

## Philip James Maechling

### RESEARCH INTERESTS

---

New software system development, scientific workflows, high performance computing and networking, computational and data grids, real-time systems, collaborative computing, and geophysical software and systems.

### EDUCATION

---

9/04 – 12/05	University of Southern California Graduate Work in Computer Science <i>Coursework completed: 9 Credit-Hours</i>	GPA: 3.70/4.00
9/95 – 12/00	California State University, Long Beach Graduate Work in Computer Science <i>Coursework completed: 19 Credit-Hours</i>	GPA: 4.00/4.00
9/93 – 12/94	California State University, Los Angeles <i>Coursework completed: 8 Credit-Hours</i>	GPA: 3.50/4.00
6/88 – 5/91	California State University, Dominguez Hills Computer Science Certificate <i>Coursework complete: 9 Credit-Hours</i>	GPA: 3.83/4.00
9/85 – 12/85	University of California, Los Angeles Extension <i>Coursework completed: 3 Credit-Hours</i>	GPA: 4.00/4.00
9/81 – 5/83 9/76 – 5/80	Xavier University, Cincinnati, Ohio B.S. in Applied Physics	GPA: 2.89/4.00
8/80 – 9/81	Cincinnati State Technical and Community College A.S. in Electronics Engineering Technology	GPA: 3.49/4.00

### PROFESSIONAL EXPERIENCE

---

- 11/02 – present    *IT Architect – MIS Director*, Southern California Earthquake Center, Los Angeles, CA
- System and software architect for high performance, grid-based, earthquake simulation system, the SCEC Community Modeling Environment (SCEC/CME). Evaluated, selected, and integrated knowledge-based reasoning tools, scientific workflow tools, large-scale data management tools, portal technologies, grid-based infrastructure, and a large number of geophysical application codes. The SCEC/CME system is now a high performance simulation modeling environment that researchers are using to perform basic geophysical and computer science research.
  - IT Architect and Project Manager on the SCEC PetaSHA Project, a \$2 million, 2 year, collaborative research and development project funded by the National Science Foundation entitled “A Petascale Cyberfacility for

Physics-based Seismic Hazard Research". This project performs seismic hazard analysis research using high performance computing techniques at national supercomputing facilities.

- IT Architect and Project Manager for the W. M. Keck Collaboratory for the Study of Earthquake Predictability, a \$1.2 million, 3 year, collaborative research Project to establish a rigorous computing environment in which to evaluate earthquake predictions.
- Successfully managed the SCEC/CME Project, a \$10 million, 5 year, collaborative research and development Project funded by National Science Foundation Information Technology Research Program. SCEC/CME staff involves researchers from fourteen different organizations including both geophysical and computer science researchers. Responsible for project planning, budgeting, staffing, identification of collaborative areas, prioritization of work, performance evaluation, and dissemination of results.
- Collaborated on the writing and development of proposals funded by the National Science Foundation, W.M. Keck Foundation, and United States Geological Survey resulting in awards of more than \$3.2 million.
- Wrote allocation requests to U.S.C. High Performance Computing and Communications and National Science Foundation NPACI and TeraGrid allocations committees resulting in awards of more than 1 million CPU-Hours of computing time.
- Demonstrated ability to prioritize group activities in large complex scientific research and development projects. Appropriate selection of high value, significant activities is essential to the success of these Projects.

1/02 – 11/02      *Lead Programmer/Analyst*, Kaiser Permanente, Pasadena, CA

- Led development of a new medical facility materiel management system that used PDA's as user input devices, and web-based, J2EE, Oracle-8i, server-side architecture and portal-based access to information displays and system administration. Responsible for transitioning traditional, main-frame development team to new J2EE software technologies using an agile software development process (XP).

1/01 – 10/02      *Lead Software Engineer*, Cysive, Inc., Irvine, CA

- Designed, developed and deployed web-based, enterprise applications using Java 2, Java Server Pages (JSPs), Enterprise Java Beans (EJBs), and Oracle 8i on Windows 2000 Server. Performed consulting work, including process review and improvement, and technology options and optimizations with clients transitioning from mainframe to J2EE technologies.

2/93 – 12/00      *Member of the Professional Staff*, California Institute of Technology, Pasadena, CA

- Software development coordinator for the Caltech/USGS Element of TriNet, one of the largest, most advanced, seismic data acquisition and real-time earthquake monitoring systems in the world. Led system and software design effort. Coordinated design, development, and integration activities of scientists, engineers, and analysts on a complex, tightly scheduled, development activity in a highly competitive academic and professional environment. Development staff included PhD researchers, seismic analysts, and software developers.
- TriNet system became operational on-time and on-budget and has performed as the primary earthquake reporting system for Southern California since January, 2000. TriNet system design elements, including database replication, continuous-load amplitude calculations, flexible alarming design, and system monitoring tools (SeisNetWatch) have been adopted by the California Integrated Seismic Network (CISN).
- Led a pilot project that demonstrated the feasibility of using digital seismic instruments in real-time earthquake monitoring systems. Developed real-time software implementations necessary to find earthquake

locations and magnitudes. Developed and deployed fast-packet networking design that included frame-relay, IP network, and VSAT telemetry to acquire digital data from remote sensors.

