ANDREW C. KOEHLER
AKOEHLER@LANL.GOV
LOS ALAMOS NATIONAL LABORATORY
D-1, MS F600
LOS ALAMOS, NM 87545
505-667-9513

RESEARCH INTEREST:

To enhance national capabilities to deploy and understand the behavior of complex systems through the following methods:

- Policy Analysis of Complex Socio-Technical Systems
- System Predictability and Reliability Modeling
- Knowledge Integration Technologies Tool Development

EDUCATION:

- PhD, Goldman School of Public Policy, University of California, Berkeley, 2001. Thesis: *Design for a Hostile Environment: Technical Policy-making and System Creation*. My thesis studied engineering design choice under political uncertainty.
- MPP, Goldman School of Public Policy, University of California, Berkeley, 1995.
- BA, Phi-Beta Kappa, with Honors, History and Economics Double Major, University of California, Berkeley 1991.

PRESENT ACTIVITIES:

Presently, I am with the System Ethnography and Qualitative Modeling Team (SEQM) working with the Statistical Sciences Group at Los Alamos National Laboratory (D-1). My efforts focus on the development of tools and methods needed to translate qualitative and quantitative data about complex systems into models that can be used for predictive behavioral analysis. As part of this effort, I have worked on a variety of projects relating to DoD and DOE weapons stockpile programs, DHS sensor deployment, and a number of facility design and vulnerability analyses. In addition, I am presently the Enterprise Integration Steering Committee member for the Advanced Design and Production Technology (ADAPT) campaign at Los Alamos.

These efforts have contributed to a number of ongoing research projects. First, I am presently working (as part of the SEQM team) on the development of a new system behavioral modeling tool called GROMIT. Second, based on success analyzing missile stockpiles for the USMC, I am working on case studies describing the methods used in producing a statistical model for reliability that significantly increased system service life-times through increased efficiency of data-use. Third, I am exploring how similar elicitation and analysis approaches may be used in the service of a variety of social and technical system predictive problems.

PRIOR EXPERIENCE:

- Extensive knowledge of US nuclear facilities and practices gathered as part of research with NMT-DO and the Center for Nuclear and Toxic Waste Management at Berkeley. Spent close to two years developing process, resource, and planning models with the Office of Planning and Scheduling.
- Experienced in gathering information from quantitative and qualitative sources, analyzing these data streams using a variety of methods including simulation modeling, econometric analysis, and operations research tools, and using the analysis to derive intelligent predictions about operational performance. I have worked on a wide variety of issues from international environmental policy at EPA's Office of International Activities, to forecasting the demand for telecommuting in the Bay Area, to evaluation of the California welfare system with the UC Berkeley Survey Research Center.
- Hands-on experience developing large requirements verification and validation databases as part of a systems-engineering team developing F&OR documentation for a new analytical chemistry facility.
- Experience with high-technology activities (particularly satellite communications with the American Mobile Satellite Corporation) and the ways in which the organizational, marketing and technical structures behind such activities function.

SELECTED PUBLICATIONS:

Koehler, Andrew, Sims, Ben and Richard Klamann, "Creating Boundary Objects: New Challenges and Opportunities for STS in System Statistical Modeling and Reliability" Forthcoming, 2004

Koehler, Andrew, Johnell Gonzales-Lujan, George Tompkins, Robert Burnside, and Drew Kornreich. "Simulation of Human Factors for Material Safety (LA-UR-03-2754)." Institute of Nuclear Materials Management 2003 Workshop, 8. Oak Ridge, TN: LANL, 2003

Koehler, Andrew, "Safety Design Choice from Inside the Bunker: Examples from the Los Alamos Plutonium Handling Facility," in Constructing Risk and Safety in Technological Practice, Routledge, London, UK, December 2002.

Koehler, Andrew, and Adam Stone, "Strategies for Integrating Social and Technical Information in High Technology Policymaking," International Forum: Youth and the Plutonium Challenge, Russian Nuclear Society, Youth Department, 1998, Conference Transactions.

Koehler, Andrew and Adam Stone, "System Engineering for Informal Regulation," International Conference on Systems Engineering, 1998, Conference Proceedings.

Kirp, David L., Koehler, Andrew, and Jaime Rossi, "Moral Rorschachs: *1984* and *The Plague* After Half a Century," The Nation, May 4, 1998.

Koehler, Andrew and Michael O'Hare, "Integrating Institutional Considerations Into Technical System Design," Presented at the 1997 American Public Policy and Management Association Conference, 11/97.

Koehler, Andrew and Michael O'Hare, "Environmental Indicators as Political and Administrative Tools," Presented at the 1996 American Public Policy and Management Association Conference, 11/96.

Koehler, Andrew, Stone, Adam and Sue Perlmutter, "The Use of System Engineering Tools in the Social Sciences," International Conference on Systems Engineering, 1997 Conference.

Neuhauser, Frank, and Andrew Koehler, "Evaluating the 1990 Reforms of the Medical-Legal Process Using the WCIRB Permanent Disability Survey," Report to the State of California Worker's Compensation Insurance Review Board, UC-Data, Survey Research Center, 1995.

AWARDS:

- Distinguished Performance Award, Los Alamos National Laboratory 2004
- Goldman School of Public Policy Doctoral Fellowship Award, 1996
- Environmental Careers Organization Fund Recipient, 1994

OTHER:

I am presently active with the St. John's College Search and Rescue Team, training to become a Wilderness First Responder. I am a PADI certified Advanced Open Water SCUBA diver, hold a private pilot's license (VFR, rated on Cessna 172 & Mooney 205), ride motorcycles, and have taken simulator training in the start-up, shut-down and diagnostics of Pressurized Light Water Reactors at the Diablo Canyon NPP. I have also traveled widely in the US, Japan, Russia, France and Sweden.