

Please join us for the Seminar and Discussion period that follows.

## Bioastronautics Speaker Seminar Series

# Directed evolution of radiation resistance in *Escherichia coli*

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**Monday, May 21, 2007**

**Seminar, 9:00 – 10:00 a.m.**

**Discussion period, 10:00 – 10:45 a.m.**

Lecture Hall, Center for Advanced Space Studies  
3600 Bay Area Boulevard at Middlebrook Drive, Houston, Texas

Three extremely radioresistant strains of *Escherichia coli* K12 were independently derived from MG1655 following repeated exposure to high dose ionizing radiation. Complete genome re-sequencing revealed that each strain acquired its radioresistance through completely different sets of genetic changes. The results do not highlight a particular strategy for the acquisition of radiation resistance nor reinforce any current idea about the mechanisms underlying the radiation resistance of species such as *Deinococcus radiodurans*. Instead, radiation resistance appears to be a complex phenotype with more than one component. In nature, multiple paths of evolutionary innovation can give rise to radioresistance even within a single species. Link to Cox publications:

[http://www.biochem.wisc.edu/faculty/cox/pub\\_list.html](http://www.biochem.wisc.edu/faculty/cox/pub_list.html)

Following the seminar, members of the audience may wish to stay for an optional discussion period from 10:00 – 10:45 a.m.

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