- 6/90 – 2/93      *Sr. Member of the Technical Staff*, TRW Inc. Systems Engineering and Development Division
- Developed prototype Army and Air Force Command and Control Systems in support of TRW proposal activities by developing new, and modifying existing, C and Ada language software. Received TRW performance award for work.
  - Performed Design Integration activities on CCPDS-R Air Force missile warning system including software integration, performance evaluation for 1,000,000+ lines of code (Ada) command and control system.
- 6/86 – 6/90      *Sr. Member of the Technical Staff*, Hughes Aircraft Company, Ground Systems Group
- Software development for an Army command and control system (FAAD C2I). Formal system and software design, code, and test development process using Ada and COTS Unix hardware.
  - System engineering for Army command and control system. Performed engineering analysis, wrote engineering design documents, presented design at Subsystem Design Review (SSDR) and Critical Design Review (CDR) customer reviews. Received Hughes Corporate Performance award for work.
- 9/83 – 6/86      *Software Engineer*, Standard Communications, Carson, CA
- Developed new firmware to create E.F. Johnson and Motorola-compatible trunking two-way mobile radios which were released as new products.

## SELECTED PUBLICATIONS AND ABSTRACTS

---

### *Book Chapters:*

1. Maechling P., E. Deelman, G. Mehta, R. Graves, L. Zhao, N. Gupta (2006) *SCEC CyberShake Workflows - Automating Probabilistic Seismic Hazard Analysis Calculations*, Workflows for eScience, Springer 2007, In Press

### *Peer-reviewed Journal Articles:*

1. Olsen, K. B., S. M. Day, J. B. Minster, Y. Cui, A. Chourasia, M. Faerman, R. Moore, P. Maechling, and T. Jordan (2006), *Strong shaking in Los Angeles expected from southern San Andreas earthquake*, Geophys. Res. Lett., 33, L07305, doi:10.1029/2005GL025472
2. Maechling, P., H. Chalupsky, M. Dougherty, E. Deelman, Y. Gil, S. Gullapalli, V. Gupta, C. Kesselman, J. Kim, G. Mehta, B. Mendenhall, T. Russ, G. Singh, M. Spraragen, G. Staples, K. Vahi (2005) *Simplifying Construction of Complex Workflows for Non-Expert Users of the Southern California Earthquake Center Community Modeling Environment*, *ACM SIGMOD Special issue on Scientific Workflows*, Record Vol. 34 No. 3, 24-30
3. Maechling, P., V. Gupta, N. Gupta, E. H. Field, D. Okaya, and T. H. Jordan (2005) *Grid Computing in the SCEC Community Modeling Environment*, *Seismological Research Letters*, 76, No. 5, 581-587
4. Field, E.H., N. Gupta, V. Gupta, M., P. Maechling, and T.H Jordan (2005) *Hazard Map Calculations Using GRID Computing*, *Seism. Res. Lett.*, 76, No. 5, 565-573.
5. Maechling, P., Vipin Gupta, Nitin Gupta, Edward H. Field, David Okaya, and Thomas H. Jordan (2005) *Seismic Hazard Analysis Using Distributed Computing in the SCEC Community Modeling Environment* *Seism. Res. Lett.*, 76, No. 2, 177-181
6. Field, E.H., N. Gupta, V. Gupta, M. Blanpied, P. Maechling, and T.H Jordan (2005) *Hazard Calculations for the WGCEP-2002 Forecast Using OpenSHA and Distributed Object Technologies*, *Seism. Res. Lett.*, 76, No. 2, 161-167

7. Jordan, T.H., Maechling P., and SCEC/CME Collaboration (2003) *The SCEC Community Modeling Environment – An Information Infrastructure for System-Level Earthquake Science*, Seism. Res. Lett., 74 No. 3, 44-46.
8. Kanamori, H., Maechling, P., and Hauksson, E. (1999) *Continuous Monitoring of Ground Motion Parameters*, Bull. Seism. So. Am. 89, 311-316

*Peer-reviewed Conference Papers:*

1. Deelman, E., G. Mehta, R. Graves, L. Zhao, N. Gupta, P. Maechling, T. Jordan (2006), *Managing Large-Scale Workflow Execution from Resource Provisioning to Provenance tracking: The CyberShake Example*", IEEE e-Science and Grid Computing 2006, Amsterdam, Netherlands, December 2006 – Best Paper award.
2. Faerman, M., R. Moore, B. Minister, and P. Maechling, "Managing Large Scale Data for Earthquake Simulations" (2006), Proceedings of International Workshop on High-Performance Data Management in Grid Environments, Rio de Janeiro, July 2006
3. Muench, J., H. Francoeur, D. Okaya, Y. Cui, P. Maechling, E. Deelman, G. Mehta, R. Moore, T. Jordan, *SCEC Earthworks Science Gateway: Widening SCEC Community Access to the TeraGrid*, (2006), TeraGrid 2006 Conference Paper, June 2006
4. Olsen, K.B., Jean-Bernard Minster, Reagan Moore, Steven Day, Philip Maechling, Thomas H. Jordan, Marcio Faerman, Yifeng Cui, Geoffrey Ely, Yuanfang Hu, Boris Shkoller, Carey Marcinkovich, Jacobo Bielak, David Okaya, Ralph Archuleta, Nancy Wilkins-Diehr, Steve Cutchin, Amit Chourasia, George Kremenek, Arun Jagatheesan, Leesa Brieger, Amit Majumdar, Giridhar Chukkapalli, Qiao Xin, Richard Moore, Bryan Banister, Donald Thorp, Patricia Kovatch, Larry Diegel, Tom Sherwin, Christopher Jordan, Marcus Thieboux, Julio Lopez (2004), *SCEC TeraShake - Supporting an Earthquake Storage Intensive Simulation*, Proceedings of the SC2004 High Performance Computing, Networking and Storage Conference, November 2004

