

J. Walter Larson

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RESEARCH INTERESTS Climate and Earth System Science; Parallel computing; high-performance computing applied to climate modeling, weather forecasting, and multiphysics/multiscale simulation; software engineering; computational statistics; complex and dynamical systems.

EDUCATION **College of William and Mary, Williamsburg, Virginia, U.S.A.**
Ph.D. Theoretical Plasma Physics, 1992
M.Sc. Physics, 1986
Drake University, Des Moines, Iowa, U.S.A.
B.A. Physics and Mathematics, 1984

CITIZENSHIP United States of America
Commonwealth of Australia

EMPLOYMENT HISTORY **Research and Teaching Assistantships**, Physics Department, College of William and Mary, 1984–1992
Dynamical Systems Consultant to Allied Signal, May–October 1992
Postdoctoral Fellow, School of Earth Sciences, Macquarie University, October 1992–June 1994
Postdoctoral Fellow, Centre for Resource and Environmental Studies, The Australian National University, June 1994–May 1996
Consultant, Department of Earth and Atmospheric Sciences, Purdue University, June–October 1996
Research Associate, Department of Meteorology, Earth System Science Interdisciplinary Center (ESSIC), University of Maryland and NASA Data Assimilation Office (DAO), NASA Goddard Flight Center, October 1996–December 1999
Assistant Computational Scientist, Mathematics and Computer Science Division, Argonne National Laboratory, December 1999–December 2004
Senior Fellow, Computation Institute, University of Chicago, October, 2003–present
Software Engineer (equivalent to Level C Academic at an Australian University), Mathematics and Computer Science Division, Argonne National Laboratory, January 2005–April 2007
Academic Consultant, ANU Supercomputer Facility, Australian National University, February 2006–February 2008
Visiting Fellow, Department of Plasma Theory and Modelling Group, Plasma Research Laboratory, Research School of Physics and Engineering, The Australian National University, October, 2006–present
Computational Scientist, Mathematics and Computer Science Division, Argonne National Laboratory, May, 2007–present
Adjunct Lecturer (Level C), School of Computer Science, The Australian National University, March, 2008–present

AWARDS AND
HONORS

1. **Best Paper Award**, International Parallel and Distributed Processing Symposium, 2005
2. **Best Unsolicited Presentation**, Complex Systems in the Earth Sciences Track, 8th Asia-Pacific Complex Systems Conference (Complex07), 2007

