# 2014 HyspIRI Product Symposium

## *HyspIRI:*

## *Enabling the Evolution of Land Imaging with New Approaches and Products*

## *How can HyspIRI strategies meet Sustainable Land Imaging requirements?*



*A Symposium Sponsored by NASA*

*Goddard Space Flight Center-Building 34, Rooms W150, W120A/B*

*June 4-6, 2014*

# Day One: Wednesday, June 4

***8:00-9:00am*** ***Registration/Poster Set-ups/Coffee Service, Foyer***

***Evolving the HyspIRI Mission and Products [Chair, Elizabeth Middleton, NASA/GFSC] Room W150***

9:00-9:15am Welcome and Overview of Symposium (***Elizabeth Middleton, NASA/GSFC***)
9:15-9:30am Status of HyspIRI (***Woody Turner, NASA HQ***)
9:30-9:45am NASA's Evolving Vision for Space (***Steve Volz, NASA HQ***)
9:45-10:00am Summary: Comprehensive Mission Report, 2008-2013 (***Rob Green, JPL***)
10:00-10:15am Systems architecture for distributed spacecraft missions (***Jacqueline Le Moigne, NASA/GSFC***)
10:15-10:30am White Paper Summary: Science Impact, Deploying VSWIR & TIR Instruments on Separate Platforms (***Simon Hook, JPL***)

***10:45-11:00am*** ***Coffee Break/Posters, Foyer***

***Session 1: HyspIRI's compatibility with other US Missions and Sustainable Land Imaging, SLI [Chair, Petya Campbell, UMBC[Room W150]***

11:00-11:15am SLI for NASA (***David Jarrett, NASA HQ***)
11:15-11:30am SLI for USGS (***Tim Newman, USGS***)
11:30-11:45am SLI Architecture Study at GSFC (***Del Jenstrom/ Jeff Masek, NASA/GSFC***)
11:45-12:00pm Landsat 8 (***Jim Irons, NASA/GSFC***)
12:00-12:15pm CEOS/Essential Climate Variables and SLI (***Miguel Roman, NASA/GSFC***)
12:15-12:30pm VIIRS and MODIS (***Robert Wolfe, NASA/GSFC***)
12:30 -12:45pm ORCA/PACE and HICO (***Carlos Del Castillo, NASA/GSFC***)

***1:00-2:00pm*** ***BOXED LUNCH, Foyer & Lunch Discussion,*** **Room W120B**
***Can spectrometers provide Landsat Data Continuity from past to future Missions? [Chair, Steve Ungar, UMBC]***

***Session 2: Science &Application Studies [Chair, Sustin Ustin, UC Davis] Room W150***

2:00-2:15pm Retrieving LUE with Hyperion Globally (***Fred Huemmrich, NASA/GSFC***)
2:15-2:30pm Retrieving the new fAPARchl Product from Space (***Qingyuan Zhang, NASA/GSFC***)
2:30-2:45pm Retrieving GPP in Forests and Agriculture (***Ben Cheng, NASA/GSFC***)
2:45-3:00pm Hyperion Spectrometer Simulation of LDCM Products (***David Landis, NASA/GSFC***)
3:00-3:15pm Vegetation feature analysis and spectral comparison using the USGS PRISM software **(*Ray Kokaly, USGS***)
3:15-3:30pm Title TBD (Philip Townsend, UW)
3:30-3:45pm Mapping Fire Scars Using Hyperspectral Imagery and Kernel Based Image Analysis (Saurabh Prasad, UH)
3:45-4:00pm * TBD

***4:00-4:15pm*** ***Coffee Break/Posters, Foyer***

***Session 3: Coastal/Aquatic, Public Health, Disasters/Natural Hazards [Jeff Luvall, MSFC] Room W150***

4:15-4:30pm Coastal/Aquatic Initiative (***Wesley Moses, NRL***)
4:30-4:45pm CEOS Disaster Risk Management for Societal Benefit (***Stu Frye, NASA/GSFC***)
4:45-5:00pm Inland and coastal aquatic remote sensing - international activities (Title TBD, ***Arnold Dekker, CSIRO*****)**
5:00-5:15pm Decomposition of Hyperspectral data for use in Case 2 environments (***Joseph D. Ortiz, Kent State University***)
5:15-5:30pm Title TBD ***(Mike Ramsey)***
5:30-5:45pm Health and Air **(*John Haynes***, ***NASA/HQ***)
5:45-6:00pm Volcanoes (***Rick Wessels, USGS***)

**6:00pm** **ADJOURN, Day 1**

***7:00-9:00pm*** ***Dinner/Evening Event in Honor of Susan Ustin, UC Davis (Sir Walter Raleigh Restaurant, Greenbelt, MD)***

## Day Two: Thursday, June 5

***Session 4: New HyspIRI Like Data Sets & Calibration Topics [Chair, Rob Green, JPL] Room W150***

8:30-8:45am HyspIRI Airborne Campaign Overview (**Ian McCubbin, NASA/GSFC**)
8:45-9:00am Preliminary Products from Spectrometers & TIR @ 30m and 60m (Glenn Hulley, JPL TBD)
9:00-9:15am NEON activities related to HyspIRI airborne campaign (***Shelly Petroy, NEON***)
9:15-9:30am Products Generation and Atmospheric Correction (***David Thompson, JPL)***
9:30-9:45am Campaign PI (**TBD-Steve U. to confirm**)

***10:15-10:30am Coffee Break with Demo Presentations, Foyer***
***GEO-social/API Demo (Pat Cappelaere,Vightel) AND Fast AC Demo (Vuong Ly, NASA/ GSFC) Room W120A***

