

ESRL Global Systems Division Science Laboratory Review

November 3-5 2015

David Skaggs Research Center - Broadway, Boulder, CO

<http://esrl.noaa.gov/gsd/research/review/2015/>

Monday, 2 November 2015

6:30 p.m. Ice Breaker – Carelli’s Restaurant

Day 1: Tuesday, 3 November 2015

PRELIMINARIES

7:00 Breakfast (closed) at the Homewood Suites for OAR DAA Steve Fine, and Review Panel

7:30 Transportation to ESRL (Review Panel meet Phyllis in lobby and caravan to ESRL; Observers carpool from hotel lobbies)

Please allow sufficient time for security/badging for non-NOAA attendees

WELCOME (GC402)

7:00 Check-in for Observers

8:10 Meeting Overview and Logistics – Jennifer Mahoney (Deputy Director GSD)

8:15 Welcome and Charge to Reviewers – Craig McLean (Assistant Administrator, OAR)

8:25 Overview of NOAA and OAR Research Planning and Funding; Introduction of Review Panel – Steve Fine (Deputy Assistant Administrator, NOAA OAR)

8:35 ESRL Organization Overview, Research at ESRL – Alexander E. MacDonald (Director, NOAA ESRL)

8:45 Overview of ESRL GSD – Kevin Kelleher (Director GSD)

9:45 – 10:00 Break – Light Refreshments (Check-in for Reviewers)

THEME 1: NUMERICAL WEATHER PREDICTION: REGIONAL MODELS (GC402)

10:00 Opening: Numerical Weather Prediction: Mission and Grand Challenges (Stan Benjamin)

Session 1

10:10 Modeling Challenge #1 - Toward Storm-scale Ensemble Data Assimilation and Prediction (Steve Weygandt)

10:25 HRRR Overview – R20 to NWS and Application to Severe Weather (Curtis Alexander)

- E-Poster Display-1*
10:30 Radar Assimilation for HRRR (David Dowell)
E-Poster Display-2
10:35 Land-surface Cycling for Better Hydrometeorology (Tanya Smirnova)
E-Poster Display-3
10:40 Energy Applications and Design for RAP/HRRR (Joe Olson)
E-Poster Display-4
10:45 HRRR/RAP - Mitigating Aviation Hazards for Safety and Efficiency (Jaymes Kenyon)
E-Poster Display-5
10:50 Probabilistic Forecasting at Regional Scales (Isidora Jankov)
E-Poster Display-6
10:55 Short Discussion
11:05 Poster Session (30 min)
11:35 Session Discussion (10 min)
- 11:45 Lunch Provided (All Attendees; GB124)
(Review Panel and Federal Scientists: GB144)

THEME 1: NUMERICAL WEATHER PREDICTION: GLOBAL MODELS (GC402)

Session 2

- 1:00 Modeling Challenge #2 – Toward Earth System Modeling
FIM Atmospheric Global Model for Medium-range Forecast Applications (Stan Benjamin)
E-Poster Display-1
1:20 Impact of Composition and Chemistry on Weather Forecasting (Georg Grell)
E-Poster Display-2
1:25 Coupled Atmospheric-Ocean Earth System Modeling for Sub-seasonal Prediction
(Shan Sun)
E-Poster Display-3
1:30 Development of Non-hydrostatic Global Models – NIM (Jin Lee)
E-Poster Display-4
1:35 High-performance Software Engineering (Tom Henderson)
E-Poster Display-5
1:40 Physics for Global Non-hydrostatic Applications (John Brown)
E-Poster Display-6
1:45 Short Discussion (10 min)
1:55 Poster Session (30 min)
2:25 Session Discussion (10 min)
- 2:35 – 3:10 *Tour of GSD Computing Facility (Reviewers only)*
2:35 – 3:10 *Science on a Sphere (SOS) Demonstration (All Others)*
- 3:10 - 3:30 *Break - Light Refreshments*

THEME 1: NUMERICAL WEATHER PREDICTION: CROSS-CUTTING ACTIVITIES (GC402)

Session 3

- 3:30 NWP: GSD's Path Forward (Tim Schneider)
3:45 Global Developmental Testbed Center (DTC) – (Ligia Bernardet)
E-Poster Display-1
3:50 Global Observing Systems Analysis – (Lidia Cucurull)
E-Poster Display-2
3:44 Improving Winter Storm Forecasts with Dropsonde Data – (Jason English)
E-Poster Display-3
4:00 Renewable Energy Program (Melinda Marquis)
E-Poster Display-4
4:05 Short discussion (10 min)
4:15 Poster Session (30 min)
4:45 Theme 1 Wrap-up and Discussion (15 min; 5-Stan, 10 discussion)

5:00 *Adjourn (Day 1) Observers finished for the day and dinner on your own*

5:00 – 6:00 Review Panel (**Closed**) (GB144)
6:30 Dinner Boulder Dushanbe Tea House (**Closed** Review Panel, OAR HQ, GSD Management, and CI Directors)

Day 2: Wednesday, 4 November 2015

PRELIMINARIES

- 7:00 Breakfast on your own
- 7:40 Transportation to ESRL (Review Panel meet Phyllis in lobby to caravan to ESRL; All others carpool from hotel lobbies)

