**Distinguished Faculty**

**Sushil Atreya,** Fellow, American Association for the Advancement of Science; Academican, International Academy of Astronautics  
**Stephen Bougher,** Andrew F. Nagy Collegiate Research Professor  
**Michael Combi,** Distinguished University Research Professor  
**R. Paul Drake,** Henry S. Carhart Collegiate Professor of Space Physics; Fellow, American Physical Society  
**Lennard A. Fisk,** Thomas M. Donahue Distinguished University Professor of Space Science; Former Chair, NAS Space Studies Board; Member, National Academy of Sciences; National Associate, National Research Council; Fellow, American Geophysical Union; Elected Member, International Academy of Astronautics; UM-CoE Award Atwood Excellence in Engineering; Henry Russel Lecturer  
**George M. Gloeckler,** Member, National Academy of Sciences; Fellow, American Geophysical Union; Fellow, American Physical Society; Member, American Association for the Advancement of Science; Elected Member, International Academy of Astronautics  
**Tamas I. Gombosi,** Rollin M. Gerstacker Professor of Engineering; Fellow, American Geophysical Union; Elected Member, International Academy of Astronautics; UM-CoE Award Atwood Excellence in Engineering; Inaugural Recipient, American Geophysical Union Space Weather Prize  
**Christiane Jablonowski,** Recipient, Department of Energy Early Career Award  
**Margaret Kivelson,** Member, National Academy of Sciences; Member, American Academy of Arts and Sciences; Fellow, American Geophysical Union; Recipient, European Geophysical Union Athan Medal; Recipient, American Geophysical Union Fleming Medal  
**Janet Kozyra,** George Carignan Collegiate Research Professor; Fellow, American Geophysical Union  
**Mark Moldwin,** Recipient, National Science Foundation CAREER Award  
**Andrew Nagy,** Fellow, American Geophysical Union; Elected Member, International Academy of Astronautics; UM-CoE Award Atwood Excellence in Engineering  
**Joyce Penner,** Ralph J. Cicerone Distinguished University Professor of Atmospheric Sciences; Fellow, American Geophysical Union; Contributor, UN Intergovernmental Panel on Climate Change; Co-recipient, ‘07 Nobel Peace Prize  
**Richard Rood,** Fellow, American Meteorological Society; Recipient, World Meteorological Organization Norbert Gerbier-Mumm International Award  
**Christopher Ruf,** Fellow, Institute of Electrical and Electronics Engineers; Recipient, IEEE Resnick Field Award  
**Perry Samson,** Arthur Thurnau Professor; Recipient, Teaching Innovation Prize; Michigan Distinguished Professor of the Year  
**Allison Steiner,** Recipient, National Science Foundation CAREER Award; Recipient, Henry Russel Award  
**Thomas Zurbuchen,** Recipient, Presidential Early Career for Scientists & Engineers Award; Member, NASA Space Studies Board

**Research Areas**

**Atmospheric Science Research Areas**

- Atmosphere – Biosphere Interactions
- Atmospheric Chemistry, Aerosols & Air Quality
- Atmospheric Dynamics
- Climate, Climate Modeling & Climate Change
- Clouds & Precipitation
- Paleoclimate, Ice Dynamics

**Atmospheric & Space Science Research Areas**

- Numerical Methods & Scientific Computing
- Planetary Atmospheres
- Statistical Methods & Data Assimilation
- Radiative Transfer, Remote Sensing & Instrumentation

**Space Science Research Areas**

- High Energy Density Physics/Laboratory Astrophysics
- Magnetospheric & Ionosphere/Thermosphere Physics
- Planetary Magnetospheres
- Solar & Heliospheric Physics
- Space Weather
- Aeronomy

For Faculty involved in these research areas: [http://aoss.engin.umich.edu/pages/research](http://aoss.engin.umich.edu/pages/research)
Program Description

In our increasingly technical world, a Master of Science (MS) degree is becoming the minimum accepted level of education for many career opportunities within the atmospheric and space sciences disciplines. To meet these requirements, the AOSS SGUS/MS program offers breadth, depth and hands-on experience tailored to the area of your interest, allowing you to optimize career opportunities in your area of interest. The SGUS/MS program can open doors that a BSE degree alone cannot.

Unlike traditional two-year MS programs, students within the SGUS/MS program "double count" nine credit hours from their BSE degree towards their AOSS MS degree, making it possible to complete the AOSS MS degree in one year. The program requires the successful completion of 128 total credits for the standard BSE degree, plus 30 credits for the MS degree. Each degree (BSE and MS) is awarded upon completion of the requirements for that specific degree. Students are required to apply to the AOSS SGUS/MS program during their senior year, prior to completion of their BSE degree. If minimum requirements are met, students will be granted provisional enrollment with full enrollment granted pending approval for admission to the Horace Rackham School of Graduate Studies. Students must subsequently enroll in the AOSS MS program for a minimum of two full terms and pay full graduate tuition for these terms.

Please note: You must be a current University of Michigan student to be admitted into the SGUS program.

Program Objectives

- To provide a comprehensive knowledge of atmospheric/space science and the various components of each system.
- To increase depth beyond the BSE degree level in an atmospheric or space related discipline.

Atmospheric Science Program

This is the study of atmospheric dynamics and physics to be used in developing new, more accurate techniques in atmospheric modeling and forecasting. AOSS atmospheric scientists and students are solving problems related to short- and long-term forecasting, air quality, atmospheric turbulence and convection, biogeochemical cycling, and precipitation processes, among a growing list of areas.

Space Science Program

This is the study of planetary, solar and cosmic weather to be used in determining the systemic relationships between a planet and its atmosphere. The Space Weather concentration prepares you to join the space industry, which is facing a severe workforce shortage. Positions in government agencies and federal laboratories that deal with space-related disciplines are also open to you.

Program Advisor

Dr. Frank Marsik
marsik@umich.edu

AOSS Partners in Research and Education (select list)

- Aerospace Corporation
- Air Force Research Laboratory
- Boeing Corporation
- Environment Canada
- European Space Agency
- Goddard Space Flight Center
- Great Lakes Environmental Research Laboratory
- Jet Propulsion Laboratory
- Johns Hopkins Applied Physics
- Johnson Space Center
- Lawrence Livermore National Laboratory
- Lockheed Martin
- Los Alamos National Laboratory
- Marshall Space Flight Center
- Michigan Department of Environmental Quality
- Michigan Department of Natural Resources
- NASA
- National Center for Atmospheric Research
- National Solar Observatory
- NOAA
- Northrup Grumman
- NSF
- National Weather Service
- Rice University
- Space Physics Research Laboratory
- Stanford University
- UC-San Diego
- University of Arizona
- University of New Hampshire
- US Department of Defense
- US EPA

“[I feel surprisingly equipped for the position I was hired for and know that the foundation I gained in Michigan will only better facilitate my progress into the future.]”