***Session 5: Calibration Studies [Steve Ungar, NASA/GSFC] Room W150***

10:30-10:45am HyspIRI Airborne (AVIRIS, JPL TBD -**Rob Green to confirm talk**)
10:45-11:00am Atmospheric corrections (***Bo-Cai Gao, Naval Research Lab***)
11:00-11:15am Monitoring Hyperion stability and sub-pixel heterogeneity in a pseudo-invariant desert site (***Chris Neigh, NASA/GSFC***)
11:15-11:30pm Lunar Hyperion & ALI Cals (***Lawrence Ong, NASA/GSFC***)
11:30-11:45am Landsat-7&8/Hyperion/G-LiHT/CLARREO (***Joel McCorkel, NASA/GSFC*)**
11:45-12:00pm Geo-correction or Geo-corruption (***Steve Ungar, NASA/GSFC***)

***12:15-12:45pm Poster Speed Talks (10 @ 3 min. each)***

***12:45-1:30pm BOXED LUNCH ($10pp)***

***Session 6: Intelligent Payload Module [Chair, Dan Mandl, NASA/GSFC] Room W150***

1:30-1:45pm Intelligent Payload Module (PM) Concept Evolution (***Dan Mandl, NASA/GSFC***)
1:45-2:00pm Prototype and Metrics for Data Processing Chain Components of IPM (***Vuong Ly, NASA/GSFC***)
2:00-2:15pm On Orbit Experiment for Synthesize Landsat Bands From Hyperion (**Steve Chien, TBD-Dan to confirm**)
2:15-2:30pm Onboard Atmospheric Correction (FLAASH) (***Vuong Ly, NASA/GSFC***)
2:30-2:45pm Onboard Data Compression, Geo-Rectification and Co-Registration (***Vuong Ly, NASA/GSFC***)
2:45-3:00pm CubeSat Onboard Processing (***Charles Norton, JPL***)
3:00-3:15pm Onboard Product Generation & Vectorization (***Pat Cappelaere, Vightel*)**
Dan to confirm Vuong Ly combined presentations

***3:30-3:50pm Coffee Break/Posters, Foyer***

***Session 7: Ground Data Processing and Distribution [Chair, Pat Cappelaere, Vightel] Room W150***

3:50-4:05pm Data Products on Cloud - Update (***Vuong Ly, NASA/GSFC***)
4:05-4:20pm A Cloud-based Scanning Framework for Analyzing Large Volumes of Hyperspectral Data (***Maria T. Patterson, UChicag*o**)
4:20-4:35pm NASA Earth Science Products for Farmer Management and Cell Phone Systems (***Molly Brown, NASA/GSFC***)
4:35-4:50pm Data Fusion and Compression (***Woytek Czara, UMD***)
4:50-5:05pm OpenGeoSocial API: Product Discovery/Distribution via Social Networks (***Pat Cappelaere, Vightel)***
5:05-5:10pm Distributed Disaster Architecture (***John Evans, GST***)

***Preparing for Next Decadal Survey [Chair, TBD-Woody to confirm – possibly Steve Volz)***

5:15-5:30pm Presentation: Summary on Decadal Survey Opportunities (**TBD/SSG**)
5:30-5:45pm Presentation: How HyspIRI Can Compete (***Woody Turner, HQ***)

***5:45-6:00pm Group Discussion***

**6:00pm ADJOURN, Day 2**

## Day Three: Friday, June 6

# HyspIRI Aquatic Study Group Forum
# 2nd Annual Forum, Coastal and Aquatic Studies

## HASG Forum

***8:00-10:00am*** ***New Studies and Products for Coastal & Aquatic Science with HyspIRI [Chair, Kevin Turpie, UMBC] Room W150***

8:00-8:20am Overview Progress Report (**Kevin Turpie, UMBC**)
8:20-8:40am Airborne Campaign: Results, Lesson's Learned, and Outstanding Issues (**Heidi Dierssen)**
8:40-9:00am Airborne hyperspectral instrument PRISM and observations of submerged aquatic (***Heidi Dierssen, UCONN***)
9:00-9:20am Atmospheric Correction over Water (**Bo-Cai Gao, Naval Research, Lab**)

***Forum Discussion (exit criteria - form clear recommendations for each topic and summarize)***

9:20-9:30am Atmospheric Correction Improvements
9:30-9:40am Glint Correction
9:40-10:00am Calibration, Characterization, and Validation

***10:00-10:15am*** ***Coffee Break, Foyer***

10:15-10:30am VSWIR/TIR Instrument Separation
10:30-10:45am Alternative Orbits and Platforms
10:45-11:00am Coastal Mask Development

***11:00-11:40am*** ***Further Aquatic Algorithm Development: Efforts and Directions***

- Can the HASG expand to support other coastal and inland water RS efforts?
- What resources can be exploited for community algorithm development?
- Will there be funding to support algorithm development?
- How does the community support operational production of Level 3-4 data?

***11:40-12:00pm*** Review Results and Input for Final Report

***12:00pm*** ***ADJOURN***

## Spectroscopic (PRISM) Tutorial

***9:00-4:00pm*** ***Processing Routines in IDL for Spectroscopic Measurements (PRISM) Tutorial***
**(By Invitation Only)** ***[Instructor: Ray F. Kokaly, USGS] Room 120A***

***10:00-10:15am*** ***Coffee Break, Foyer***

***12:00-1:00pm*** ***BOXED DELI LUNCH ($10pp), Foyer***

***3:00-3:15pm*** ***Coffee Break, Foyer***

***4:00pm*** ***ADJOURN***