GRANT,
CONTRACT, AND
AWARD FUNDING

- 1 NSF NATO Summer School Travel Grant Award, 1992 \$1,000
- 2 Consultancy in phase-space methods and timeseries analysis (with E. R. Tracy), Allied Signal, May–October 1992, \$10,000
- 3 “The Penn State/NCAR MM5 on the AP1000,” Contract with Fujitsu Corporation Ltd Japan, J. W. Larson and J. A. Taylor, 1995 \$23,000
- 4 “Delivering High-Resolution Regional Climate Data and Analysis Tools via the Web,” ANL Cooperative Research and Development Agreement (CRADA) with Research Systems, Inc., John Taylor (PI), Jay Larson, and Ian Foster: \$25,000 (FY 2000)
- 5 “Development of a Modular, Performance-Portable Climate System Model,” United States Department of Energy BER project, Ian Foster (PI), DOE and NCAR co-I’s: Chris Ding, John Drake, Phil Jones, Jay Larson, Doug Rotman, Thomas Bettge, Maurice Blackmon, Byron Boville, Cecelia Deluca, David Williamson. Argonne funding: \$240,000 (FY2000) and \$480,000 (FY2001)
- 6 “Climate Applications of the Common Component Architecture and the Terascale Simulation Tools and Technologies,” DOE/MICS Scientific Discovery through Advanced Computing program, MICS matching funds (funded FY2002-FY2006). Total funding: \$550,000
- 7 “Collaborative Design and Development of the Community Climate System Model for Terascale Computers,” DOE/BER Scientific Discovery through Advanced Computing (SciDAC) / Climate Change Prediction Program (CCPP) (funded FY2002-FY2006), R. Malone and J. Drake (PIs), co-I’s: C. Ding, P. Duffy, D. Erickson, S. Ghan, R. Jacob, P. Jones, J. Larson (Argonne PI 2003-6), A. Mirin, D. Rotman, J. Taylor, P. Worley, T. Bettge, M. Blackmon, T. Craig, C. Deluca, S-J. Lin, W. Washington, and D. Williamson. ANL funding 2000-2005 \$3.5M
- 8 “A High-Performance Software Framework and Interoperable Applications for the Rapid Advancement of Earth System Science: Part I: Core Earth System Modeling Framework Development,” NASA Earth System Technology Office/Computational Technology (ESTO/CT) program (funded 2002-2004), Timothy Killeen (PI), co-I’s: Jeffery Anderson, Byron A. Boville, Cecelia Deluca, Arlindo da Silva, Roberta Johnson, Philip W. Jones, J. Walter Larson, Stephen J. Lord, John Marshall, Barry F. Smith, Quentin F. Stout, and Max J. Suarez. Total ANL funding 2002–2004: \$338,700
- 9 “A Data Domain to Model Domain Conversion Package (DMCP) for Sparse Climate Related Process Measurements,” DOE-BER, SciDAC / Climate Change Prediction Program (funded FY2007-FY2011), R. Kotamarthi (PI), M. Stein (co-PI), J. W. Larson (co-PI), R. L. Jacob, and R. Coulter, Total ANL Funding 2007–2011: \$1.5M
- 10 “Framework Application for Core-Edge Transport Simulations (FACETS),” DOE-FES, SciDAC Program (funded FY2007-FY2011), J. Cary (PI), J. W. Larson (co-PI), D. Estep, D. Keyes, J. Candy, R. Bramley, R. Cohen, P. H. Worley, A. D. Malony, D. M. McCune, S. Krasheninnikov, Total ANL Funding 2007–2011: \$1.125M
- 11 “Performance of the Nested Regional Climate Model over the U.S. Midwest,” Argonne National Laboratory LDRD Proposal, FY11, J. W. Larson (PI), total funding \$140k

COMMUNITY
SERVICE

Member, Fusion Simulation Program Workshop Panel and Report co-author, United States Department of Energy, May, 2007

Secretary, ACT Chapter ANZIAM, January 2007-December 2007

Organizer of Bird-of-Feather Session “The Parallel Coupling Problem: An Emerging Challenge in Scientific Simulation,” Supercomputing, 2005

Session Organizer, SIAM Parallel Processing 2004 and 2006

U.S. Department of Energy Common Component Architecture (CCA) Climate Applications Liaison

Organizer of Bird-of-Feather Session “The High-Performance Computing and Climate/Weather/Ocean Communities: The State of the Union,” Supercomputing, 2003

Proposal Referee, U.S. Department of Energy Climate Change Prediction Program, 2001 and 2004

Member, NASA Earth System Modeling Framework (ESMF) Specification Team

Member, DOE Climate Change Prediction Program Science Team Steering Group, 2004-2006

Member, Community Climate System Model (CCSM) Software Engineering Working Group, 2000-2006

Section Editor, *ANZIAM Journal*, 2007-2008

Proposal Referee, National Environmental Research Council (UK), 2008

Judge, US Department of Energy Science and Energy Research Challenge Competition, 2009

Technical Committee, IEEE Workshop on Parallel and Distributed Scientific and Engineering Computing, IPDPS 2011 and 2012

Co-convenor, Workshop on Data Mining in Earth System Science, ICCS 2011 and 2012

SUPERVISION OF
STUDENTS:

Undergraduate Students:

Kevin Reitz, Boreal Summer, 2000

Everest Ong, Boreal Summer-December, 2000

Corey McCaffrey, Boreal Summer 2001

Mark Zavislak, Boreal Summer, 2001, Summer 2002

Robert Altmiller, Boreal Summer 2004

Romesh Abeysuriya, Austral Summer 2009-10

Graduate Students:

Corinne Tokarz, Boreal Summer 2001, Co-op 2001-2002 Academic Year

Ian Wood, Master’s Student, ANU, 2008 Academic Year

TEACHING
EXPERIENCE

Approximately five years’ experience teaching physics and astronomy at the university level (mostly laboratory courses, but also graded introductory and upper-level undergraduate courses)

J. Fedchak and W. Cummings, and J. W. Larson, “Physics and the Creative Process,” Forum with the Psychology of Creativity course at Columbia College, Chicago, 12 December 1995.

