

International Cooperative for Aerosol Prediction (ICAP) 8th working group meeting: Lidar Data and its use in Model Verification and Data Assimilation

Meeting Organizers and POCs:

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When and Where:

July 12 - 14, 2016, College Park, MD, USA

Meeting hosted by: National Centers for Environmental Prediction (NCEP, <http://www.ncep.noaa.gov>) at the NOAA Center for Weather and Climate Prediction, College Park, MD

ICAP Website: <http://icap.atmos.und.edu/>

Rationale:

The International Cooperative for Aerosol Prediction is a grassroots community of aerosol modelers and data providers that provides a forum to discuss best practices and find optimal common solutions to the challenges of operational global aerosol prediction. ICAP has hosted seven meetings with themes ranging from aerosol observability to aerosol model verification and aerosol ensemble data assimilation and prediction. Some of the meetings have had a strong impact on the development of new aerosol products to offer to the user community, for example the establishment of the ICAP multi-model ensemble (Sessions et al. 2014). Likewise data providers have been engaging actively within the ICAP framework to provide enhanced *in situ* and ground-based observations of high quality and timeliness to meet the assimilation and verification needs of this community.

The purpose of this meeting is to assess the current status and utility of lidar data for verification and data assimilation in operational aerosol prediction systems. A number of coordinated ground-based lidar networks have come online in recent years, and there have been recent advances in space-based and airborne lidar capabilities. Increasingly there is recognition among data providers of the value of providing lidar products to users in near real-time. Operational prediction centers are now developing techniques to formally assimilate lidar observations into their analyses, and verification activities are ongoing. There is a need for common understanding of the capabilities and limitations of these observations in order for them to be properly used in verification and assimilation efforts. It is an appropriate time to evaluate the current state of the science in the field, share recent progress, and prepare for the future.

Overarching Goals and Outcomes of Lidar Data Meeting:

- Define currently available lidar data from ground-based systems and networks, airborne, and space-based observations, as well as prospects for future observations
- Assess the suitability and accessibility of lidar data for model verification and data assimilation activities, including error characterization and format issues, and provide recommendations for the future
- Discuss verification and data assimilation needs and methodologies

Format:

ICAP meetings focus on status updates/ discussions between operational centers and data providers. Each member center is allocated 30 minutes to describe current efforts and concerns. The majority of time however is devoted to a theme where invited subject matter experts review the current state of the science and provide recommendations for operational development and transitions. Presentations are by invitation only, and applications are taken from others for observer status. This year's specific topics for lectures focus on lidar data availability and its use in operational near real-time aerosol forecasting systems.

Who may attend:

ICAP is a grass roots organization of global aerosol forecast developers. ICAP meetings are functional operational working groups used to plan and coordinate global operational aerosol forecasting endeavors. Meetings and presentations are by invitation only by core member organizations and their operational partners. Applications are also received for a limited number of observers who have a direct stake in the proceedings. If you believe an appropriate invitation has been overlooked or you wish to apply for observer status, please contact the meeting organizers or a core member for sponsorship. Core modeling development organizations include: BSC, ECMWF, JMA, NASA GMAO, NOAA NCEP, NRL, and UKMO. Core remote sensing partners are from ESA, EUMETSAT, JAXA, and NASA.

A draft agenda for the workshop is appended below.

Logistics

Meeting Location:

The meeting is held at the NOAA Center for Weather and Climate Prediction at the National Centers for Environmental Prediction (NCEP), in College Park, MD, USA
5830 University Research Ct, College Park, MD 20740

Walking distance to the [College Park/University of Maryland Metro Station](#)

Google Maps:

<https://www.google.com/maps/place/NOAA+Center+for+Weather+and+Climate+Prediction/@38.9721892,-76.9246011,15z/data=!4m2!3m1!1s0x0:0x7033829e512c1e7>

Parking is available at the meeting location, but we will arrange shuttle service from the hotel (see below). For access to the meeting location please bring your ID (US government if applicable, else a drivers license if a US citizen, otherwise your passport if you are visiting internationally).

We are planning to cater lunches from the meeting cafeteria. We will likely facilitate this by collecting a registration fee at the beginning of the meeting against the lunch and coffee break costs.

Hotel Information:

There are a number of hotels near to, but not walking distance from, the meeting venue. We have arranged a room block at the Courtyard Marriott in Greenbelt (ask for the ICAP room block) at the government per diem rate of \$154/night (+tax) and including a shuttle to/from the NOAA facility.

