UCAR Trustee Candidate

Robert Wilhelmson

The UCAR Members’ Nominating Committee is pleased to nominate Dr. Robert Wilhelmson from the University of Illinois for election as a UCAR Trustee. Dr. Wilhelmson is a professor in the Department of Atmospheric Sciences and a Senior Research Scientist with the National Center for Supercomputing Applications (NCSA). His area of research primarily focuses on initiation and structure of severe storms and numerical modeling about which he has published widely. He has worked extensively with NCAR scientists through the years developing and enhancing three dimensional models and works closely with the WRF project for which he serves on the Science Board.

Dr. Wilhelmson brings a deep computational science background to the slate as well as extensive knowledge of NCAR and UOP programs through long associations with the Unidata Program, and DLESE and MMM scientists. His knowledge of collaborative, computational, and information technologies would be very useful as UCAR, NCAR, and UOP plan for the future in these areas, and his interest in, and knowledge of, K-16 Education—specifically developing Web technologies and visualization tools to enhance teaching and learning—would also bring a valuable perspective to the UCAR Board.

PERSONAL STATEMENT

The UCAR Board of Trustees plays a vital role in the management of UCAR and in fostering new activities that will benefit the whole UCAR community. Since the summers spent at NCAR during my graduate student days, I have taken a working interest in UCAR activities as indicated by my involvement above. My particular areas of interest include convective modeling, numerical methods, visualization, technology enhanced educational activities, and “Cyber Infrastructure’ development. The latter development is enabling new modes of interaction and information sharing through high performance networks and access to new supercomputers, data repositories, on-line instruments, and digital libraries. It is vital that this infrastructure and related information technology development advance university and NCAR interests through support of productive collaborations and new forms of distance education.

I have been actively involved with NCSA since the writing of the proposal that originally launched the supercomputing center and am now an active participant with NCSA in the TeraGrid—a recently funded (53 million dollar award) cyberinfrastructure deployment that integrates distributed scientific instruments, terascale and petascale computing facilities, multiple petabyte data archives, and gigabit (and soon terabit) networks. Further, at NCSA one of my responsibilities involves building stronger NCAR/NCSA relations for creating this knowledge and computing infrastructure that will support much of the collaborative and interdisciplinary research, community model development and usage, distributed data storage and access, and local and remote teaching activities in the coming decades. Current joint efforts are being focused on the new community WRF model that is being built under the coordination of Dr. Klemp at NCAR. This new mesoscale modeling environment will serve the future needs of the mesoscale research and forecasting communities within UCAR and within several government agencies.
As a member of the Trustee Board, I would bring a unique atmospheric research, computational science, and information/education technology perspective to decisions and priorities that impact the ability of UCAR members and programs to carry out their research, teaching, and service missions. Further, I believe that UCAR could broaden its coverage of significant university activities of relevance to the atmospheric sciences beyond that associated with major programs typically written about in the UCAR Quarterly. This could be accomplished through its expansion and the development of a Web-accessible newsletter focused on research, educational, and service projects within the university that are of potential interest to the broader atmospheric science community and include a Department Head/Chair column. Finally, I believe that NCAR/university/agency interaction could be strengthened through the use of new communication and collaborative technologies such as the Access Grid. This hardware and software technology utilizes high speed national and international networks for distributed meetings and workshops, collaborative research, and interactive distance learning.

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**BIOGRAPHICAL INFORMATION**

**Title/Position:** Professor, Department of Atmospheric Sciences and Senior Research Scientist, National Center for Supercomputing Applications

**Institution:** University of Illinois

**Education:**
- B.S., Mathematics, Wheaton College, Illinois, 1966
- M.S., Computer Science, University of Illinois, 1969
- Ph.D., Computer Science, University of Illinois, 1972

**Area of Specialty:** convection, severe storms, numerical modeling, high performance computing and associated information technology, visualization, web-enhanced education

**Research/Academic Experience:**
- 1966–69, Research Assistant, Computer Science Department, U. of Illinois
- 1969–72, Research Assistant, Laboratory for Atmospheric Research, U. of Illinois
- 1972–74, Research Assistant Professor, Laboratory for Atmospheric Research & Center for Advanced Computation, U. of Illinois
- 1974–78, Assistant Professor, Laboratory for Atmospheric Research & Center for Advanced Computation, U. of Illinois
- 1978–83, Associate Professor, Laboratory for Atmospheric Research, U. of Illinois
- 1983–present, Professor, Department of Atmospheric Sciences, U. of Illinois
- 1987–present, Senior Research Scientist, National Center for Supercomputing Applications

**Administrative Experience:**
- 1985–86, Assistant Director, National Center for Supercomputing Applications, U. of Illinois
- 1986–87, Associate Director, National Center for Supercomputing Applications, U. of Illinois
- 1993–94 and 1996–99, Department Head, Department of Atmospheric Sciences
- 1996–2000, Co-lead of the Environmental Hydrology Team at NCSA
- 2000–present, Lead for the Environmental Hydrology Team at NCSA
UCAR Participation:
1975–77, Member of the Advisory Comm. for NCAR Small-Scale Analysis & Prediction Project
1984–86, UNIDATA Management Advisory Committee
1984–86, UNIDATA Local Hardware and Software Systems Working Group
1985, NCAR Front End Committee
1986–88, UNIDATA Steering Committee
1990–92, UCAR Members’ Scientific Programs Evaluation Committee
1999–present, Digital Library for Earth System Education (DLESE) Steering Committee
2000, Committee to develop NCAR Strategic Plan Comm. for High Performance Simulations
2000–present, WRF Science Board

Additional Information:
1979, NCAR Outstanding Publication Award with Dr. Klemp
1983, AMS Meisinger Award with Dr. Klemp
1989, “Study of a Numerically Modeled Severe Storm” received the First Place Visualization Award at “The Computer Graphics Film Festival 1989” held in London, England and subsequently was submitted for an Academy Award.
1990, Fellow of the American Meteorological Society
1992 – 1994, University and Planet Earth Steering Committee
1993 – 1994, Environmental Task Force Steering Committee
1996, NOAA/ERL Outstanding Publication Award with Dr. Brooks
1996 – 1998, Computational Science and Engineering Program Representative, UIUC
1998 – 2001, AMS Information Technology Committee
2001, Editorial Board, *Journal for Earth System Science Education*