Teacher, Scuola Estiva di Calcolo Avanzato, Castel Gandolfo, Italy, 5-9 September 2005. I taught a graduate-level short course entitled “The Parallel Coupling Problem in Multiphysics Simulation.”

Guest Lectures on large-scale supercomputing systems, grid computing, and climate appli-

cations, CS4300 class on parallel systems, Department of Computer Science, The Australian National University, 2007.

Guest Lectures on large-scale supercomputing systems, grid computing, cloud computing, climate applications, and MapReduce, CS4300 class on parallel systems, Department of Computer Science, The Australian National University, First Semester 2009. Was also second examiner for this course.

Guest Lecturer on OpenMP for CS8320, a graduate-level multicore computing class, second semester 2009.

Guest Lectures on large-scale supercomputing and climate modeling, CS4300, ANU
Guest Lecture on the first Pythonic coupled climate model, CS1730, ANU

PROFESSIONAL
SOCIETY
MEMBERSHIPS

American Geophysical Union
American Meteorological Society
Association for Computing Machinery
Society for Industrial and Applied Mathematics
Australian Meteorological And Oceanographic Society
Australian Mathematical Society (AustMS)
Australian and New Zealand Industrial and Applied Mathematics Division, AustMS

BOOKS
PUBLISHED OR
EDITED, THESES

1. J. W. Larson, "Painlevé Singularity Analysis Applied to Charged Particle Dynamics During Reconnection," Ph.D. Thesis, College of William and Mary, 1992.
2. W. Read, A. J. Roberts, and J. W. Larson, *Proceedings Computational Techniques and Applications Conference (CTAC06)*, published as electronic supplement to Volume 48 of *ANZIAM Journal* (2006-7).

JOURNAL
ARTICLES AND
BOOK CHAPTERS

1. E. R. Tracy, J. W. Larson, A. R. Osborne, and L. Bergamasco, "On the Nonlinear Schrödinger Limit of the Korteweg-de Vries Equation," *Physica*, **32D**, 83 (1988).
2. J. W. Larson and E. R. Tracy, "Spectral Averaging of Small-Amplitude Sine-Gordon Wavetrains," *Physical Review* **38A**, 4419 (1988).
3. E. R. Tracy, J. W. Larson, A. R. Osborne, and L. Bergamasco, "On the Relationship between the Spectral Theories for the Periodic Korteweg-de Vries and Nonlinear Schrödinger Equations," in *Nonlinear Topics in Ocean Physics*, A. R. Osborne and L. Bergamasco, eds., Elsevier, Amsterdam (1989).
4. J. W. Larson and E. R. Tracy, "Integrability Properties of Charged Particle Dynamics in Reconnection Regions," *Physics Letters* **182A**, 249 (1994).
5. S. Marshall, R. J. Oglesby, J. Larson, and B. Saltzman, "A Comparison of GCM Sensitivity to Changes in CO₂ and Solar Luminosity," *Geophysical Research Letters*, **21**, 2487–90 (1994).
6. D. E. Hyman, D. R. Whitehouse, J. A. Taylor, J. W. Larson, and J. A. Lindesay, "The ANU Translator: Facilitating Computer Visualization and Data Analysis of Climate Model Outputs," *Environmental Software*, **11**, 65–72 (1996).
7. S. Marshall, J. A. Taylor, S. D. Prager, R. J. Oglesby, J. W. Larson, and D. J. Erickson III, "Climatic Effects of Biomass Burning," *Environmental Software*, **11**, 53–58 (1996).
8. J. Syktus, J. Chappell, R. Oglesby, J. Larson, S. Marshall, and B. Saltzman, "Signal-Noise Patterns from Two General Circulation Models with CO₂ Forcing: Implications for Recognition of Enhanced Greenhouse", *Climate Dynamics*, **13(5)**:293–302 (1997).

