



*Hanscom AFB Chapter*

## **ANNUAL BANQUET ANNOUNCEMENT**

**Sunday, 26 October 2008**

**Radisson Heritage Motel**

*in the "Middlesex Room"*

10 Independence Drive, Chelmsford MA -- Adjacent to Parlmont Plaza  
Adjacent to Intersection of Route 110 (Chelmsford Street) and Route 495 (Exit 34)  
On Route 110 between Chelmsford Center and the Route 3 Intersection

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Refreshments 6:00 p.m.

Dinner 6:30 p.m. Guest Speaker 7:45 p.m.

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### **Dr. Charles W. Forsberg**

Research Scientist

Executive Director, MIT Nuclear Fuel Cycle Project

### **Nuclear-Fossil, Nuclear-Bio, Nuclear-Renewable Futures**

#### **ABSTRACT**

The world faces two challenges: (1) climate change and (2) oil dependency. These challenges may require a new energy vision that creates a nuclear-fossil, nuclear-bio, and nuclear-renewable energy future where energy sources complement each other rather than compete with each other. For example, the technology of underground refining is being developed where heat is used underground to convert oil in depleted oil fields, heavy oil, oil sands, shale oil, and soft coal into a high-grade light crude oil and a carbon residue that remains underground. Underground refining has the potential to make the U.S. independent of foreign oil; however, if fossil fuels provided that heat there would be massive greenhouse gas releases—something that can be avoided with heat from nuclear plants. The nation could produce ~1.3 billion tons of renewable biomass per year. If the biomass is used as (1) a feedstock and (2) energy source for conversion to liquid fuels, the equivalent of ~5 million barrels of oil per day can be produced. If low-carbon nuclear energy is used to provide energy to biomass liquid-fuels plants, all the biomass could be converted into liquid fuels with the production of ~12 million barrels of diesel fuel per day. Biomass liquid fuels could become the primary transport fuel in the United States. Similarly, advanced nuclear systems may provide the electricity when the wind does not blow and the sun does not shine. The future may require a paradigm shift from competing energy sources to synergistic energy sources.

#### **BIOGRAPHY**

Dr. Charles Forsberg is the Executive Director of the Massachusetts Institute of Technology Nuclear Fuel Cycle Study. Before joining MIT, he was a Corporate Fellow at Oak Ridge National Laboratory. He is a Fellow of the American Nuclear Society, and recipient of the 2005 Robert E. Wilson Award from the American Institute of Chemical Engineers for outstanding chemical engineering contributions to nuclear energy, including his work in hydrogen production and nuclear-renewable energy futures. He received the American Nuclear Society special

award for innovative nuclear reactor design. Dr. Forsberg earned his bachelor's degree in chemical engineering from the University of Minnesota and his doctorate in Nuclear Engineering from MIT. He has been awarded 10 patents and has published over 200 papers.

**Menu Choices:**

- **NANTUCKET SWORDFISH** *Char-Grilled and Served with a Tomato Basil Chutney*
- **BOURSIN CHICKEN** *A Boneless Breast of Chicken Filled with Prosciutto, Spinach and Boursin Cheese*

New England Clam Chowder, Caesar Salad, Entree, Fresh Rolls, Dessert, Coffee/Tea

**Invite other interested parties to attend!**

**Please Respond No Later than Wednesday 15 October**

**Payment must be received in advance of the banquet.**

Your Hanscom Chapter representatives:

Anthony Midey 781-377-3556	Steve Mittleman (RYH) 781 377 4038
Don Hunton (RVBXT) 781 377 4057	Robert Hartwell (Sec) 978 663 2525 ext 133

Your Chapter secretary may be contacted as follows:

[hartwellreh@earthlink.net](mailto:hartwellreh@earthlink.net)

Robert Hartwell  
10 Parlee Road  
Chelmsford, MA 01824

Please return this section with your check to the Chapter Secretary, or to one or your Hanscom AFB representatives above.

----- **Reservation Details** -----

**Sunday, 26 October 2008**

Name: \_\_\_\_\_

Number Attending: \_\_\_\_\_

**Please Indicate Your Choice(s):**

_____ <b>Nantucket Swordfish</b> <b>\$35.00 per person</b>	_____ <b>Boursin Chicken</b> <b>\$35.00 per person</b>
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Banquet reservations should be made by phone or mail as soon as possible to your banquet representative identified below. The banquet cost is indicated above, please make out checks to Sigma Xi and send them to the Robert Hartwell, Chapter Secretary, 10 Parlee Road, Chelmsford MA 01824.

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