THEME 2: DECISION SUPPORT (GC402): A BUSY DAY AT FORECAST OFFICES

Session 4

- 8:15 Opening Talk: A Busy Day at Forecast Offices (Mike Kraus)
- 8:30 Ensemble Forecasts and Uncertainty (Paul Schultz)
E-Poster Display-1
- 8:35 Forecast Monitoring and Short Term Updates (Kevin Manross)
E-Poster Display-2
- 8:40 Tropical Hazards (Tom LeFebvre)
E-Poster Display-4
- 8:45 Unified and Consistent Hazardous Weather Forecasts (Tracy Hansen)
E-Poster Display-3
- 8:50 Sharing the Wealth: Forecaster Tools for Our Partners (Joe Wakefield)
E-Poster Display-5
- 8:55 Short Discussion (10 min)
- 9:05 Poster Session (30 min)
- 9:35 Session Discussion (10 min)

9:45 - 10:15 Break - Light Refreshments

THEME 2: DECISION SUPPORT FOR AVIATION (GC402)

Session 5

- 10:15 Opening Talk: Decision Support and Evaluation for Aviation (Mike Kraus)
- 10:30 Aviation Forecasting with AWIPS (Woody Roberts)
E-Poster Display-1
- 10:35 Impact-based Decision Support for Aviation (Brian Etherton)
E-Poster Display-2
- 10:40 Verification Tools for Aviation Weather (Missy Petty)
E-Poster Display-3
- 10:45 Investigation of Truth Sets for Verification (Laura Paulik)
E-Poster Display-4
- 10:50 Assessment of Aviation Algorithms and Forecast Technologies (Matt Wandishin)
E-Poster Display-5
- 10:55 Short Discussion (10 min)
- 11:05 Poster Session (30 min)
- 11:35 Theme 2 Wrap-up and Discussion (15 min: 5 min Mike and 10 Discussion)

- 11:50 Lunch Provided (All Attendees; GB124)
Review Panel and Non-Federal GSD Scientists meeting (GB144)

THEME 3: ADVANCED TECHNOLOGIES (GC402)

Session 6

- 1:00 Opening Talk: Advanced Technology (John Schneider)
1:15 The NOAA Earth Information System (NEIS) Data Discovery, Collection, and Distribution (Jebb Stewart)
E-Poster Display-1
1:20 Advanced Visualization Development using Gaming Technology (Eric Hackathorn)
E-Poster Display-2
1:25 Massively Parallel Fine Grain (MPFG) Computing (Mark Govett)
E-Poster Display-3
1:30 Specialized Information and Warning Systems (Greg Pratt)
E-Poster Display-4
1:35 Science on a Sphere (SOS): Technical Innovation and Network Growth (Keith Searight and Shilpi Gupta)
E-Poster Display-5 and E-Poster Display-6
1:45 Short Discussion (10 min)
1:55 Poster Session (30 min)
2:25 Session Discussion (10 min)
- 2:35 – 3:10 *SOS Demonstration (Reviewers Only)*
2:35 – 3:10 *Concurrent Sessions: Tour of Computing Facility (All Others)*
- 3:10 – 3:25 *Break – Light Refreshments*

THEME 3: ADVANCED TECHNOLOGIES (GC402)

Session 7

- 3:25 Opening Talk: Outreach and Research to Operations (John Schneider)
3:40 MADIS Innovations and the Path to Operations (Gopa Padmanabhan and Leon Benjamin)
E-Poster Display-1 and E-Poster Display-2
3:50 NOAA's International Collaboration with Taiwan (Fanthune Moeng)
E-Poster Display-3
3:55 Global Visualization using NOAA's *Terraviz* (Beth Russell and Jeff Smith)
E-Poster Display-4 and E-Poster Display-5
4:05 Short Discussion (10 min)
4:15 Poster Session (30 min)
4:45 Theme 3 Wrap-up and Discussion (15 min) (John Schneider 5 min, 10 Discussion)
- 5:00 *Adjourn (End of Review for Observers, group dinner at 6:30)*
- 5:15 – 6:30 Review Panel Session (**Closed**: GB144)

5:15 – 6:15 Concurrent Session: OAR Senior Management Meeting with Line Office Reps and
GSD Senior Management (GC402)

6:30 – Dinner

(Reviewers – Boulder Cork)

(All Others – The Med – Pay per Person)

Day 3: Thursday, 5 November 2015

PRELIMINARIES

7:00 Breakfast on your own

7:30 Transportation to ESRL (Review Panel meet Phyllis in lobby and caravan to ESRL)

STAKEHOLDER SESSIONS

8:00 Preparation for Concurrent Closed Sessions with Review Panel

Session 1 (GB124)

8:15 Steve Abelman (Phone)

8:35 Dave Michaud

8:55 Louisa Nance

9:15 Chris Davis (Phone)

9:35 Fred Toepfer (Phone)

Concurrent: Session 2 (BG124)

8:15 Brian Gross (Phone)

8:35 Jason Chasse

8:55 Hendrik Tolman

9:15 Tom Auligne

9:35 – 10:00 Break – light refreshments

REVIEW PANEL SUMMARY, WRAP-UP, AND DISCUSSION (GG402)

10:00 Brief Wrap-up and Question and Answer Session (Kevin Kelleher and GSD Chiefs)

REVIEW PANEL (CLOSED SESSION) (GB144)

10:30 Discussion, Report Coordination (begin writing), and preparation for Report-out
(Bring in Lunch)

REVIEW PANEL PRELIMINARY REPORT-OUT (GC402)

12:00 OAR and GSD Senior Management with Review Panel)

1:00 Adjourn