Courtyard Greenbelt
6301 Golden Triangle Dr.
Greenbelt, MD 20770-3216
+1 301 441 3311

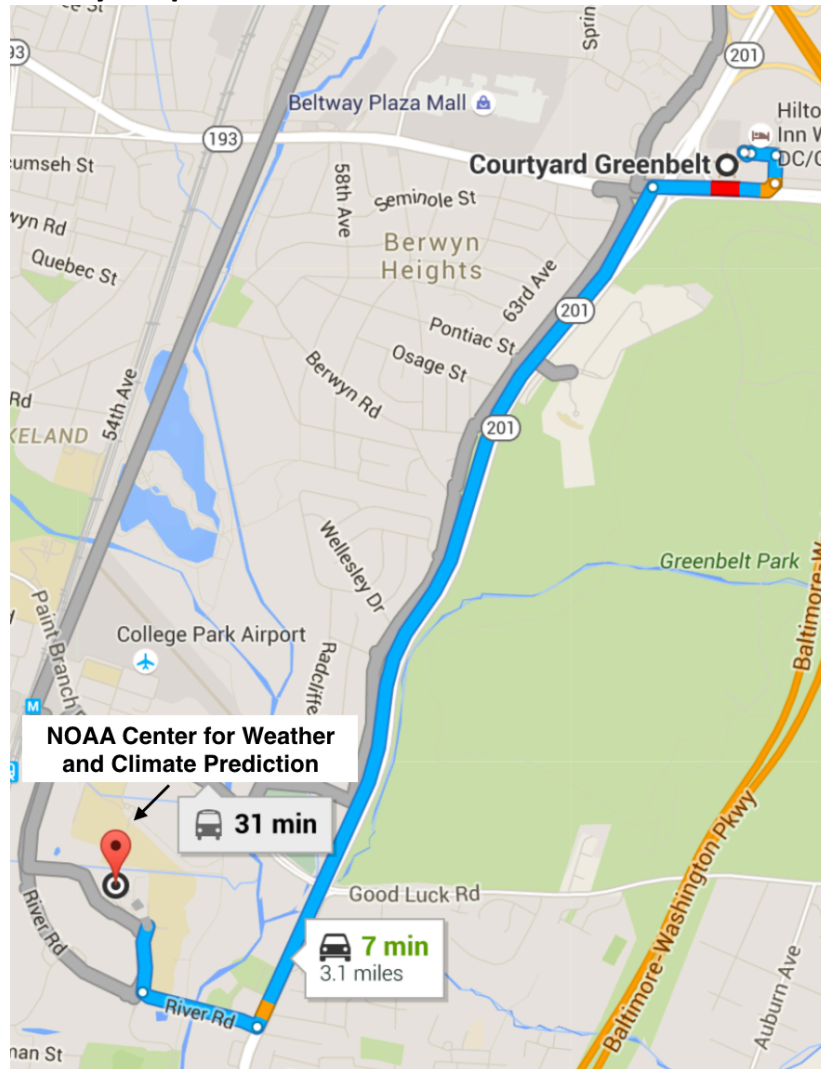
[This line of text is a hyperlink that will take you directly to a site to register for our room block.](#) Please note that the room block will be released on June 20, so make reservations before then.

The hotel has agreed to provide shuttle bus service from the hotel to and from the meeting location, however you are free to drive a car to the meeting site.

Excursions:

We are planning dinner outings for the nights of July 12 and 13. Details to follow.

Nearby Map Information



Travel to/from the Greenbelt/College Park Area

There are three major airports that serve the Washington, D.C., area:

Baltimore-Washington International: <http://www.bwiairport.com/en>

Reagan National: <http://prod.flyreagan.com/dca/reagan-national-airport>

Dulles International: <http://www.flydulles.com/iad/dulles-international-airport>

You can take a taxi or Super Shuttle to/from the hotel. From BWI there is a bus (the B30) to the Greenbelt Metro Station, which is a short taxi ride from the hotel: [see here](#).

