



The National Research Center for Statistics and the Environment

The University of Washington
October 29, 1999

NRCSE Moves to New Location

The NRCSE moved to their new offices on October 5, 1999 in Padelford Hall, Room B211. New office numbers are as follows:

Peter Guttorp:	B223	616-9262
Paul Sampson:	B215	685-6785
Gerri Goedde:	B211	616-9262
Erik Christianson:	B224	616-6282
Eun Sug Park:	B207	616-9439
Doris Damian, Marianne Turley and Nicolle Mode:	B228	616-9440
Tamre Cardoso, David Caccia and Malay Chan:	B226	616-9440

We have a Visitor room, B213, 616-6236, and Members room, B220, at the same number.

Please stop by our new space. An Open House is planned before the Holidays.

RECOGNITION AND AWARDS

Paul D. Sampson Wins Distinguished Achievement Award

Paul Sampson has been selected to receive the 1999 American Statistical Association Section on Statistics and the Environment Distinguished Achievement Award. This is the highest honor bestowed upon a professional from the Section. The award was given at the ASA meeting in Baltimore in early August. Previous recipients include Center member Loveday Conquest and the three members of the NRCSE Advisory Committee, Paul Switzer, Lawrence H. Cox and Abdel El-Shaarawi.

Northwest Center for Particulate Matter and Health awarded to UW

The EPA has awarded one of its five centers for particulate matter research to the University of Washington. The new Northwest Center for Particulate Matter and Health will be directed by Jane Koenig in Environmental Health. NRCSE members Lianne Sheppard and Thomas Lumley will be heavily involved in the work at the new Center. Projects include time-series analyses with routinely collected data, collection of individual exposure data for healthy and susceptible individuals, and development of animal models. More information can be obtained at their web site: <http://depts.washington.edu/pmcenter>.

Joel Reynolds Accepts New Position

Center member Joel Reynolds has completed his Affiliate Assistant Professor position at the UW and has been hired by the Gene Conservation Laboratory of the Commercial Fisheries Division of the Alaska Department of Fish and Game in Anchorage. He will be continuing his research at the Center with David Ford on model assessment.

PAPERS SUBMITTED/PUBLISHED BY CENTER MEMBERS

Graduate student Nick Hedley, who works with Center member Tim Nyerges, had a research paper accepted for publication. It is "Hagerstrand Revisited: Interactive Space-Time Visualizations of Complex Spatial Data", and appears in the computer science and informatics journal, *Informatica*, Volume 23, No.4. This paper describes the implementation of dynamic 3D representations of worker space time trajectories and radiological hazards at the Hanford site. Interactive 3D visualizations are proposed as useful multi-stakeholder tools to enhance efficiency in environmental remediation, decision-making and administration.

Papers Submitted cont.

Hedley, N.R. and B.D. Campbell (1998). "Collaborative GeoScientific Visualization Project Final Report", Human Interface Technology Laboratory Technical Report R-99-30. Seattle: Human Interface Technology Lab.

Hedley, N.R. "Uncertainty in Environmental Research: Beyond Conceptual Difficulties and Synthetic Frameworks", submitted to the Journal of Risk and Uncertainty.

Nick has also been invited to present research in the construction of cognitive models based on technology-mediated visualization of the real world, in a session at the Association of American Geographers' 2000 Annual meeting in Pittsburgh on April 2-4.

Mary Lou Thompson, J. Reynolds, L. Cox, P. Guttorp, P.D. Sampson submitted a paper, "A Review of Statistical Adjustment of Ozone for Meteorological Variables" to Atmospheric Environment.

Thomas Lumley and D. Levy's paper, "Bias in the case-cross-over design: implications for studies of air pollution" and Thomas Lumley and Lianne Sheppard's paper "Assessing seasonal confounding and model selection bias in air pollution epidemiology using positive and negative control analyses" were submitted to a special issue of *Environmetrics* on particulate matter analysis.