9. D. P. Dee, L. Rukhovets, R. Todling, A. M. da Silva, and J. W. Larson, "An Adaptive Buddy Check for Observational Quality Control," *Q. J. R. Met. Soc.*, **127**, 2451–72 (2001).
10. C. J. Anderson, R. W. Arritt, E. S. Takle, Z. Pan, W. J. Gutowski, Jr. , F. Otieno, R. da Silva, D. Caya, J. H. Christensen, D. Luethi, M. A. Gaertner, C. Gallarado, F. Giorgi, S-Y. Hong, C. Jones, H-M. H. Juang, J. J. Katzfey, W. M. Lapenta, R. Laprise, J. W. Larson, G. Liston, J. L. McRgor, R. A. Pielke Sr., J. O. Roads, and J. A. Taylor, "Hydrological Processes in Regional Climate Simulations of the Central United States Flood of June–July 1993," *Journal of Hydrometeorology*, **4**, 584–98 (2003).
11. P. M. Lyster, J. Guo, T. Clune, and J. W. Larson, "The Computational Complexity, Parallel Scalability, and Performance of Atmospheric Data Assimilation Algorithms," *J. Atmos. Oc. Tech.* **21**, 1689-1700 (2004).
12. J. W. Larson, R. L. Jacob, and E. T. Ong, "The Model Coupling Toolkit: A new Fortran90 toolkit for building multi-physics parallel coupled models," *Int'l J. High-Perf. Comp. Appl.* **19** (3) 277-292 (2005).
13. R. L. Jacob, J. W. Larson, and E. T. Ong, "MxN communication and parallel interpolation in CCSM3 Using the Model Coupling Toolkit, *Int'l J. High-Perf. Comp. Appl.* **19** (3) 293-308 (2005).
14. A. Craig, B. Kauffman, R. Jacob, T. Bettge, J. Larson, E. Ong, C. Ding, and Y. He, "CPL6: The New Extensible, High-Performance Parallel Coupler for the Community Climate System Model," *Int'l J. High-Perf. Comp. Appl.* **19** (3) 309-327 (2005).
15. L. C. McInnes, B. A. Allan, R. Armstrong, S. J. Benson, D. E. Bernholdt, T. L. Dahlgren, L. Freitag Diachin, M. Krishnan, J. A. Kohl, J. Walter Larson, S. Lefantzi, J. Nieplocha, B. Norris, S. G. Parker, J. Ray, and S. Zhou, "Parallel PDE-Based Simulations Using the Common Component Architecture, in *Numerical Solution of Partial Differential Equations on Parallel Computers*, A.. M. Bruaset and A. Tveito, eds, Springer-Verlag Lecture Notes in Computational Science and Engineering, Volume 51, pp 327-381 (2006).
16. D. E. Bernholdt, B. A. Allan, R. Armstrong, F. Bertrand, K. Chiu, T. L. Dahlgren, K. Damevski, W. R. Elwasif, T. G. W. Epperly, M. Govindaraju, D. S. Katz, J. A. Kohl, M. Krishnan, G. Kumfert, J. W. Larson, S. Lefantzi, M. J. Lewis, A. D. Mahoney, L. C. McInnes, J. Nieplocha, B. Norris, S. G. Parker, J. Ray, S. Shende, T. L. Windus, and S. Zhou, "A Component Architecture for High-Performance Computing," *Int'l J. High-Perf. Comp. Appl.* **20** (2) 163-202 (2006).
17. F. Bertrand, R. Bramley, K. B. Damevski, J. A. Kohl, D. E. Bernholdt, J. W. Larson, and A. Sussman, "Data Redistribution and Remote Method Invocation in Parallel Component Architectures," *J. Par. Dist. Comp.*, **66**(7), 931-946 (2006).
18. J. R. Cary, J. Candy, R. H. Cohen, S. Krashenninikov, D. C. McCune, D. J. Estep, J. Larson, A. D. Malony, P. H. Worley, J. A. Carlsson, A. H. Hakim, P. Hamill, S. Kruger, S. Muzsala, A. Pletzer, S. Shasharina, D. Wade-Stein, N. Wang, L. McInnes, T. Wildey, T. Casper, L. Diachin, T. Epperly, T. D. Rognlien, M. R. Fahey, J. A. Kuehn, A. Morris, S. Shende, E. Feibush, G. W. Hammett, K. Indireskumar, C. Ludescher, L. Randerson, D. Stotler, A. Yu Pigarov, P. Bonoli, C. S. Chang, D. A. D'Ippolito, P. Colella, D. E. Keyes, R. Bramley and J. R. Myra, "Introducing FACETS, the Framework Application for Core-Edge Transport Simulations," *Journal of Physics Conference Series* **78**, 0120086 (2007).
19. S. Parker, R. Armstrong, D. Bernholdt, T. Dahlgren, T. Epperly, J. Kenny, M. Krishnan, G. Kumfert, J. Larson, L.C. McInnes, J. Nieplocha, J. Ray, and S. Shasharina, "Enabling Advanced Scientific Computing Software," *CTWatch Quarterly*, **3**(4) (2007).

