GEORGIA SECTION

MEETING Announcement

ACS Chemistry for Life™

Tuesday, January 20th 2015

Prof. Christopher W. Jones

Removing Carbon Dioxide from the Atmosphere -Scientific, Technological and Societal Challenges

Location:
Eclipse Di Luna – Buckhead
764 Miami Circle, Atlanta GA

Directions: **Click Here**

Tuesday, January 20, 2015

6:00 pm Meet and mingle (cash bar)

6:30 pm Dinner

7:30 pm Presentation

Menu (Unlimited Tapas):

Tapa Selections:

- Apple Salad
- Spiced Potatoes
- Tomato Fresco
- Crispy Green Beans
- Filet de Percha
- Pollo a la plancha
- Spanish Style Ribs
- Chorizo with Dates and Bacon

Desert Selections:

- Turtle Cake
- Key Lime Pie

Price:
$30 regular; $15 students, K-12 teachers, retired current ACS members

RSVP by 4:00 pm on 16 January 2015
to Joel Pollino at joelpollino@gmail.com

Payment: ***At the door***
Cash, Credit Card, or Check to: "Georgia Section ACS"

Prof. Christopher W. Jones

Georgia Institute of Technology

Professor Jones is the New-Vision Professor of Chemical & Biomolecular Engineering and the Associate Vice President for Research at Georgia Tech. There he leads a research group that works in the broad areas of materials, catalysis and adsorption. Prof. Jones has been recognized for his catalysis research by the American Chemical Society with the *Ipatieff Prize* in 2010, and by the North American Catalysis Society with the *Paul H. Emmett Award in Fundamental Catalysis* in 2013. Also in 2013, he was recognized by the American Society of Engineering Education for his work on CO_2 capture with the *Curtis McGraw Research Award*. Dr. Jones is the founding Editor-in-Chief of the new journal, *ACS Catalysis*, which is the top catalysis journal by impact factor. In 2014, he was elected a fellow of the American Association for the Advancement of Science.

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Removing Carbon Dioxide from the Atmosphere: Scientific, Technological and Societal Challenges

Christopher W. Jones
Georgia Institute of Technology

Over 150 years of fossil fuel combustion has increased the global atmospheric carbon dioxide (CO_2) concentration from approximately 280 ppm in pre-industrial times to almost 400 ppm today. Due to the strong link between the rising atmospheric CO_2 concentration and global climate change, we now live in a "carbon-constrained" world, with a strong push from scientists, engineers, segments of the public, and scientifically literate policy-makers for rapid development of alternative energy sources. However, the coupling of growing population and the ever-increasing global standard of living means that increased energy demand will continue. Although a worldwide effort is focused on development and deployment of renewable energy technologies, the pace of development is outpaced by the growth of energy demand. For this reason, fossil energy will continue to supply the preponderance of global energy for generations.

Given continued reliance on fossil energy, global CO_2 emissions will keep rising, hastening climate change. Today, CO_2 emissions from fossil fuel combustion are associated with three broad categories, (i) electricity production from coal or gas-fired power plants (ca. 33-50% of total), (ii) land, air or sea transportation (ca. 33% of total), and (iii) other industrial uses. To date, global climate and energy strategies addressing anthropogenic emissions have focused on capturing the CO_2 emitted from the world's largest point sources – coal-fired power plants. However, the most difficult CO_2 emissions to address are those associated with transportation. On-board CO_2 capture from mobile sources such as automobiles and airplanes is currently impractical. While the electrification of passenger vehicles is (very slowly) shifting some energy use for transportation to large electricity-generating point sources, some mobile CO_2 sources, such as planes, will likely never be electrified. Thus, alternative technologies for addressing CO_2 emissions from mobile sources are needed.

At Georgia Tech, were are developing new technologies to capture CO_2 from both point sources, such as coal and gas fired power plants, as well as from ambient air, termed "direct air capture." In this presentation, I will give a general overview of the possibilities and limitations of each approach.

More About Prof. Jones and his Research Group Can Be Found by Visiting:
http://jones.chbe.gatech.edu/