadron, Associate Professor

Space Plasma Physics

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Best Contact Times: Afternoons, prefers email

Affiliation: EOS/Energetic Particle and Radiation Group, Department of Physics

Research Interests: Global heliospheric physics, solar wind formation, acceleration, and source; solar physics; solar flares, interstellar medium; science operations

Region of Focus: Heliosphere

Credits: Ph.D. from University of Michigan

Charles W. Smith, Research Professor

Space Plasma Physics

<http://www.eos.unh.edu/Faculty/charlessmith>

603-863-0890, Charles.Smith@unh.edu

Best Contact Times: Anytime, phone or email

Affiliation: EOS, Department of Physics

Research Interests: Solar wind, solar ejecta, cosmic rays and energetic particle acceleration, interplanetary turbulence, space weather, and the outer heliosphere

Credits: Ph.D. from William and Mary; Data Manager on ACE Magnetic Field Experiment; Experience with Voyager spacecraft

Harlan Spence, Professor

Director, Institute for the Study of Earth, Oceans, and Space

Space Plasma Physics

<http://www.eos.unh.edu/Faculty/spence>

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Best Contact Times: Mornings, prefers email

Affiliation: EOS, Department of Physics

Research Interests: Theoretical and experimental space plasma physics; cosmic rays and radiation belt processes; heliospheric, planetary magnetospheric, lunar, and auroral physics; space weather prediction and effects

Region of Focus: Terrestrial magnetosphere and ionosphere; interplanetary space; solar corona and solar wind; lunar space environment

Credits: M.S. and Ph.D. from University of California Los Angeles; B.A. from Boston University

**Roy B. Torbert, Professor and Director, Southwest Research Institute,
Earth, Oceans, and Space Department (SwRI-EOS)**

Ionospheric and Magnetospheric Physics

<http://www.eos.unh.edu/Faculty/roytorbert>

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Best Contact Times: Afternoons, prefers email

Affiliation: EOS, Department of Physics

Research Interests: The aurora, electric and magnetic fields in space, sounding rockets, solar system formation

Region of Focus: Space

Credits: Ph.D. from University of California-Berkeley; Involved in the NASA International Solar-Terrestrial Physics Program

Bernie Vasquez, Research Professor

Astrophysics, Solar-Terrestrial Physics

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Best Contact Times: Afternoons, prefers email

Affiliation: EOS, Department of Physics

Research Interests: Solar wind, Alfvén waves, discontinuities, ion kinetics, numerical simulations

Region of Focus: Space

Credits: Ph.D. from the University of Maryland; Member of UNH Solar-Terrestrial Theory Group

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