*Conference Presentations:*

1. Schorlemmer D., T. H. Jordan, J. D. Zechar, M. C. Gerstenberger, S. Wiemer, P. J. Maechling (2006), *Collaboratory for the Study of Earthquake Predictability*, Eos Trans. AGU, 87(52), Fall Meet. Suppl., S12A-01
2. Deelman, E., P. Maechling, R. Graves, L. Zhao, G. Mehta, N. Gupta, C. Kesselman, S. Callaghan, Y. Cui, E. Field, V. Gupta, T. Jordan, D. Okaya, S. Gullapalli, K. Vahi, *SCEC Earthquake System Science Research Using the Power of the Grid* (2006), GlobusWorld 2006, Washington D.C., Sept 14, 2006
3. Minster, J. B., K Olsen, S Day, R Moore, T H Jordan, P Maechling, A Chourasia (2006) *The scientific value of 4D visualizations*, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract IN13E-02
4. Maechling, P., S. Callaghan, Y. Cui, E. Deelman, E. Field, R. Graves, N. Gupta, V. Gupta, T. Jordan, C. Kesselman, G. Mehta, D. Okaya, K. Vahi, L. Zhao, *SCEC CyberShake: Calculating the Probability of Strong Ground Motions on the TeraGrid* (2006), TeraGrid 2006 Conference, June 14 2006
5. Olsen, K., S. Day, J. Bernard Minster, Y. Cui, A. Chourasia, R. Moore, Y. Hu, J. Zhu, P. Maechling, T. Jordan, *SCEC TeraShake Simulations: High Resolution Simulations of Large Southern San Andreas Earthquakes Using the TeraGrid* (2006), TeraGrid 2006 Conference, June 14 2006
6. Muench, J., H. Francoeur, D. Okaya, Y. Cui, P. Maechling, E. Deelman, G. Mehta, R. Moore, T. Jordan, *SCEC Earthworks Science Gateway: Widening SCEC Community Access to the TeraGrid*, (2006), TeraGrid 2006 Conference Paper, June 2006, Presentation and Demonstration
7. Maechling, P., T. Jordan, J. Bernard Minster, K. Olsen, S. Day, R. Archuleta, J. Bielak, D. O'Hallaron, D. Okaya, E. Field, H. Francoeur, J. Muench, S. Callaghan, N. Gupta, V. Gupta, Y. Cui and the SCEC/CME Collaboration (2006), *Using the SCEC Computational Platforms for Seismic Hazard Analysis Research*, Geoinformatics 2006, USGS Reston VA, May 2006 Conference
8. Olsen, K., Day, S., Minster, J., Cui, Y., Chourasia, A., Faerman, M., Moore, R., Hu, Y., Zhu, J., Li, Y., Maechling, P., and Jordan, T. (2006), *TeraShake: Strong Shaking in Los Angeles Expected From*

- Southern San Andreas Earthquake*, Seismological Society of America Annual Meeting, San Francisco CA, April 2006, Presented in Session "Using Regional Velocity Structures to Estimate Seismic Hazard"
9. Maechling, P., V. Gupta, T. H. Jordan, E. Deelman, Y. Gil, S. Gullapalli, C. Kesselman, J. Kim, J. McGee, G. Mehta, G. Singh, M. Spraragen, Mei-Hui Su, K. Vahi, M. Dougherty B. Mendenhall, G. Staples (2005), *Planning the SCEC Pathways: Pegasus at Work on the Grid*, GlobusWorld, Boston, MA, January, 2005
  10. Minster, J. Olsen, K., Day, S., Cui, Y., Faerman, M., Moore, R., Okaya, D., Jordan, T., Archuleta, R., Hu, Y., Ely, G. (2005), *TeraShake-2: Next Steps*, Eos Trans. AGU, 86(52), Fall Meet. Suppl., Abstract IN21D-08
  11. Faerman, M., Olsen, K B., Moore, R., Day, S., Maechling, P., Jordan, T., Minster, J., Cui, Y., Ely, G., Hu, Y., Shkoller, B., Marcinkovich, C., Bielak, J., Okaya, D., Archuleta, R., Wilkins-Diehr, N., Cutchin, S., Chourasia, A., Kremenek, G., Jagatheesan, A., Brieger, L., Majundar, A., Chukkapalli, G., Xin, Q., Moore, R., Banister, B., Thorp, D., Kovatch, P., Diegel, L., Sherwin, T., Jordan, C., Thieboux, M., Lopez, J. (2004), *SCEC TeraShake - Supporting an Earthquake Storage Intensive Simulation*, StorCloud Application
  12. Gee, L. and D. Given, S. Goldstein, K. Lindquist, P. Maechling, G. Pavlis, T. Shakal, M. Withers (2001) *Planning for the Advanced National Seismic System: Network Architecture and Interconnection*, Seism. Res. Lett., 72, pp. 231.

