



INCOSE Chesapeake Chapter
International Council on Systems Engineering

cordially invites you to our

Monthly Dinner and Lecture

Wednesday, 16 May 2012 (6:00 – 8:00 pm)

Engineering Challenges and Scientific Capabilities of the James Webb Space Telescope

Dr. John C. Mather, Nobel Laureate, Senior Astrophysicist NASA Goddard

**Location: Applied Physics Laboratory, Johns Hopkins University
11100 Johns Hopkins Rd Laurel MD 20723 (Main Entrance – Lobby 1)**

Presentation: The JWST is planned for launch in 2018 as the successor to the Hubble Space Telescope. It extends the scientific discoveries of the HST into the infrared band, covering 0.6 to 28 μm , with extraordinary sensitivity to reach far closer to the Big Bang, to look inside dust clouds where stars and planets are forming today, and to observe exoplanetary atmospheres through the transit technique. The 6.5 m telescope mirror is made of 18 beryllium hexagons, all of which are now polished, gold-coated, and tested. Using algorithms developed for the Hubble repair, the JWST will be focused after launch to achieve diffraction-limited performance at 2 μm . The telescope is protected by a 5-layer deployable sunshield the size of a tennis court, to enable it to cool to about 40 K, to reduce its thermal emissions. I will outline the new concepts and technologies needed for the mission and the scientific observations that are likely with the new observatory.



Speaker: Dr. John C. Mather is a Senior Astrophysicist in the Observational Cosmology Laboratory at NASA's Goddard Space Flight Center. His research centers on infrared astronomy and cosmology. He led science efforts for the Cosmic Background Explorer, and showed that the cosmic microwave background radiation has a blackbody spectrum within 50 ppm. As Senior Project Scientist for the JWST, he leads the science team, and represents scientific interests within the project management. He has served on advisory and working groups for the National Academy of Sciences, NASA, and the NSF. Dr. Mather won the 2006 Nobel Prize for Physics along with George F. Smoot, for their collaborative work on understanding the Big Bang

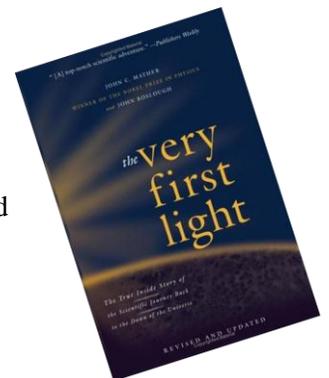
Delicious friendly networking buffet dinner: Pan

Seared Tilapia Filet; Mango avocado Salsa and Cilantro rice with garden salad dressing, rolls and butter, dessert, coffee and iced tea.

Dinner Cost: Guests: **\$25**; INCOSE members: **\$20** if payment is received by April 13th, 2012, **\$25** afterwards. To pay by credit card or PayPal, visit our registration webpage for details <http://www.incose-cc.org/registration/>

Presentation ONLY: FREE at 7pm in Parsons Auditorium

But please register for Lecture Only Option: There could be a big turnout for this event, for planning purposes please RSVP via [our registration webpage](#) even if you don't plan on joining us for dinner.



Door Prize for this month
***The Very First Light* by John Boslough and John Mather**

Corporate Sponsor: We wish to thank the Applied Physics Laboratory for supporting the systems engineering profession through use of their facilities.

Our Evening's Agenda

5:45 – 6:00 pm	Arrival and Socializing
6:00 – 6:45 pm	Dinner
6:45 – 6:50 pm	Meet
6:50 – 6:55 pm	Chapter Business Items
7:00 – 8:00 pm	Lecture

Directions: **JHU APL**, 11100 Johns Hopkins Road, Laurel, Maryland 20723, Phone (443) 778-5000
See APL's Visitor Guide for more: <http://www.jhuapl.edu/aboutapl/visitor/default.asp>

From Washington DC and Capital Beltway (I-495):

Take I-95 North toward Baltimore, 10 miles to Columbia exit (MD Route 32 West),
Go 2.5 miles to the Washington DC exit (US Route 29 South).
Go 1.5 miles south and take Johns Hopkins Road exit (bear right at the top of the hill).

Or from the Capital Beltway (I-495):

Take US Route 29 North (Colesville Road) 10 miles and follow signs for the turn onto Johns Hopkins Road.

From Baltimore and Baltimore Beltway (I-695):

Take I-95 South toward Washington DC.
Go 13 miles and take Columbia exit (MD Route 32 West).
Go 2.5 miles and take Washington DC exit (US Route 29 South).
Go 1.5 miles south and take Johns Hopkins Road exit (bear right at the top of the hill).

Once you're on Johns Hopkins Road:

APL is a half-mile west of US Route 29 on your right side. Go past the first entrance, continuing past the pond and take the next right turn onto a tree-lined lane. Park in the visitor's lot on your left side. Enter at the main entrance marked **Building 1** (flagpoles and traffic circle in front).

Dinner is held in the Howard County Room #3 located at the end of the cafeteria hallway to the right of the entryway just before the Guard's desk.