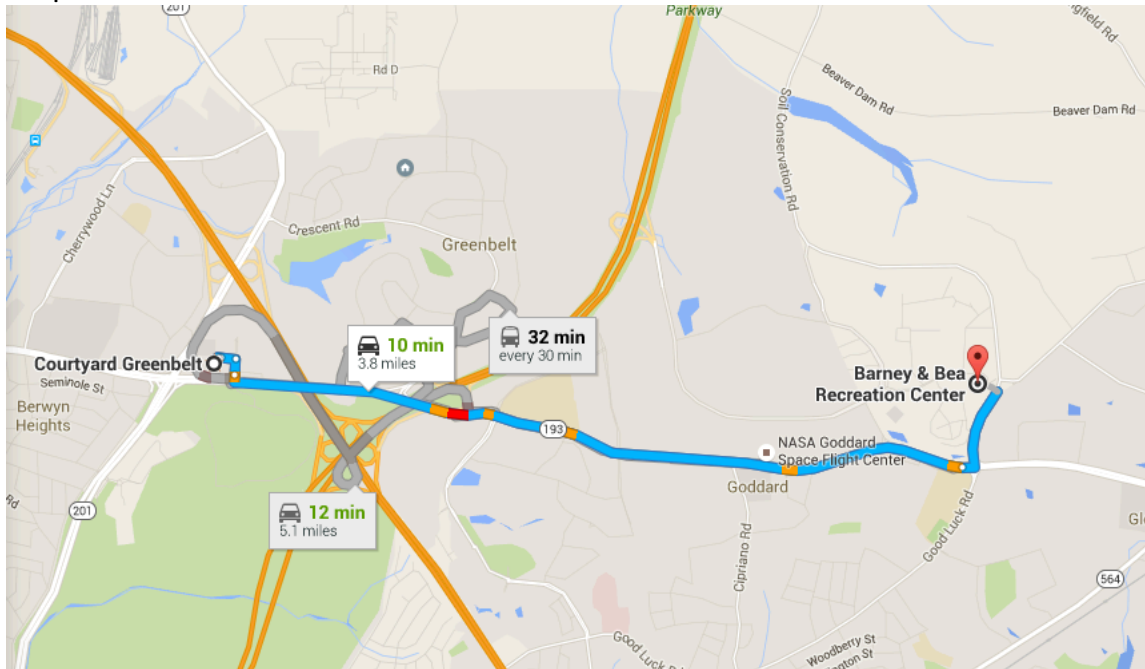
Please also note that the Washington, D.C., metro system is generally undergoing a lot of maintenance this summer, and certain routes will be unavailable due to station closures. For example, the Metro service from Reagan National Airport to the College Park Metro stop will be disrupted because of station closures near the airport. [See here](#).

Crab Dinner at the NASA GSFC Barney & Bea Recreation Center

Following meeting on Tuesday evening.