#### Conference Abstracts:

1. Gupta, N., S Callaghan, R Graves, G Mehta, L Zhao, E Deelman, T H Jordan, C Kesselman, D Okaya, Y Cui, E Field, V Gupta, K Vahi, P J Maechling (2006), Calculating the Probability of Strong Ground Motions Using 3D Seismic Waveform Modeling - SCEC CyberShake, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract IN53B-0824
2. Francoeur, H., J Muench, D Okaya, P Maechling, E Deelman, G Mehta (2006), SCEC Earthworks: A TeraGrid Science Gateway, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract S53B-1347
3. Maechling, P.J., T H Jordan, J B Minster, R Moore, C Kesselman (2006), Using SCEC Computational Platforms to Advance Seismic Hazard Research, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract IN53B-0822
4. Callaghan, S.A., P Maechling, Visualization of Time-Varying Strain Green Tensors, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract IN31A-1320
5. Perry, S., P.J. Maechling, T.H. Jordan (2006), Southern California Earthquake Center - Virtual Display of Objects (SCEC-VDO): An Earthquake Research and Education Tool, Eos Trans. AGU, 87(52), Fall Meet. Suppl., IN31A-1314
6. Cui, Y., R. Moore, Y. Hu, A. Chourasia, J. Zhu, P. Maechling, *A Large Scale Application on the TeraGrid* (2006), TeraGrid 2006 Conference, June 2006
7. Olsen, Kim, Steven Day, J. Bernard Minster, Yifeng Cui, Amit Chourasia, Reagan Moore, Yuanfang Hu, Jing Zhu, Philip Maechling, Thomas Jordan (2006), *SCEC TeraShake Simulations: High Resolution Simulations of Large Southern San Andreas Earthquakes Using the TeraGrid*, TeraGrid06 Conference Proceedings, June 2006
8. Olsen, K., S. Day, J. B. Minster, Y. Cui, A. Chourasia, R. Moore, Y. Hu, J. Zhu, P. Maechling, T. Jordan (2006), *The SCEC TeraShake Simulations: High Resolution, Regional Scale Simulations of Large Southern San Andreas Earthquakes*, Geoinformatics 2006 Conference, Abstract Accepted
9. Francoeur, H., J. Muench, D. Okaya, Y. Cui, P. Maechling, E. Deelman, G. Mehta, T. Jordan (2006), *SCEC Earthworks: Community Access to Wave Propagation Simulations*, Geoinformatics 2006 Conference, Abstract Accepted
10. Schorlemmer, D., Zechar, J., Maechling, P., and Jordan, T. (2006), *Implementing the Collaboratory for the Study of Earthquake Predictability: Challenges and Solutions*, Seismological Society of America Annual Meeting, Abstract 037
11. Graves, R., Maechling, P., Zhao, L., Mehta, G., Gupta, N., Mehringer, J., Deelman, E., Kesselman, C., Callaghan, S., Cui, Y., Field, E., Gupta, V., Jordan, T., Okaya, D., and Vahi, K. (2006), *SCEC*