Jim Hughes has published in *Climate Research* 12:1-14: Charles SP, Bates BC, Whetton PH, Hughes JP, "Validation of downscaling models for changed climate conditions in southwestern Australia". Also in press: Charles SP, Bates BC, Hughes JP, "A spatio-temporal model for downscaling precipitation occurrence and amounts", *J. Geophysical Research*. Additionally, a paper has been accepted, "Window subsampling of estimating functions with application to regression models", Heagerty PJ, and Lumley T.

Laura Bowling, a student of Dennis Lettenmaier, submitted a journal article to *Water Resources Research* in August 1999 which concerns the NRCSE-related assessment of the hydrologic effects of logging in the Pacific Northwest. The paper is entitled "Hydrologic effects of logging in Western Washington", with authors L. C. Bowling, P. Storck and D.P. Lettenmaier.

WORKSHOPS/SEMINARS

Quality Assurance of Environmental Models Workshop, UW

The Quality Assurance of Environmental Models workshop was held in Seattle on Sept. 7-10, 1999. Access to information on that workshop is at website:<http://www.nrcse.washington.edu/events/qaem/qaem.asp>. A report with the conclusions from the discussion groups of the workshop will be available early next year.

Workshop for EPA on the Statistical Basis of Human Health Risk Assessment

Center members Elaine Faustman and Rafael Ponce, with Pat Cirone at EPA Region X will be organizing a workshop that is tentatively planned for mid-February at the UW. The intent of this effort is to ensure some understanding of statistical issues underlying risk assessment problems that occur with the EPA. Members of other agencies will also be invited to attend. The end product of this workshop will be to design a course manual for a series of classes that will be held here, each focussed on a specific topic.

Those interested in participating in the development of the courses are invited to contact Rafael at rponce@u.washington.edu.

Exposure Assessment Workshop

Alison Cullen was involved in the planning of a NRCSE sponsored workshop in Donovaly, Slovakia on October 24-26, 1999. The purpose of the workshop was to enhance capabilities to identify, assess and manage high priority environmental and/or occupational health issues in Eastern Europe.

PROPOSALS

Causal Modeling Proposal

Center member Thomas Richardson recently submitted a proposal to the EPA entitled, "Graphical Models for Statistical and Causal Inferences About Mortality from Airborne Particles (PM)" It is a 3-year proposal and would include funding for a graduate student. His contact at the EPA is Allan Marcus, who was a Center visitor last summer.

VISITORS

Dianne Cook, Eric Smith and Ronit Nirel

This summer we had two returning visitors, Di Cook, from Iowa State University, and Eric Smith, from Virginia Tech. Di stayed for about a month, working with Thomas Lumley and Tony Rossini on the ORCA Visualization System and Eric's visit was for two months, teaching a course in Applied Multivariate Statistics.

A new visitor this summer was Ronit Nirel, from The Hebrew University of Jerusalem, Israel. She came to work with the Center "Standards Group" (Peter Guttorp, Paul Sampson, and Mary Lou Thompson) on an application of change-point methods to the formulation and surveillance of air quality standards. She was here from July 14-August 28, 1999.

Doug Nychka, Ta-Hsin Li

Doug Nychka, from the Geophysical Statistics Program at NCAR, visited in late June to work with Peter Guttorp and Di Cook. He also met with some Center-affiliated graduate students.

Ta-Hsin Li visited in early July and gave a talk entitled "Multiscale Representation and Analysis of Spherical Data by Spherical Wavelets". He works at IBM at the T. J. Watson Research Center in New York.

Bimal Sinha

Bimal Sinha visited the NRCSE on September 23 and spent time with Loveday Conquest, Nicolle Mode and Barry Nussbaum from the EPA.

Clifford Spiegelman

Clifford Spiegelman, from Texas A & M University, was visiting the Center on October 20-22. He worked with our postdoc Eun Sug Park on multivariate environmental statistics and with Peter Guttorp on issues related to the Encyclopedia of Environmetrics.

