

ABSTRACT
Dr. Paul Cooper
NASA Goddard Space Flight Center
Greenbelt, MD

**"The production of oxidants in irradiated H₂O ices
and its relevance to the search for non-Earth
originating life on icy planetary bodies"**

Many of the outer solar system planets harbor ice covered satellites that are regularly exposed to high doses of radiation. This radiation results in the formation of molecules such as H₂O₂, O₂ and O₃ that can remain trapped in the icy surface and can potentially be transported to liquid sub-surface oceans. The combination of these two processes has excited astrobiologists to believe that this flow of oxidants could sustain non-Earth originating life in such oceans. I will discuss recent laboratory experiments performed in the Cosmic Ice Laboratory at NASA Goddard Space Flight Center that simulate the irradiation processes that occur on icy satellites such as Europa, Ganymede and Enceladus along with the detection of previously unidentified oxidizing radicals.