- Cybershake Platform: Incorporating Deterministic 3D Waveform Modeling into Probabilistic Seismic Hazard Curves*, Seismological Society of America Annual Meeting, Abstract Z8
12. Hauksson, E., Solanki, K., Given, D., Maechling, P., Oppenheimer, D., Neuhauser, D., and Hellweg, M. (2006), *Implementation of Real-time Testing of Earthquake Early Warning Algorithms: Using the California Integrated Seismic Network (CISN) Infrastructure as a Test Bed*, Seismological Society of America Annual Meeting, Abstract AA3
  13. Callaghan, S.; Maechling, P. J.; Cui, Y.; Faerman, M.; Field, E.; Graves, R.; Gupta, N.; Gupta, V.; Jordan, T. H.; Kesselman, C.; Mehta, G.; Okaya, D.; Vahi, K.; Zhao, L., SCEC/CME CyberShake: Probabilistic Seismic Hazard Analysis Using 3D Seismic Waveform Modeling, American Geophysical Union, Fall Meeting 2005, abstract #IN23B-1212
  14. Maechling, P., T. Jordan, M. Faerman, R. Moore, J. Muench, S. Doubleday (2005), *The Southern California Earthquake Center Community Modeling Environment (SCEC/CME) and Digital Library of Synthetic Waveforms for Southern California*, Unavco/IRIS Joint Meeting (June 2005)
  15. Maechling, P., T. Jordan, J. Minster, R. Moore, C. Kesselman (2005), *The SCEC Community Modeling Environment (SCEC/CME): A Cyberinfrastructure for Earthquake Science*, Seismological Society of America, Abstract 04-254
  16. Maechling, P. T. Jordan, J. Minster, R. Moore, C. Kesselman (2005), *SCEC Community Modeling Environment (SCEC/CME) – Vertical Integration of Cyberinfrastructure (2005)*, The National Forum for Geosciences Information Technology (FGIT) Conference, October, 2005
  17. Maechling, P. (2005), *Using Earthquake Wave Propagation Simulations in EEW System Development*, Earthquake Early Warning Workshop, California Institute of Technology, July 13-15, 2005
  18. Maechling, P., T. Jordan, and SCEC ITR Collaboration (2005), *The SCEC Community Modeling Environment (SCEC/CME): A Cyberinfrastructure for Earthquake Science*, Seismological Society of America Meeting
  19. Muench, J., Maechling, P., Kamb, L., Ahern, T., (2004), SOSA: A tool for seismogram retrieval and analysis. Eos Trans. AGU, 85(47), Fall Meet. Suppl., Abstract SF41A-0748
  20. Zhao, L., Chen, P., Jordan, T. H., Olsen, K. B., Maechling, P., Faerman, M., (2004) Cyberinfrastructure for the Unified Study of Earth Structure and Earthquake Sources in Complex Geologic Environments (2004) Eos Trans. AGU, 85(47), Fall Meet. Suppl., Abstract SF31B-02 INVITED
  21. Maechling, P. J., Jordan, T. H., Minster, B., Moore, R., Kesselman, C., SCEC ITR Collaboration (2004) The SCEC Community Modeling Environment (SCEC/CME) - An Overview of its Architecture and Current Capabilities Environments Eos Trans. AGU, 85(47), Fall Meet. Suppl., Abstract SF41A-0754
  22. Minster, J., Olsen, K. B. Moore, R., Day, S., Maechling, P., Jordan, T., Faerman, M., Cui, Y., Ely, G., Hu, Y., Shkoller, B., Marcinkovich, C., Bielak, J., Okaya, D., Archuleta, R., Wilkins-Diehr, N., Cutchin, S., Chourasia, A., Kremenek, G., Jagatheesan, A., Brieger, L., Majundar, A., Chukkapalli, G., Xin, Q., Banister, B., Thorp, D., Kovatch, P., Diegel, L., Sherwin, T., Jordan, C., Thiebaut, M., Lopez, J. (2004) The SCEC TeraShake Earthquake Simulation Eos Trans. AGU, 85(47), Fall Meet. Suppl., Abstract SF31B-05 INVITED
  23. Jordan, T., P. Maechling, and SCEC ITR Collaboration (2004), *The SCEC Community Modeling Environment (SCEC/CME): A Cyberinfrastructure for Earthquake Science*, Seismological Society of America Annual Meeting, Abstract 04-245
  24. Jordan, T.H., P. Maechling, and the SCEC/CME Collaboration (2004), *The SCEC Community Modeling Environment (SCEC/CME): A Cyberinfrastructure for Earthquake Science*, AAAS Annual Meeting, Feb. 2004
  25. Minster, J., Faerman, M., Ely, G., Maechling, P., Gupta, A., Xin, Q., Kremenek, G., Shkoller, B., Olsen, K., Day, S., Moore, R., (2003) *SCEC Community Modeling Environment (SCEC/CME) – Data and Metadata Management Issues* Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract NG11A-0177, 2003
  26. Field, E., Gupta, N., Gupta, V., Maechling, P., Jordan, T., (2003) *OpenSHA: Community Tools for Seismic Hazard Analysis* Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract S51E-0090, 2003
  27. Kesselman, C., Tangmunarunkit, H., Gil, Y. Thiebaut, M., Decker, S., Jordan, T. H., Maechling, P. (2003), *A Geoscience Grid: The SCEC Community Modeling Environment (SCEC/CME)* (2003) Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract NG11A-0180, 2003

