UNIVERSITY OF WASHINGTON ASTROBIOLOGY CONFERENCE

Mon.-Wed., 6-8 August 2001 -- Crystal Mountain, Washington

The University of Washington is hosting an exciting conference at the dawn of the new field of Astrobiology. The purpose of this conference is to bring together experts to discuss Astrobiology's fundamental principles, past accomplishments, latest scientific results, and future research and technological directions. Rather than the usual proceedings, the conference will produce a graduate student level textbook invaluable to our own Astrobiology graduate program, as well as to the overall development of the field: *Astrobiology: The University of Washington Lectures.* The book will be a high-level, interdisciplinary introduction to the origin and evolution of life on Earth, the geological, physical and chemical conditions that spawn and sustain life, and the detection of extant and extinct life on other planets and moons.

The invited talks (40 minutes long) and chapters are designed to be about two-thirds background tutorial for those who are not in the field of the particular topic, with the remainder more technical and ephemeral; chapters should still be usable in 5 years and perhaps longer.

There will be no contributed oral papers, but poster sessions will be held in the evening .

The conference will be held at Crystal Mountain ski area, in the beautiful Cascade Mountains of Washington state, just northeast of Mt. Rainier National Park and within three hours' drive of Mt. St. Helens. Although in the wilderness, Crystal Mountain is only a two-hour drive from Seattle airport. If you wish, you can take our shuttle van service to and fro, or for greater freedom you can of course rent a car. August is the ideal month for the Cascades: the high snows have largely melted, wildflowers are peaking in the Alpine meadows, weather is fair and in the high 70s, and twilight remains until about 9 pm.

In addition, the UW Center for Astrobiology and Early Evolution will run a concurrent, informal Summer Institute in Astrobiology on the UW campus in Seattle for the three weeks of Mon. 30 July through Fri. 17 August. Further details are below.

ASTROBIOLOGY

CONFERENCE AGENDA (6-8 Aug 2001) & CONTENTS OF BOOK

(# = book only)

0. INTRODUCTION/WELCOME - Baross & Sullivan (eds.)

I. HISTORY

1. History of astrobiology (W. Sullivan)
2. Development of the field of astrobiology: NAS and NASA (TBD)

II. THE PHYSICAL STAGE

1. Origin of planets, elements, comets, asteroids, meteorites (D. Brownlee)
2. Early Earth history, habitats, biogeochemical markers (D. DesMarais)
3. Planetary atmospheres and life (J. Kasting#)
4. History of the Earth's atmosphere (R. Gammon)

III. THE ORIGIN OF LIFE

1. The origin of life: the crucial issues (R. Shapiro)
2. Abiotic synthesis of organic compounds (E. Shock#)
3. The origin of proteins and nucleic acids (S. Benner)
4. The first cell - assembling the parts (D. Deamer)

IV. ORIGIN AND EVOLUTION OF CELLS AND COMMUNITIES

1. The earliest fossils (R. Buick#)
2. The origin and evolution of bacteria and archaea (TBD)
3. The origin and evolution of metabolic pathways (J. Staley/J. Leigh)
4. The origin and evolution of eukaryotes (M. Sogin)
5. Extremophiles and the limits of life (J. Deming/J. Baross)

V. LATER EVOLUTION

1. The fossil record (S. Awramik)
2. Mass extinctions - resetting the clock (P. Ward)

VI. POTENTIALLY HABITABLE PLANETS AND MOONS

1. Mars (B. Jakosky)
2. Europa (C. Chyba)
3. Titan (J. Lunine)
4. Extra-solar planets (P. Butler)

VII. SEARCHING FOR EXTRATERRESTRIAL LIFE

1. Spacecraft instrumentation (TBD)
2. Ethical issues in astrobiology (M. Race)
3. Planetary protection: issues regarding sample return (J. Rummel)
4. SETI (F. Drake)

VIII. SUMMARY (C. Chyba)