

A Welcoming Message From Dr. Allen Tough

Welcome to the fourth Billingham Cutting-Edge Lecture!

The SETI Permanent Study Group plans to sponsor this lecture each year to honor Dr. John Billingham. He chaired this committee (when it was called simply the IAA SETI Committee) for many years and established a visible credible international presence for the SETI field.

Despite his heavy workload, Dr. Billingham graciously mentored newcomers to the field. During my first meeting with him, I recall that he encouraged and inspired me to present a paper at the 1987 IAA meeting in Brighton. In subsequent years, he often helped me frame my ideas to make them better understood.

Traditionally there are two SETI sessions each year at the International Astronautical Congress, the first one technical and the second one devoted to social sciences and interdisciplinary studies. Each year, the Billingham Cutting-Edge Lecture will be presented at the opening of this second session. The SPSG will choose a speaker to present a cutting-edge idea and its potential implications for the scientific search for extraterrestrial intelligence. (To help with travel expenses and/or as a small honorarium, the speaker will be paid \$4000 US. I pledged to sponsor the lecture for five years.) The first three speakers were Dr. Steven Dick, Dr. Kathryn Denning, and Dr. Ivan Almar.

Our hope is to provide an exceptionally stimulating lecture each year. Eventually the breakthrough thinking from one of these lectures may lead to contact with another civilization in the universe.

A Message From Dr. John Billingham

It is surely time, or better, space-time, to bring cosmological questions to the SETI table. Not being an expert, perhaps I could ask Dr. Gardner's opinion about the multiverse theory. If there is indeed an infinite number of universes, is it possible that another Dr. Gardner, immensely far away, is, at this very time, on their planet Earth, giving a talk in their IAA SETI II Session on "How Cosmological Models Should Guide SETI Search Strategies"? If so, this would surely be truest example of great minds thinking alike.

My best wishes for the talk, and to everyone in the SETI Permanent Study Group.

About Dr. John Billingham

John Billingham is Senior Scientist (advisory) at the SETI Institute in California, with a long history of leadership and service to the former NASA SETI program. From 1991 to 1994 he served as Chief of the NASA SETI Office at the Ames Research Center. He was Chief of the NASA ARC Life Sciences Division (1984-1991). Dr. Billingham served for years as vice-chair of the SETI Institute Board of Trustees, and remains a member today. He holds BA and MA degrees in Physiology, and a medical doctorate, all from Oxford University.

How Cosmological Models Should Guide SETI Search Strategies

by James N. Gardner

Abstract: The beginning of the 21st Century is likely to be celebrated by future historians of science as both the dawn of a new era of precision observational cosmology and a historical inflection point notable for a recrudescence of out-of-the-box cosmological theorizing. Both phenomena—the development of new capabilities in the area of precision observational cosmology and the emergence of novel cosmological paradigms—have important implications for SETI research. This paper will explore the implications for SETI research of (1) new cosmological models inspired by string theory (and its successor M-theory) as well as (2) renewed theoretical interest on the part of a growing minority of cosmologists in John Wheeler’s cosmological extrapolations from the Copenhagen interpretation of quantum physics.

About James N. Gardner

James Gardner—the author of *The Intelligent Universe: AI, ET, and the Emerging Mind of the Cosmos*—is a widely published science essayist and complexity theorist. His science essays and peer-reviewed scientific papers have appeared in *Nature Biotechnology*, *WIRED*, *World Link* (the magazine of the World Economic Forum), *The Wall Street Journal*, *Complexity* (the scientific journal of the Santa Fe Institute), *Acta Astronautica* (the scientific journal of the International Academy of Astronautics), the *International Journal of Astrobiology*, and the *Journal of the British Interplanetary Society*. His first book—*BIOCOSM*—was selected by Amazon.com’s editors as one of the ten best science books of 2003. *BIOCOSM* was featured in major articles and reviews in *TIME MAGAZINE*, *U. S. News & World Report*, *Harper’s*, *National Geographic* and *What Is Enlightenment?* magazine and received outspoken praise from many prominent scientists. Gardner has also been a featured speaker at many major scientific institutions and conferences.

Gardner is a former Oregon State Senator and a partner in the Portland law and lobbying firm of Gardner & Gardner. He is a graduate of Yale College and the Yale Law School, where he was Article Editor of the *Yale Law Journal*. Following law school, he served as a law clerk for Judge Alfred T. Goodwin on the U. S. Court of Appeals for the Ninth Circuit and for Justice Potter Stewart on the United States Supreme Court.