28. Gupta, N., Gupta, V., Okaya, D., Kamb, L., Maechling, P., *Web Services Provide Access to SCEC Scientific Research Application Software* (2003) Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract ED32C-1218, 2003
29. Maechling, P. J., Jordan, T. H., Kesselman, C., Moore, R., Minster, B., SCEC ITR Collaboration, *SCEC Community Modeling Environment (SCEC/CME) – Seismic Hazard Analysis Applications and Infrastructure* (2003) Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract NG11A-0179
30. Juve, G., Francoeur, H., Gordan, L., Jhatakia, S., Sharma, N., Maechling, P., Jordan, T., (2003) *Creating a Virtual Fault Database Using Ontologies* Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract ED41B-1169
31. Gupta, V., Gupta, N., Gupta, S., Field, E., Maechling, P. (2003), *Some Programs Should Not Run On Laptops – Providing Programmatic Access to Applications Via Web Services*, Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract ED32C-1204, 2003
32. Maechling, P. J., Jordan, T. H., Kesselman, C., Moore, R., Minster, B., SCEC ITR Collaboration (2003), *SCEC Community Modeling Environment (SCEC/CME) – Seismic Hazard Analysis Applications and Infrastructure* Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract NG11A-0179, 2003
33. Maechling, P., Small, P., Hauksson, E., Jones, L., (2000), *SCSN/TriNet Data Acquisition and Data Processing Practices* Eos Trans. AGU, Vol(81), Fall Meet. Suppl., Abstract S12A-17
34. Maechling, P., Small, P., Hafner, K., Rajeshuni, S., Hutton, K., Polet, J., Hauksson, E., Given, D., Walter, A., and Jones, (2000) *SCSN/TriNet Solutions to Common System Design Issues* 2000 SSA April Meeting
35. Hauksson, E., K. Hafner, J. Hardebeck, T. Heaton, K. Hutton, H. Kanamori, P. Maechling, R. Busby, L. Zhu, and J. Polet, Jones, L. M., D. Given, D. J. Wald (1999), *Overview of the 10/16/1999 Mw7.1 Hector Mine, California Earthquake Sequence*, EOS, V80, No. 46, F126.
36. Maechling, P., Hauksson, E., Hafner, K., Given, D., Kanamori, H., (1999), *SCSN/TriNet by the Numbers*, EOS Trans. AGU, Vol(80), Fall Meet. Suppl., Abstract S12C-01
37. Hutton, K., H. Kanamori, P. Maechling and L. Jones. (1999) *Changes in the Southern California earthquake catalog magnitudes* (abstract) 1999 AGU Annual Meeting
38. Maechling, P., Small, P. (1998), *The TriNet Real-Time Seismic Processing System Architecture*, EOS Trans. AGU, Vol(80), Fall Meet. Suppl., Abstract S72B-07
39. Maechling, P., Hauksson, E., Busby, R., Batten, J., Miller, W., Polet, J., Schwartz, S., Cone, G., Koesterer, C., (1998), *Digital Data Communications Used by the Caltech/USGS Element of TriNet: Real-Time Data Collection and Distribution*, EOS Trans. AGU, Vol(79), Fall Meet. Suppl., Abstract S72B-08 INVITED
40. Hauksson, E., Clayton, R., Hafner, K., Heaton, T., Hutton, K., Kanamori H., Maechling, P., Jones, L., Given et al. (1998) *SCSN/Trinet: Modern, Multi-Functional Real-Time Seismic Network* (abstract), SSA 1998 Annual Meeting,
41. Wald, D.J., T. Heaton, H. Kanamori, P. Maechling, and V. Quitoriano (1997) *Research and Development of TriNet "Shake" Maps*, EOS Trans. AGU, Vol. 78, No. 46, Fall Meet. Suppl., Abstract U42C-06
42. Maechling, P., R. Clayton, K. Hafner, E. Hauksson, T. Heaton, K. Hutton, H. Kanamori, W. Miller, A. Acosta, G. Cone, D. Given, L. Jones, C. Koesterer, J. Mori, (1997) *Caltech/USGS Element of TriNet - Current Status*, EOS Trans. AGU, Vol(78), Fall Meet. Suppl., Abstract U42C-05
43. Pinkston III, D., P. Maechling, E. Hauksson, H. Kanamori, (1997) *AWARE: A Real-time Ground Motion Display Program*, EOS Trans. AGU, Vol(78), Fall Meet. Suppl., Abstract U51A-09
44. Maechling, P., R Clayton, K Hafner, E Hauksson, T Heaton, K., Hutton, H Kanamori, W. Miller, A Acosta, G Cone, D Given, L Jones, C Koesterer, J Mori, (1997) *Caltech/USGS Element of TriNet: Current Status*, EOS Trans. AGU, Vol(78), Fall Meet. Suppl., Abstract U42C-05
45. Jones, L.M., D Given, J Mori, E Hauksson, R Clayton, K Hafner, T Heaton, K Hutton, H. Kanamori, P Maechling, (1997), *System Specifications for SCSN/TriNet: A Modern, Digital Multi-functional Real-Time Seismographic Network*, EOS Trans. AGU, Vol(78), Fall Meet. Suppl., Abstract U42C-04

46. Maechling, P., H Kanamori, R Clayton, E Hauksson, T Heaton, (1996) *Implementing a "Constant Load" Processing Approach to Earthquake Monitoring*, EOS Trans. AGU, Vol(77), Fall Meet. Suppl., Abstract S71A-02
47. Jones, L.M, R Dollar, D Given, C Koesterer, J Mori, A Walter, L Wald, E Hauksson, P Maechling, R Clayton, T Heaton, H Kanamori, S Bryant, K Hafner, K Hutton, D Johnson, W Miller, R Taylor (1996), *Digital Upgrade of the Southern California Seismographic Network, Operated Jointly by Caltech and USGS*, EOS Trans. AGU, Vol(77), Fall Meet. Suppl., Abstract S71A-01
48. Wald, D. J., V. Quitoriano, D. Given, and P. Maechling (1996), *Rapid peak acceleration maps from the southern California Network*, Southern California Earthquake Center Annual Meeting, Palm Springs, CA.
49. D Given, J Mori, P Maechling, H Kanamori (1995), *Measurement and Use of Real Time Ground Motions From the Southern California Seismic Network*, EOS Trans. AGU, Vol (76), Fall Meet. Suppl., Abstract S32A-11
50. Maechling, P., E Hauksson, H Kanamori, R Clayton, T Heaton (1995), *Use of Emerging Technologies for the Digital, Real-time Earthquake Monitoring System in Southern California*, EOS Trans. AGU, Vol(76), Fall Meet. Suppl., Abstract S32A-06
51. Maechling, P., E Hauksson, H Kanamori, R Clayton, T Heaton (1994), *Broadband Seismology in Cyberspace: Using Frame Relay Telemetry for TERRAscope*, EOS Trans. AGU, Vol(77), Fall Meet. Suppl., Abstract U32A-04

