**BEYOND CENTER**

**FOR FUNDAMENTAL CONCEPTS IN SCIENCE**

PHYSICAL SCIENCE AND ONCOLOGY WORKSHOP SERIES

 **Oxidative Stress and the Deep Evolutionary Roots of Cancer**

Arizona State University

November 5-6, 2012

**AGENDA**

**Sunday, November 4**

6:00 – 7:30 pm Informal welcome reception

**Monday, November 5**

**Session 1: Oxygen and evolution**

9:00 – 9:30 Paul Davies

 Brief welcome address, outline of the subject and aims of the meeting

9:30 – 10:15 Ariel Anbar

 “The great poisoning: how oxygen transformed our planet”

10:15 - 10:45 Discussion

10:45– 11:15 *Tea/coffee break*

11:15 – 12:00 Charley Lineweaver

 “Ancient genes and cancer: what can astrobiology teach us?”

12:00 – 12:30 Discussion

12:30 – 2:00 *Lunch*

**Session 2: Hypoxia**

2:00 – 2:45 Tom Seyfried

 “Cancer and metabolic malfunction: Warburg revisited”

2:45 – 3:30 Sally Dunwoodie

 “Hypoxia in embryogenesis”

3:30 – 4:00 Discussion

4:00 – 4:30 *Tea/coffee break*

4:30 – 5:15 Bikul Das

 “Embryonic stem cells in low-oxygen environments”

5:15 – 6:00 General discussion

*7:00 Workshop dinner*

**Tuesday, November 6**

**Session 3: Desiccation, hypoxia and ROS**

9:00 – 9:45 am Pedro Zamorano

 “Mitochondria and the evolutionary roots of cancer”

9:45 – 10:30 Phillip James

 “Hyperbaric therapy and cancer”

10:30 – 11:00 *Tea/coffee break*

11:00 – 11:45 Michael Hamblin

 “Photons, ROS and cancer”

11:45 – 12:30 pm Discussion

12:30 – 2:00 *Lunch*

**Session 4: Radiation damage and ROS**

2:00 – 2:45 Charles Cockell

“Underground Astrobiology: a window to early Earth and cancer?”

2:45 – 3:30 Theodore DeWeese

 “Low dose radiation and human tissue”

3:30 – 4:00 Discussion

4:00 – 4:30 *Tea/coffee break*

4:30 – 5:15 Sara Walker

 “The way ahead…”

5:15 – 6:00 General discussion

6:00 pm *Meeting ends*