

American Meteorological Society Annual Meeting 2019

Short Course Program

**An Introduction to Using the NASA Giovanni System for Multidisciplinary Research and Applications**

**Lead Organizer:**

James G. Acker, NASA Goddard Earth Sciences Data and Information Services Center (GES DISC) / Adnet Inc.

**GES DISC and GSFC Instructors:**

Zhong Liu, Jennifer Wei, Suhung Shen, George Huffman, David Meyer, William Teng, Michael Nardozzi

8:30 AM –

9:00 AM        **Introductions**

- Welcoming Remarks – James Acker, Zhong Liu
- Introduction of Instructors – Wei, Shen, Huffman, Meyer, Teng, Nardozzi
- Introduction of Participants, Statements of Interest

9:00 AM –

9:30 AM        **About the NASA GES DISC**

- Overview of GES DISC – David Meyer
- Data Collection – David Meyer
- Data Services – Jennifer Wei
- Applications – William Teng, Suhung Shen

9:30 AM –

9:45 AM        **History of Giovanni** – James Acker, Zhong Liu

9:45 AM –

10:15 AM      **Technical Aspects of Giovanni**

- Software Design and Principles – Michael Nardozzi, James Acker
- GUI, Backend, Workflows – Michael Nardozzi

10:15 AM –

10:30 AM      **BREAK**

10:30 AM –

11:00 AM      **Using Giovanni**

- Precipitation – George Huffmann, Zhong Liu
- MERRA-2 – Suhung Shen
- Hydrology – William Teng
- Atmospheric Composition and Air Quality – Jennifer Wei

11:00 AM –

12:00 PM      **Giovanni Features I**

Overview of variables, Facet and Keyword search capabilities, Basic analytical functions, Visualization features, Demonstration, “Build A Multi-Disciplinary Analysis” [Step-by-Step “Follow the Leader”] – James Acker, Zhong Liu, William Teng

12:00 PM –

1:00 PM      **LUNCH BREAK**

1:00 PM –

1:45 PM      **Giovanni Features 2**

Describe data downloads (formats, methods), Demonstration, FAQs & YouTube & Other Forms of Help – Michael Nardozzi, James Acker, David Meyer, Jennifer Wei

1:45 PM –

2:30 PM      **Hands-On Exercise 1**

During this first Hands-On Exercise, participants will be given a list of variables to find and select based on their interests, a list of the visualizations to use (maps, time-series) for these variables, and regions-of-interest and time-periods to use based on which variables they select. The variables will be what we deem popular and easier to understand.

Example: TRMM Rainfall Rate, Map for southern Louisiana, Hurricane Katrina landfall date for map, Hurricane Katrina “dates” for time-series. – All Instructors

2:30 PM –

2:45 PM      **BREAK**

2:45 PM –

3:30 PM      **Hands-On Exercise 2**

During this Hands-On Exercise, participants will be given a list of variables to find and select for a variety of multi-disciplinary topics. We will also suggest visualizations to use, potentially expanding to correlation maps, interactive scatter plot, and Hovmoller plots. We will again suggest regions-of-interest and time-periods to use based on which set of multi-disciplinary variables they select. – All Instructors

3:30 PM –

3:50 PM      **Wrap-up**

Briefly review take-away concepts that were demonstrated in case studies. Solicit experiences (fill in course assessment forms) from the hands-on exercises. Answer any remaining questions. Closing remarks. – James Acker, Zhong Liu