Jon Kettenring, Max Morris and Alan Karr

By action of the Board of Trustees of NISS, the 2002 Jerome Sacks Award for Cross-Disciplinary Research is presented to Professor Max Morris, of the Department of Statistics at the Iowa State University, in recognition of his outstanding cross-disciplinary contributions to the statistical sciences, engineering, health physics, geology and toxicology.

Morris will receive a check for $1,000 and a certificate. His name will be added to plaque in the NISS Building that lists the names of all recipients of the award.

Award Citation

Reflecting perfectly the spirit of the award, Professor Morris' research touches on a wide range of areas, and has had significant practical impact.

He is a leading expert in the design and analysis of computer experiments, and has developed methods that have found their way into many areas of science and engineering in which use of large-scale computational models is routine.

His collaborative work at Oak Ridge National Laboratory led to statistical methods that, in conjunction with boundary element models, address a variety of inverse problems. Examples include the design of electronic metal detection systems and of underground cavities, and identification of interior defects given measurements on a surface, a common problem in non-destructive testing.

Professor Morris has also contributed greatly to research in environmental and health sciences. His collaborative work on hematopoietic cell kinetics, for example, spans dose response modeling, evaluation of radiation dosimetry methodology, modeling and estimation in radiation induced myelopoiesis, and cell kinetics. His research on functional models of the reaction of the human bone marrow system to radiation exposure continues to be used by the U.S. military to develop combat guidelines.

In addition to his scientific contributions and collaborations, Professor Morris is a committed educator, with an outstanding reputation both inside and outside of the classroom.

Professor Morris' work displays his rare talent for matching a very pragmatic view of problems in applied science with the elegance of mathematical statistics. He is an innovative, sought-after collaborator in interdisciplinary teams, and the statistical tools he has developed to solve problems in one discipline have often crossed boundaries to be used by applied scientists in others. He is a most deserving recipient of the Sacks Award for 2002.

Following the presentation of the award Dr. Morris made these remarks:

When I first met Jerry Sacks in the mid 80's, I also met another very interesting character, Michael Frenklach, a chemical engineer then on the faculty of Penn State University. The reason I met them at the same time is that they were working together, combining Jerry's statistical ideas concerning abstract computer models and Michael's very specific model of methane combustion in an attempt to produce new scientific knowledge -- a terrific example of cross-disciplinary research. This award has great personal significance for me, not only because I count Jerry to be a good friend, but also because I share his belief that statistics at its best is statistics being used to solve hard, important, non-standard problems.

Jerry's vision of and belief in cross-disciplinary research were guiding principals upon which NISS was founded and began operation. NISS, in turn, has sponsored scores of cutting-edge projects -- cutting-edge statistics and cutting-edge application -- contributing to a wide variety of important research efforts. A critical by-product of this activity has been the opportunity it has provided new PhD's to see and learn how the practice of statistics is much more than the academic pursuit they study in graduate school. The energy and synergy that have resulted from the NISS teams of young and seasoned statisticians, and academic, industrial, and government problem-solvers has been one of the great success stories of our discipline in recent years. This is part of the response to the questions we often hear about whether statistics has outlived its usefulness.

NISS-associated statisticians and others who work in cross-disciplinary research know that success generally belongs to teams rather than to individuals. I've enjoyed success as a part of teams at the University of Texas, Mississippi State University, and Oak Ridge National Laboratory, and am now enjoying new collaborative challenges at Iowa State University and Los Alamos National Laboratory. I've been privileged to know, learn from, and work with extremely talented and dedicated mathematicians, biologists, engineers, and physicists. I've been given opportunities to work on long-term inter-disciplinary research projects with widely varying subjects and goals. In each case, we've learned something about solving a real-world problem,

and something about improving the use of statistical ideas. And, in each case, I've discovered new questions about what the general aims of statistics should be, and more specific and interesting research questions than I can ever hope to answer. Any success I have had belongs at least equally to numerous teachers, colleagues, and students. Were I to read a complete list of names, I would look up to see that you had all left the room or dozed off. So I shall narrow it down to only the late Toby Mitchell, who was for so many years my model and mentor in this business of making statistics a relevant endeavor.

As we all know, statistics has certainly not outlived its usefulness. But we must remember that "usefulness" is ultimately measured in our ability to contribute to the solution of hard, real problems-of-the-day. And our future success depends on directing our own research efforts so that we can continue to make these contributions as these problems-of-the-day evolve. I am deeply honored by the recognition that I may actually be playing some small part in this process, and am grateful and delighted to be the recipient of this award.