

**U.S. Environmental Protection Agency  
Clean Air Scientific Advisory Committee (CASAC)  
Secondary NAAQS Review Panel for Oxides of Nitrogen and Sulfur  
Public Meeting  
Hilton Durham Hotel Near Duke University  
3800 Hillsborough Road  
Durham, North Carolina, 27705**

**AGENDA**

**Purpose:** The CASAC Secondary NAAQS Review Panel for Oxides of Nitrogen and Sulfur will peer review EPA's *Integrated Science Assessment for Oxides of Nitrogen, Oxides of Sulfur, and Particulate Matter – Ecological Criteria (First External Review Draft)*.

**Wednesday, May 24, 2017**

9:00 - 9:15 a.m.	<b>Convene Meeting</b>	Dr. Thomas Armitage Designated Federal Officer
	<b>Welcoming Remarks</b>	Mr. Christopher Zarba, Director, EPA Science Advisory Board Staff Office
	<b>Purpose of the Meeting and Review of Agenda</b>	Dr. Ivan Fernandez, Chair
9:15 - 10:00 a.m.	<b>EPA Presentation on the First External Review Draft of the Integrated Science Assessment (ISA)</b>	Dr. John Vandenberg Dr. Jennifer Richmond- Bryant Dr. Tara Greaver EPA National Center for Environmental Assessment
10:00 - 10:20 a.m.	<b>Public Comments</b>	Registered Speakers
10:20 - 10:30 a.m.	<b>Break</b>	
10:30 - 11:00 a.m.	<b>Review of the Charge Questions</b>	Dr. Fernandez and Panel Members
11:00 a.m. - 12:15 p.m.	<b>Discussion of the Panel's Responses to the ISA Charge Questions</b>	

**Charge Question 2 – Atmospheric Chemistry of Nitrogen and Sulfur Species (Chapter 2 of the ISA)**

**Question 2a** – Sources, chemistry, and measurement and modeling of ambient concentrations

**Question 2b** – Measurement, modeling, prediction, and trends of atmospheric deposition of nitrogen and sulfur, including particulates, and related processes

**Charge Question 3 – Effects of Gas-Phase SO<sub>2</sub>, NO<sub>2</sub>, NO<sub>x</sub>, PAN, and HNO on Vegetation (Chapter 3 of the ISA)**

Lead Discussants: Drs. Donna Kenski<sup>1</sup>, Praveen Amar, Daven Henze, Ted Russell, Stephen Schwartz, Kathleen Weathers

Lead Discussants: Drs. Kathleen Weathers, Edith Allen, Daven Henze, Stephen Schwartz

12:15 - 1:30 p.m.

**Lunch**

1:30 - 3:30 p.m.

**Discussion of the Panel's Responses to the ISA Charge Questions (continued)**

**Charge Question 4 – Biogeochemical Responses of Soils to Nitrogen and Sulfur Deposition (Chapter 4 of the ISA)**

Lead Discussants: Drs. Charles Driscoll, Edith Allen, Robert Howarth

**Charge Question 5 – Terrestrial Biological Responses to Acidifying Deposition (Chapter 5 of the ISA)**

Lead Discussants: Drs. Edith Allen, Mark Fenn, Frank Gilliam

**Charge Question 6 – Terrestrial Biological Responses to Nitrogen Enrichment (Chapter 6 of the ISA)**

Lead Discussants: Drs. Mark Fenn, James Galloway, Frank Gilliam

**Charge Question 7 – Aquatic Biogeochemical Response in Freshwater and Estuarine Systems to Nitrogen and Sulfur Deposition (Chapter 7 of the ISA)**

Lead Discussants: Drs. Douglas Burns, Elizabeth Boyer, Robert Howarth, William McDowell

**Question 7a** – Information on biogeochemical processes and chemical indicators and the discussion on monitoring, models, and national-scale sensitivity

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<sup>1</sup> Lead writers are underlined.

**Question 7b** – Suggestions to improve the linkage of biogeochemical alterations associated with nitrogen and sulfur deposition to biological effects in aquatic systems

3:30 - 3:45 p.m.

**Break**

3:45 - 5:15 p.m.