#### Workshop Presentations:

1. *Distributed Computing Technologies – Selecting an Appropriate Approach* (2005), Joint Unavco/IRIS Meeting: Web Services Workshop
2. *SCEC Community Modeling Environment (SCEC/CME) - Earthquake Wave Propagation Simulations, Computational Infrastructure for Geodynamics* (2005) workshop at Joint Unavco/IRIS Meeting

#### Workshop Participation:

1. NSF Petascale Computing for the Geosciences Workshop (2006)
2. NSF Community Driven Improvement of Globus Software (CDIGS) Roadmap Workshop (2006), University of Chicago, March 2006
3. NSF and Library of Congress Workshop on the Storage Resource Broker Preservation Assessment (2005), San Diego Supercomputer Center, December 8-9, 2005
4. The National Forum for Geosciences Information Technology (FGIT) Conference (2005), Washington D.C.
5. Earthquake Early Warning Workshop (2005), California Institute of Technology, July 13-15 2005
6. USGS/SCEC Regional Earthquake Likelihood Models (RELM) Workshop (2005), April 26, 2005 Workshop
7. Second NSF Data Interoperability Challenge Workshop (2004) – Lamont Doherty - May, 2004
8. First NSF Data Interoperability Challenge Workshop (2003) – San Diego Supercomputer Center – December 2003
9. The GeoFramework Workshop, California Institute of Technology (2003), Oct. 2003, Los Angeles, California
10. Converting Advances in Seismology into Earthquake Science (2003), California Institute of Technology, Sept. 2003

#### SELECTED INVITED TALKS

---

1. *A Chance of Strong Motions on the TeraGrid* (2005), TeraGrid Research Exhibit, Argonne National Lab Research Exhibit, SC05 Conference, Nov. 2005
2. *Seismic Hazard Research at SDSC using the SCEC/CME Scientific Workflow System* (2005), San Diego Supercomputer Center Research Exhibit, SC05 Conference, Nov. 2005

3. *SCEC Earthquake Wave Propagation Simulations* (2005), USC Center for High Performance Computing and Communications (USC HPCC), Research Exhibit, SC05 Conference, Nov. 2005
4. *How Earthquake Simulations Drive Middleware Requirements* (2005), GRIDS Center Workshop, University of Chicago, June 2005
5. *Data products from SCEC* (2005), USArray Data Products Workshop, Oct. 2004
6. *SCEC/CME – Enabling Geoscience with Cyberinfrastructure* (2004), National Science Foundation Principal Investigator Meeting - February 17, 2004
7. *Infrastructure for Systems-Level Earthquake Research – The SCEC Community Modeling Environment* (2004), UCLA Geosciences Seminar – February 4, 2004
8. *Southern California Earthquake Center Community Modeling Environment (SCEC/CME)* (2004) - Computational Infrastructure in Geodynamics Planning Workshop - January 16<sup>th</sup>, 2004.
9. *Digital Data Communications Used by the Caltech/USGS Element of TriNet: Real-Time Data Collection and Distribution* (1998) - AGU Annual Fall Meeting, Dec. 1998
10. *Software Architecture of the Caltech/USGS Element of TriNet Earthquake Monitoring System* (1996) – Institute of Environmental Sciences, Orange County and LA Chapter, April 10, 1996
11. *Earthquake Monitoring Systems* (1995) – Instrument Society of America, Los Angeles Section, October 1995

## PROFESSIONAL ACTIVITIES

---

### *Selected Appointments & Memberships:*

- |                |  |
|----------------|--|
| 2006 – Present | Member NSF Cyberinfrastructure User Advisory Committee (CUAC)  |
| 2006 – Present | Member of the Network for Earthquake Engineering Simulation (NEES) Information Technology Strategy Committee |
| 2003 – 2005    | Member of Advanced National Seismic System (ANSS) Working Group E – Evolutionary Architecture                |
| 2003 – 2005    | Member of Advanced National Seismic System (ANSS) Working Group C - XML Standards for Earthquake Information |
| 1993 – Present | Member American Geophysical Union Member   |
| 1993 – Present | Member Seismological Society of America  |

### *Program Committees:*

- Fall 2006 American Geophysical Union Meeting, Session Chair, *Visualization of Four Dimensional Geophysical Fields*
- Geoinformatics 2006, Technical Committee Member for NSF and USGS Meeting, 10-12 May 2006

### *Proposal Reviewer:*

- NSF Office of Cyberinfrastructure Program - Proposal Review Panel
- NSF Information Technology Research Program - Proposal Review Panel
- NSF Office of Cyberinfrastructure - Ad-hoc Proposal Review
- NSF Earthscope Program – Ad-hoc Proposal Review

### *Journal Reviewer:*

- Computers and Geosciences Journal - Article Review 2006
- Computers and Geosciences Journal - Article Review 2005

