An Update from the Satellite Climate Studies Branch (SCSB)

Ralph Ferraro
Chief, Satellite Climate Studies Branch
NOAA/NESDIS/STAR/CoRP
CoRP and Federal Presence at CI’s

Why?

- Promotes closer scientific engagement
- Leverages expertise of both groups
- Multidisciplinary problem solving
- Helps promote outreach
- Shapes NOAA’s next generation of scientists!
Our SCSB Family

NOAA Federal Employees

Ralph Ferraro
Satellite Hydrology

Chris Brown
Ocean Biology

Huan Meng
Snowfall/JPSS

Scott Rudlosky
Lightning/GOES-R

Tom Smith
Climate/Time Series

Additional “Family” Members

Deb Baker
Administration
CICS-MD

Ama Ba
NOAA/NWS

NRAP (1-year – completed 9/1/17)
CICS Proving Ground

6th CICS-MD Science Meeting

November 6-8, 2017
SCSB Accomplishments Past Year – Many with our CICS Partners! (1/2)

GOES-16
- Launched on Nov. 19, 2016; new sensors – ABI and GLM
- Becomes the “east” satellite at 75.2 W by Jan 2017 (replaces GOES-13)
- Rudlosky + CICS heavily involved with GLM check-out, cal/val, new products

JPSS/POES
- JPSS-1 launch upcoming in a few days – Nov. 10, 2017
- JAXA GCOM-W1 AMSR-2 used operationally at NESDIS
- S-NPP, N-18, N-19, MOA, MOB, DMSP F-17, F-18 – all used in our product suites
- Meng, Ferraro + CICS heavily involved with several activities
  - SFR, GCOM products, MiRS, blended products

Climate
- AMSU Hydrological CDR’s – Ferraro, Meng, Smith + NCEI
- Smith + CICS-NC - Developing improvements in NOAA satellite and in-situ blended SST
- Smith + CICS-Consortium (SDSU) - Pursuing improvements in S2S precipitation forecasts

Ecosystems
- Brown - Developing system to automatically identify and count sea nettle jellyfish in Chesapeake Bay that will validate model guidance of sea nettle presence
- Brown + CICS - Assess skill of assimilating JPSS VIIRS SST into NOAA’s Chesapeake Bay Operational Forecast System

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Unique Example – Joint SCSB and CICS Activity
Verifying Sea Nettle Predictions Using the JellyCam

Likelihood Of Presence Prediction

JellyCam Schematic

Automated Detection & Counting System

Chris Brown, SCSB
Deepika Regani, UMD EE M.S. student

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SCSB Accomplishments Past Year – Many with our CICS Partners! (2/2)

- Satellite Proving Ground
  - Now functioning a full capability!

- Partnerships
  - Cooperative Institutes/Consortium
    - CIRA Visitor – Veljko Petkovic
    - CREST mentorships (CCNY, SDSU)
    - Autosnow reprocessing – Peter Romanov (CCNY)
    - CDR’s – Olivier Prat (CICS-NC)
  - External Partners (domestic)
    - NASA/Global Precipitation Measurement (GPM) Mission
    - NASA/Geostationary Lightning Mapper (GLM)
  - External Partners (international)
    - WMO
    - JAXA – GCOM-W1 AMSR-2
    - EUMETSAT

- Recognition
  - NOAA Awards – Smith, NOAA EPP Mentorship Award
  - NESDIS Awards - Smith

6th CICS-MD Science Meeting

NOAA Precipitation Measurement Missions
Science Team Meeting: San Diego, CA Oct 16-20, 2017
FY18 - Emerging Opportunities and SCSB Priorities

- **GOES-R & JPSS-1**
  - Exploit ABI and GLM to learn new things!
  - Sensor and product checkout
  - Enterprise solutions – GOES, JPSS and in-situ data fusion

- **CICS-MD/SCSB Satellite Proving Ground/Training Center (PGTC)**
  - Continue to build the capabilities
  - Enhance customer base
  - Use on a regular basis – training, seminars, weather discussions, etc.

- **NOAA’s National Water Initiative**
  - Infuse satellite products into the National Water Model
    - Land surface forcings
    - Precipitation, including snowfall
  - Tailor AWIPS products for National Water Center use

- **Satellite time series**
  - Reprocessing
  - Exploitation of CDR’s for Monitoring, assessments, seasonal prediction, scientific studies (water balance, etc.)