10000 Good Luck Rd, Greenbelt, MD 20771

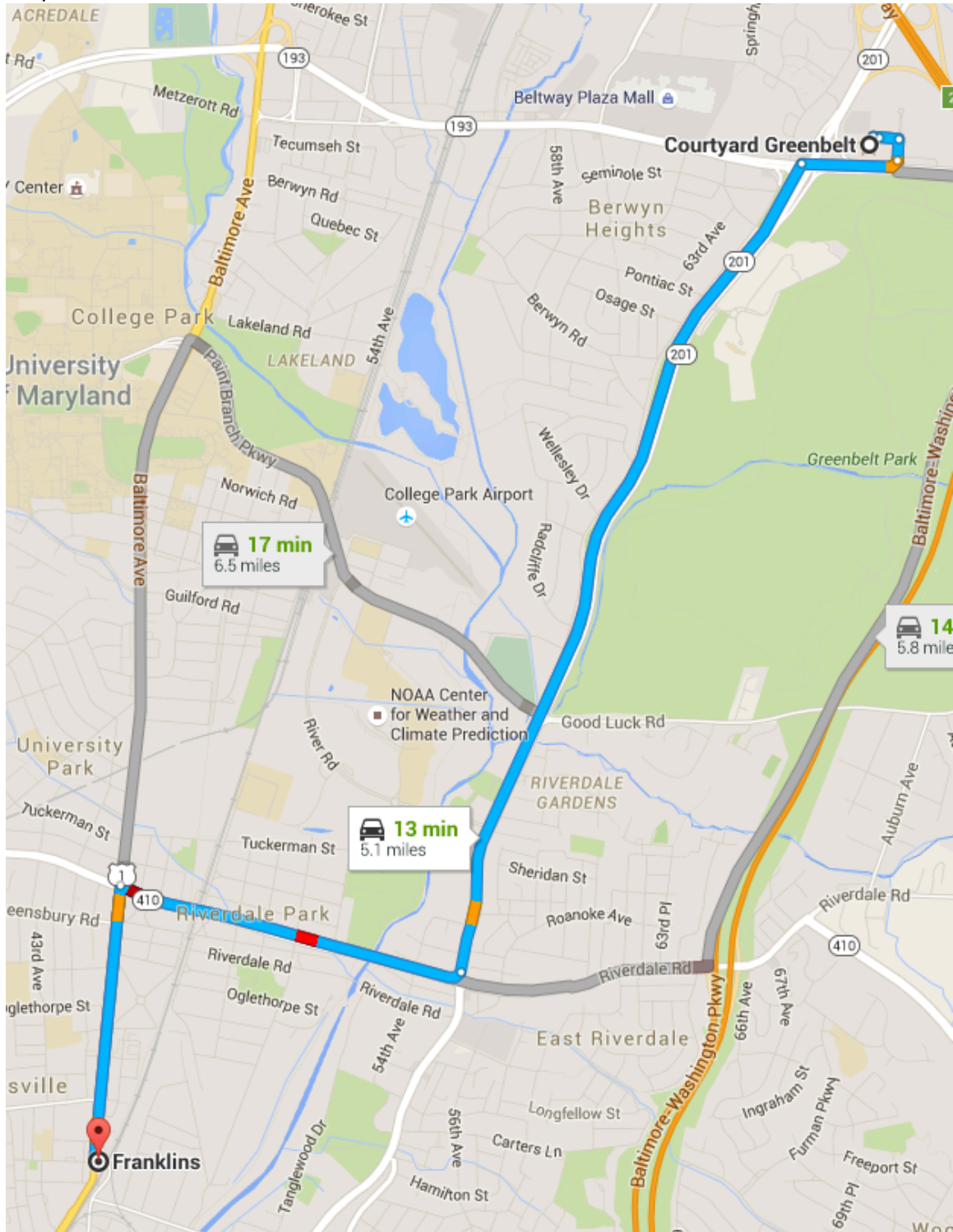
Map from hotel to Rec Center



Franklins Dinner after ICAP Meeting Wednesday Night

5123 Baltimore Avenue, Hyattsville, MD 20710

Map from Hotel to Franklins



Agenda
Tuesday July 12

Start	Item	Contact
8:30 AM	Registration	Peter Colarco
9:00 AM	Preliminaries and welcome	Bill Lapenta, NCEP Director
9:30 AM	Lidar: a Powerful Tool for Aerosol Transport Studies	Ed Eloranta
10:10 AM	Updates on the International Cooperative for Aerosol Research Multi-Model Ensemble (ICAP-MME)	Peng Lynch
10:40 AM	Break	
11:10 AM	NRL Update	Jeff Reid
11:40 AM	Aerosol Activities at ECMWF	Julie Letertre- Danczak
12:10 PM	Met Office Update	Malcolm Brooks
12:40 PM	Lunch	
2:10 PM	NASA Update	Anton Darmenov
2:40 PM	NCEP Update	Jun Wang
3:10 PM	Update of the aerosol prediction of the Japan Meteorological Agency: Overview	Taichu Tanaka / Akinori Ogi
3:40 PM	Break	
4:00 PM	MetoFrance Update	Laaziz El Amraoui
4:30 PM	BSC Update	Carlos Perez Garcia Pando
5:00 PM	What Will NASA do in the event of a Major Volcanic Eruption	NASA HQ

Wednesday July 13

Start	Item	Contact
8:30 AM	CALIPSO	Dave Winker
9:00 AM	CATS Near Real Time Data and Applications for Aerosol Forecasting	John Yorks
9:30 AM	CATS Aerosol Typing and Future Directions	Ed Nowottnick
10:00 AM	Break	
10:30 AM	Aerosol characterization using airborne HSRL and some applications	Sharon Burton
11:00 AM	Using Airborne HSRL Measurements to Evaluate and Understand Aerosol Models	Rich Ferrare
11:30 AM	MPLNET v3 status and use of ground based lidar for verification and assimilation	Judd Welton
12:00 PM	ECMWF MACC-II evaluation of performances with MPLNET Lidar network at NASA Goddard Flight Center	Simone Lolli

Wednesday July 13, cont.

Start	Item	Contact
12:30 PM	Lunch	
2:00 PM	Determination of Mixing Layer Height and ASOS: Testbed, algorithms and network	Ruben Delgado / Belay Demoz
2:30 PM	EARLINET status, short term plans and long term vision as a component of ACTRIS Research Infrastructure	Lucia Mona
3:00 PM	EARLINET products for model evaluation and assimilation	Ioannis Biniotoglou
3:30 PM	Break	
4:00 PM	Met Office ceilometer and lidar operational networks	Mariana Adam
4:30 PM	Validation/assimilation of chemical transport models using AD-Net lidar data	Nobuo Sugimoto

Thursday July 14

Start	Item	Contact
8:30 AM	JMA Assimilation updates	Keiya Yumimoto
9:00 AM	E-PROFILE/TOPROF	Alexander Haefele / Martial Haeffelin
9:30 AM	NCEP aerosol data assimilation updates	Sarah Lu
10:00 AM	Evaluation of the aerosol vertical distribution in NGAC v2 through comparison against satellite and ground observation data	Partha Bhattacharjee
10:30 AM	Break	
11:00 AM	AERONET version 3	David Giles
11:30 AM	EnKF in NAAPS	Juli Rubin
12:00 PM	EarthCARE/ATLID and Himawari-8 AOD	Maki Kikuchi
12:30 PM		Lunch
2:00 PM	Other PBL-related and NGAC-related activities	Sarah Lu
2:30 PM	Aerosol Lidar Activities at ECMWF: Status and Plans	Julie Letertre-Danczak
3:00 PM	A GEOS-5 Observing System Simulation Experiment of the OMI Aerosol Products	Peter Colarco
3:30 PM	Break	
4:00 PM	Discussion	