### *High Performance Computing Allocations:*

1. PI on Pittsburgh Supercomputer Center 2006-2007 Development Allocation on Cray-XT3 (10K CPU-Hours)
2. PI on USC Center for High Performance Computing and Communication Center 2006-2007 Allocation (200K CPU-Hours)

3. Co-PI on NSF TeraGrid Allocation for 2006-2007 (TG-MCA06N012) “SCEC/CME CyberShake: Calculating Probabilistic Seismic Hazard Curves Using 3D Ground Motion Simulations” (436K CPU-Hours)
4. Co-PI on NSF TeraGrid Allocation for 2005-2006 (TG-BCS050002S) “Probabilistic Seismic Hazard Map Calculations Using 3D Ground Motion Simulations” (145K CPU-Hours)
5. PI on USC Center for High Performance Computing and Communication Center 2005-2006 Allocation (200K CPU-Hours)
6. PI on USC Center for High Performance Computing and Communications Center 2004-2005 Allocation (100K CPU-Hours)

#### *Vendor Certifications*

- Sun Certified Programmer for the Java 2 Platform, Standard Edition (2001)
- Sun Certified Developer for the Java 2 Platform, Standard Edition (2001)

#### AWARDS & RECOGNITION

---

1. TRW Outstanding Performance Award (1991) - Systems Engineering and Development Division
2. Hughes Corporate Superior Performance Award (1987) – Ground Systems Group, Software Engineering Division
3. National Merit Semifinalist (1975)

#### SELECTED PRESS COVERAGE

---

1. L.A.'s Future Quake (2006), National Geographic Channel, September 1, 2006
2. *Computer Pictures 'the Big One'* (2006), Los Angeles Times, May 27, 2006  
<http://www.latimes.com/news/local/la-me-quake27may27.0,5789015.story?coll=la-home-local>
3. *HPC Simulation Predicts Effect of Massive Earthquake* (2006), HPC Wire, Vol. 15, No. 20, May 2006  
<http://www.hpcwire.com/hpc/658674.html>
4. *Simulating Earthquakes for Science and Society* (2006), HPC Wire, January 2006  
<http://news.taborcommunications.com/msgget.jsp?mid=547185&xsl=story.xsl>
5. *SDSC Strategic Applications Collaborations Program Helps SCEC Conduct Terascale Earthquake Simulations* (2006), SDSC Threads Web Report,  
[http://www.sdsc.edu/user\\_services/newsletter/common/newsletter.php?issue=2005-11&corner=sac](http://www.sdsc.edu/user_services/newsletter/common/newsletter.php?issue=2005-11&corner=sac)
6. TeraShake Image: Science Grid This Week: *Image of the Week*: May 11, 2005  
[http://www.interactions.org/sgtw/learnmore/iow\\_20050511.html](http://www.interactions.org/sgtw/learnmore/iow_20050511.html)
7. TeraShake Image: *Portrait of Destruction*, Science News, May 21 2005, Vol. 167, Pg 325
8. *TeraShake: Simulating a Big Shake in Southern California Basins* (2005), TeraGrid News  
<http://www.teragrid.org/news/news05/terashake.html>
9. *TeraShake: Discoveries and Breakthroughs inside Science* (2005), American Institute of Physics -  
<http://www.aip.org/dbis/stories/2005/14419.html>
10. *TeraShake: Simulating the "Big One" on the San Andreas Fault* (2004), Envision, Special Issue for SC2004, Cover Story, Vol. 20, No. 1,  
<http://www.npaci.edu/envision/v20.1/Envision-2004-TeraShake.pdf>
11. *TeraShake: SDSC Simulates The 'Big One'* (2004), HPC Wire, Vol. 13, No. 50, December, 2004  
<http://www.tgc.com/hpcwire/hpcwireWWW/04/1217/108981.html>
12. *Test Planned on Quake Monitoring System That Speeds Location Data* (1995), Los Angeles Times, Metro News, January 12, 1995,
13. *The Talk of the Town – The 6.6 at 4:31* (1994), The New Yorker, January 31, 1994

#### VOLUNTEER WORK

---

1. Technology Consultant for USC Student Film Project (2005): *Ride the Train* – Written and Directed by Jeremie Ledesma
2. FaultLines - Measurement, Distance, and Place: A Montreal and Los Angeles Link (1995), A Collaborative Installation by Ingrid Bachman and Barbara Layne, Art Exhibit at Side Street Projects, Santa Monica and Galerie La Centrale, Montreal, Quebec
3. Recording for the Blind, Los Angeles CA (1992-1996): Recording engineering and qualified reader for science, computer science, and electrical engineering textbooks
4. Daniel Freeman Hospital, Los Angeles, CA (1991-2): Data modeling for patient information system database

## HOBBIES

---

*Sports:* Cycling, basketball, tennis, downhill skiing, hiking, and running

*Arts:* Books and Movies

## PERSONAL

---

Nickname: Phil  
Gender: Male  
Marital Status: Married

Birth Year: 1958  
Birth Place: Los Angeles, California, U.S.A  
Family: Three Children

## REFERENCES

---

Available upon Request