**Discussion of the Panel's Responses to the ISA Charge Questions (continued)**

**Charge Question 8 – Biological Indicators of Acidifying Deposition and Effects on Biodiversity of Freshwater Biota (Chapter 8 of the ISA)**

Lead Discussants: Drs. Douglas Burns, William McDowell, Stephen Schwartz

**Charge Question 9 – Biological Effects Associated with N Deposition to Freshwater Systems (Chapter 9 of the ISA)**

Lead Discussants: Drs. Elizabeth Boyer, Douglas Burns, James Galloway, Hans Paerl

**Charge Question 10 – Biological Indicators and Effects of Nitrogen Enrichment in Coastal Areas (Chapter 10 of the ISA)**

Lead Discussants: Drs. Hans Paerl, Elizabeth Boyer, Robert Howarth

5:15 p.m.

**Recess for the Day**

**Thursday, May 25, 2017**

8:00 a.m.

**Reconvene**

8:00 - 8:15 a.m.

**Recap of Issues Discussed on Previous Day**

8:15 - 9:45 a.m.

**Discussion of the Panel's Responses to the ISA Charge Questions (continued)**

**Charge Question 11 – Effects of Nitrogen Enrichment in Freshwater Wetlands and Coastal Wetlands (Chapter 11 of the ISA)**

Lead Discussants: Drs. Frank Gilliam, Hans Paerl

**Charge Question 12 – Sulfur Enrichment in Freshwater Aquatic and Wetland Ecosystems (Chapter 12 of the ISA)**

Lead Discussants: Drs. William McDowell, Charles Driscoll

**Charge Question 13 – Climate Modification of Ecosystem Response to Nitrogen and Sulfur Deposition (Chapter 13 of the ISA)**

Lead Discussants: Drs. James Galloway, James Boyd, Charles Driscoll, Daven Henze, Erik Nelson

9:45 - 10:00 a.m.	<b>Break</b>	
10:00 a.m. - 12:00 p.m.	<b>Discussion of the Panel's Responses to the ISA Charge Questions (continued)</b>	
	<b>Charge Question 14 – Effects of Anthropogenic Nitrogen on Ecosystem Services (Chapter 14 of the ISA)</b>	Lead Discussants: Drs. <u>James Boyd</u> , Lauraine Chestnut, Mark Fenn, Erik Nelson, Richard Poirot
	<b>Charge Question 15 – Appendices</b>	Lead Discussants: Drs. <u>Praveen Amar</u> , Lauraine Chestnut, Donna Kenski, Richard Poirot, Erik Nelson, Ted Russell, Kathleen Weathers
	<b>Question 15a</b> – Information in the case studies	
	<b>Question 15b</b> – Characterization of non-nitrogen and non-sulfur particle associated components and their ecological effects	
	<b>Charge Question 1 - Chapter 1 and Executive Summary</b>	Lead Discussants: Drs. <u>Ted Russell</u> , Praveen Amar, James Boyd, Lauraine Chestnut, Richard Poirot, Donna Kenski
	<b>Question 1a</b> – Extent to which objectives (synopsis and synthesis of key findings) are met	
	<b>Question 1b</b> – Application of the causal framework	
12:00 - 1:15 p.m.	<b>Lunch</b>	
1:15 - 1:30 p.m.	<b>Brief Clarifying Comments from Members of the Public</b>	
1:30 - 3:15 p.m.	<b>Summary of Key Points in the Responses to the Charge Questions</b>	Dr. Fernandez and Panel
	Chapter 2	Dr. Kenski
	Chapter 3	Dr. Weathers
	Chapter 4	Dr. Driscoll
	Chapter 5	Dr. Allen
	Chapter 6	Dr. Fenn
	Chapter 7	Dr. Burns
	Chapter 8	Dr. Burns
	Chapter 9	Dr. Boyer
	Chapter 10	Dr. Paerl
	Chapter 11	Dr. Gilliam
	Chapter 12	Dr. McDowell
	Chapter 13	Dr. Galloway
	Chapter 14	Dr. Boyd
	Appendices	Dr. Amar

	Chapter 1 and Executive Summary	Dr. Russell
3:15 - 3:30 p.m.	<b>Summary and Next Steps</b>	Dr. Fernandez
3:30 p.m.	<b>Adjourn</b>	Dr. Armitage