



# **MODIS Science Team Meeting**

**Diane E. Wickland**

**MODIS Program Scientist  
Office of Earth Science  
National Aeronautics and Space Administration**

**July 13, 2004**





## **Welcome to New & Veteran Team Members**

- **Algorithm Refinement Investigators (Continuing & New Team Members)**
- **Investigators Developing New or Alternative Algorithms**
- **Calibration and Validation Investigators**
- **Investigators Conducting New Scientific Data Analysis and Modeling Research Using MODIS data (and often other EOS data)**





## The Challenge

**Challenge to All:** Reap the full scientific benefits of MODIS, Terra, & EOS

- Make / keep the existing data products the best they can be
- Develop new data products to enable important, new scientific and applied uses
- Utilize MODIS (and Terra, EOS) data products to create new scientific understanding of planet Earth and how it is changing – and new applications of this knowledge for decision support





## MODIS in a Changing World

### Change is inevitable & often desirable

- It is the very essence of Earth System Science
- The new MODIS Science Team shows some significant turnover, has new people responsible for key algorithms, and has triple the number of Principal Investigators (data users now outnumber algorithm developers)
- ***Let us take a moment to acknowledge the contributions of all the original team members and recognize they will always be part of our EOS team***
- Earth Science is changing from mission science teams to measurement-oriented science teams
- NASA is in the process of transforming itself to implement the President's Exploration Vision





## EOS Re-Competition: Themes / Issues

### Peer Review:

- Overall, peer reviewers were impressed with algorithm accomplishments to date and the quality and diversity of scientific and applied uses proposed
- Peer reviewers had some difficulty understanding the complexities and detailed technical aspects of the algorithm refinement proposals





## EOS Re-Competition: Themes / Issues

### Peer Review Noted:

- Algorithm development approaches were very “disciplinary” (i.e., stove-piped); opportunities to share expertise and avoid “redundant” efforts were lost
  - Certain algorithm developers and validation investigators should be pushed harder to address important deficiencies in key data products (e.g., cloud mask, atmospheric correction, correction for snow under vegetation . . .)
- ➔ *MODIS Land, Ocean, & Atmosphere Groups may have hindered interactions across the team*





## EOS Re-Competition: Themes / Issues

### Peer Review Noted:

- Algorithm developers that did not act as representatives / stewards of broader community needs by demonstrating they were working with them (and with the validation scientists for their algorithm), and responding to their preferences, were rated lower than those that did
- Some algorithm refinement proposals did not provide compelling justification for the importance / utility of the algorithm improvements and/or new data products proposed and were rated lower





## EOS Re-Competition: Themes / Issues

### **I Noted:**

- Since the Algorithm Theoretical Basis Document (ATBD) reviews in the mid-1990's, EOS Science Teams have been more or less on their own to make decisions and set priorities (and, for the most part have done well in doing so)
- ➔ However, EOS Data Products and Science Team demands on EOS/NASA resources need a periodic review process





## New EOS Data Review Needed

### We need:

- A plan for review of ATBDs for the new and alternative EOS algorithms – after 2-3 years
- A plan for regular peer and program review (every 2-3 years?) of existing EOS data products to
  - Assess quality and importance of data product suites (and their components)
  - Prioritize EOS data products relative to each other and relative to other needs of the community they serve
  - Recommend changes, improvements, level of service by data systems and archives





## New EOS Data Review Needed

### Data Products Review:

- Must involve broad user community or their representatives (peers)
- Must take into account NASA (or other) resources / program components required to support the products; hence involve data system and archive management and NASA HQ Focus Area Leads (program/project managers)

*→ Suggestions as to when and how to do this are welcome!*





## From Mission to Measurement Teams

**NASA's Plan: For continuing / evolving measurement streams, there will be one science team, competed periodically, that provides scientific guidance to present and future missions and for the utilization of past data sets**

- Will aid in focus on Climate Data Records
- One data system to ensure a “seamless” time series
- Scientific guidance and priorities most representative of the broad user community
- Minimizes disruptive start-up and phase-out stages





## From Mission to Measurement Teams

- **Ocean Color has already begun this change**
- **“Land” (Vegetation?) is poised to begin**
  - **One or several measurements (land cover, vegetation indices & biophysical properties, fire occurrence & extent, LST or all together?)**
  - **One or two spatial resolutions: moderate (1 km) and high (30 m)?**
  - **Do we assume surface hydrological and geological measurements will be addressed in other measurement teams?**
- **Atmosphere is working on this as well, but I am not current on status**





# NASA's Transformation is in Progress

## Response to Aldridge Commission Report: NASA HQ Will Act First

## New Science Mission Directorate will merge Space and Earth Science

- AA is Al Diaz
- Deputy AAs are:
  - Ghassem Asrar (Science)
  - Orlando Figueroa (Programs)
  - Alison McNally (Management)
- Everything else is TBD!





## **One Last Change . . .**

**Diane E. Wickland will be the new NPOESS  
Preparatory Project (NPP) Program Scientist**

**Paula Bontempi will be the new MODIS Program  
Scientist**

**but . . .**

**as we move to measurement teams, I will still be  
working with all of you and with Paula . . .**

**It has been a very great pleasure to be a  
part of the MODIS Science Team, and I  
thank you all very, very much!**

