

Future Combustion Research to Mitigate Carbon Emissions

[College Park Marriott Hotel & Conference Center](#), Maryland, April 26-27, 2017

Combustion research has a rich heritage in addressing societal needs.

- In the 1970s, combustion research sought to alleviate smog and acid rain problems.
- In the 1980s, ozone depletion concerns and health hazards of particulate matter (PM) emissions were addressed through combustion research.
- In the 1990s, combustion techniques were developed to reduce nitric oxides (NO_x) and carbon monoxide (CO) emissions to meet stringent clean air regulations.
- Combustion of domestically produced biofuels to reduce reliance on imports received significant attention at the turn of the 20th century.



Looking forward, combustion science must provide stewardship to solve mankind's problems of energy and environment. This NSF sponsored workshop brings together scientists and engineers in combustion related fields to generate new ideas to pursue innovative research to mitigate carbon emissions.

Organizing Committee

Professor Ajay K. Agrawal

Robert F. Barfield Endowed Chair Professor
Department of Mechanical Engineering at The
University of Alabama

Professor Derek Dunn-Rankin

Professor of Mechanical and Aerospace Engineering
University of California at Irvine

Professor Arnaud Trouve

Professor, Department of Fire Protection Engineering,
Affiliate professor in Departments of Mechanical
Engineering and Aerospace Engineering
University of Maryland, College Park

Final Program

Wednesday, April 26, 2017

- 1:00-1:30 pm Registration, badge pick up (**Room 2110**)
- 1:30 pm Welcome (Derek Dunn-Rankin)
- 1:35 pm Opening Comments (JoAnn Lighty)
- 1:45 pm Workshop logistics (Arnaud Trouve)
- 1:50 pm Overview and Workshop Goals (Ajay Agrawal)
- Session I: Sustainable Fuels**
- 2:00 pm Presentation (Geo Richards and Jeff Bergthorson) (**Room 2110**)
- 2:25 pm Break-out Session I (**Rooms 2100 and 2101**)
- 3:25 pm Coffee break/open discussion - I
- Session II: Carbon Recycling and Sequestration**
- 3:45 pm Presentation (Richard Axelbaum and Michael Zachariah) (**Room 2110**)
- 4:10 pm Break-out Session II (**Rooms 2100 and 2101**)
- 5:10 pm Coffee break/open discussion - II
- Session III: Big Data and Analytics**
- 5:30 pm Presentation (Phil Westmoreland and Marc Day) (**Room 2110**)
- 5:55 pm Break-out Session III (**Rooms 2100 and 2101**)
- 6:55 pm Dinner (**Chasen Room**)

Thursday, April 27, 2017

- 7:30 am Breakfast (Landin area)
- Session IV: Food, Energy, and Water Nexus**
- 8:00 am Presentation (Brandi Schottel and Derek Dunn-Rankin) (**Room 2110**)
- 8:25 am Break-out Session IV (**Rooms 2101 and 2102**)
- 9:25 am Coffee break/open Discussion – IV
- Session V: Sustaining Combustion Research (Room 2110)**
- 10:00 am Summary of break-out Sessions I, II, III and IV
- 10:35 am Ensuring the field does not burn out (Kyle Niemeyer and Nicole Labbe)
- 11:15 am Mitigating Carbon Emissions: Other ideas and what we learned (Ajay Agrawal and Chris Shaddix)
- 12:15 pm Closing Remarks (Song-Charng Kong)
- 12:30 pm Boxed lunch