NEW COURSES

NRCSE Affiliate Receives Contract from EPA

Dr. Steven P. Millard, a statistical consultant and an affiliate of NRCSE, has been awarded a contract from the US EPA Region X Office to develop and teach a 3-day course on environmental statistics and software. The contract includes four major tasks:

- 1) A needs assessment phase during which EPA Region X staff will be given a questionnaire asking them how they use statistics and software in their work and what they want to learn about. The questionnaire will be followed up with personal interviews and requests for data that have been used in past projects in order to incorporate these data into the course.
- 2) The design and development of the curriculum. General topics that will be covered during the course include basic concepts in environmental statistics, and the use of S-PLUS, ENVIRONMENTALSTATS for S-PLUS, and S+SpatialStats to analyze environmental data.
- 3) The presentation of the course at a training facility in which students will have hands-on access to a personal computer in order to learn the software.
- 4) Follow-up consulting.

Ms. Kristen Ryding, a student in Quantitative Ecology and Resource Management at the University of Washington and an NRCSE intern at the EPA Region X Office, will be assisting Dr. Millard in all phases of this contract. The tasks for the contract will be completed during the Fall, with the course tentatively scheduled for late November or early December.

EXECUTIVE COMMITTEE NEWS

New Members

Two new members were recently elected to the Center, Dean Billheimer and Tilmann Gneiting, from Statistics.

NRCSE part of European Union research project

A joint proposal between the Universities of Linkoping (Sweden), Washington (USA), Lancaster (UK), and the Finnish Meteorological Institute, the European Commission Joint Research Center in Ispra (Italy), GKSS in Geesthacht (Germany) and ARMINES in Fontainebleau (France) on "Estimation of human impact in the presence of natural fluctuations" has been funded by the European Commission Research Directorate in Brussels (Belgium). The funding (900 000 euro) is aimed at creating tools for time series decomposition into meteorologically induced fluctuations and estimates of human impact; significance tests permitting retrospective impact assessment; and model reduction procedures that facilitate merging of statistical and mechanistic approaches. The NRCSE part of the project focuses on the singular value decomposition as a tool for meteorological adjustment of spatio-temporal air quality data. The project will be directed by Anders Grimvall at University of Linkoping, and co-investigators include Hans Wackernagel, Peter Young, Peter Diggle, Ulrich Callies, Peter Guttorp, Jari Walden, and Andrea Saltelli.

FROM THE DIRECTOR

This newsletter has been in production since early in the summer, but a lot of things have kept us from finishing it. The most important issue was, of course, the move from Bagley to Padelford. This was made necessary when the Provost's office told us that we could stay in Bagley at most through the current academic year. The Statistics department, having an unusually low number of students and faculty present this year, proposed that NRCSE move into space that has been used as student space underneath the Statistics department main office. While this is a tight fit, there are clear advantages in being close to both the Statistics department and the Mathematics-Statistics Research Library. As always, there is office space for members and visitors, postdocs and students, as well as for the administrative staff. Come by the second floor of Padelford's B-wing if you have not yet been there. A lot of activity is going on in the halls!

We have now entered the fourth year of EPA funding, and need to start gearing up for the proposal we hope EPA will request within a year for renewal funding. We do not yet know whether or not there will be an RFP for a statistics center, but if and when it is announced we need to be ready. Mary Lou Thompson is heading a planning committee for an internal workshop that will take place on Thursday, January 20, 2000 in Parrington Hall. The idea is for each of us to tell the others what we are working on, and to identify areas where we can make an impact on environmental science.

In order to make sure that EPA personnel hear about what we are up to, we will organize trips to at least two more EPA labs (Las Vegas and Research Triangle Park) this year. We use these workshops as a vehicle for members and students to interact with EPA researchers who are working in similar areas; to exchange ideas and expand research horizons at NRCSE.