

## **Monitoring, Modeling, and Assessing the Environmental Effects of Changes in Solar UV Radiation and Climate**

Monday September 18<sup>th</sup>, 2023, 9:00 am to 5:30 pm

Horsetooth Rock Conference Room (Room #345), Michael Smith Natural Resources Building, Colorado State University

9:00 am – The Montreal Protocol and the scientific assessment of the effects of stratospheric ozone depletion and climate change, Dr. Paul Barnes, Department of Biological Sciences and the Environment Program, Loyola University; Co-Chair, UNEP Environmental Effects Assessment Panel.

9:05 am – The USDA UV-B Monitoring Network, Dr. Wei Gao, Director, USDA UV-B Monitoring and Research Program, Colorado State University, and Mr. George Janson, Research Associate, USDA UV-B Monitoring and Research Program, Colorado State University.

9:25 am – The benefits of the Montreal Protocol for stratospheric ozone, UV radiation, climate, and the biosphere, Dr. Germar Bernhard, Biospherical Instruments, Inc.

9:55 am – Skin cancers avoided in the USA by protecting the ozone layer, Dr. Sasha Madronich, Senior Scientist Emeritus, National Center for Atmospheric Research.

### **10:20 am - Morning Break**

10:30 am – Welcome and Introductions

10:50 am – Challenges in assessing the interactive effects of changes in climate and solar UV radiation on the environment, Dr. Paul Barnes, Department of Biological Sciences and the Environment Program, Loyola University; Co-Chair, UNEP Environmental Effects Assessment Panel.

11:20 am – Climate Intervention and Stratospheric Ozone: An Introduction, Dr. David Fahey, Director, NOAA Chemical Sciences Laboratory, Boulder Colorado USA.

### **11:50 am – Lunch Break**

1:20 pm – Ground-based measurements of aerosol absorption, Dr. Nickolay Krotkov, NASA Goddard Space Flight Center, Atmospheric Chemistry and Dynamics Laboratory.

1:50 pm – Satellite-based measurements of aerosol absorption, Dr. Omar Torres, NASA Goddard Space Flight Center, Atmospheric Chemistry and Dynamics Laboratory.

2:20 pm – Plastics, Microplastics, and UV Radiation, Dr. Anthony Andrady, Department of Chemical and Biomolecular Engineering, North Carolina State University.

### **2:50 pm – Afternoon Break**

3:00 pm – Crop Responses to Ultraviolet-B Radiation and Other Climatic Stresses, Dr. Raja Reddy, Director, Soil-Plant-Atmosphere-Research Facility; Professor, Department of Plant and Soil Sciences, Mississippi State University.

3:30 pm – Predicting Climate Impacts on U.S. Crop Production through a Coupled System Approach, Dr. Xin-Zhong Liang, Department of Atmospheric and Oceanic Science, University of Maryland; Earth System Science Interdisciplinary Center, University of Maryland.

4:00 pm – Use of DayCent-UV-B Model to simulate UV-B radiation and climate change impacts on the US Great Plains Grasslands, Dr. William Parton, Professor Emeritus, Department of Forest Rangeland and Watershed Stewardship, Colorado State University, Senior Research Scientist, Natural Resource Ecology Laboratory, Colorado State University.

4:30 pm – Assessing UV Tolerance in Broadleaf Trees and Modeling Tree Canopy Interception of UV Radiation, Dr. Yadong Qi, Professor of Urban Forestry, Department of Urban Forestry and Natural Resources, College of Agricultural, Family and Consumer Sciences, Southern University and A&M College, Baton Rouge, LA.

5:00 pm – How spectral changes in solar radiation affect the photosynthetic performance of leaves and prospects for upscaling these effects in plant canopies, Dr. Matthew Robson, Principal Investigator, Canopy Spectral Ecology & Ecophysiology; UNEP Panel Member and Lead Author; Senior Lecturer, UK National Forestry School, University of Cumbria – Ambleside; Programme Lead, Woodland Ecology and Conservation, University of Cumbria – Ambleside.

5:30 pm – Closing Remarks, Dr. Sasha Madronich, Senior Scientist Emeritus, National Center for Atmospheric Research.