20. E. T. Ong, J. W. Larson, B. Norris, R. L. Jacob, M. Tobis, and M. Steder, "A Multilingual Programming Model for Coupled Systems," *International Journal of Multiscale Computational Engineering* **6**(1), 39–51 (2008).
21. J. R. Cary, J. Candy, R. H. Cohen, S. Krasheninnikov, D. C. McCune, D. J. Estep, J. Larson, A. D. Malony, P. H. Worley, J. A. Carlsson, A. H. Hakim, P. Hamill, S. Kruger, M. Miah, S. Muzsala, A. Pletzer, S. Shasharina, D. Wade-Stein, N. Wang, L. McInnes, T. Wildey, T. Casper, L. Diachin, T. Epperly, T. D. Rognlien, M. R. Fahey, J. Cobb, A. Morris, S. Shende, G. W. Hammett, K. Indireskumar, D. Stotler, A. Yu Pigarov, "First results from core-edge parallel composition in the FACETS project," *J. Physics: Conf. Series*, **125**, 012040 (2008).
22. J. W. Larson, "Ten Organising Principles for Coupling in Multiphysics and Multiscale Models," *ANZIAM Journal*, **48**, C1090–C1111 (2009).
23. M. Tobis, M. Steder, R. L. Jacob, R. T. Pierrehumbert, E. T. Ong, and J. W. Larson, "PyCCSM: Prototyping a Python-based Community Climate System Model," *ANZIAM Journal* **48**, C1112–C1130 (2010).
24. J. W. Larson, "Can We Define Climate Using Information Theory?," *IOP Conf Ser: Earth and Environmental Science*, 012028 (2010).
25. M. J. Hole, H. R. Wilson, R. Abeysuriya, and J. W. Larson, "Ideal MHD stability of a spherical tokamak power plant and a component test facility," accepted, *Plasma Physics and Controlled Fusion* (2010).
26. R. L. Jacob and J. W. Larson, "The Model Coupling Toolkit," book chapter in *Earth System Modelling—Volume 3: Software, Tools, and Environments*, S. Valcke, R. Redler, and R. Budich (Eds.) (2012).

REFEREED
CONFERENCE
PROCEEDINGS

1. E. R. Tracy, J. W. Larson, A. R. Osborne, and L. Bergamasco, "On the Nonlinear Schrödinger Theory as an Averaging Theory," in *Proceedings of the Fourth International Conference on Nonlinear Evolution Equations and Dynamical Systems*, J. Léon, ed., 593–602, World Scientific (1988).
2. G. Michael and J. W. Larson, "CCM1 on The AP1000," in *Proceedings of the Third Parallel Computing Workshop*, Kawasaki, Japan, 1994.
3. J. W. Larson, J. A. Taylor, and R. J. Oglesby, (1994) "Atmospheric modeling on the AP1000," in *Proceedings of the Third Parallel Computing Workshop*, Kawasaki, Japan, P2-T-1,5.
4. A. J. Jakeman, R. J. Oglesby, D. P. Hansen, D. A. Post, S. Schreider, J. A. Taylor, J. W. Larson, and G. M. Hornberger, "Modeling Land Surface-Atmosphere Interactions and Water Resource Impacts: Alternative Approaches," in *Proceedings of Second International Study Conference on GEWEX in Asia and GAME*, National Research Council of Thailand, Bangkok, Thailand, March 6–10, 1995.
5. S. Marshall, J. A. Taylor, S. D. Prager, R. J. Oglesby, J. W. Larson, and D. J. Erickson III, "Climatic Effects of Biomass Burning," in *Proceedings of Global Analysis, Interpretation, and Modeling: The First Conference*, IGBP, Garmisch-Partenkirchen, Germany, 25–29 September 1995.
6. R. J. Oglesby, A. J. Jakeman, D. A. Post, S. Schreider, Z. Fan, D. P. Hansen, J. A. Taylor, and J. W. Larson, "Coupling a Regional Precipitation Runoff Model to Global and Regional Climate Models," in *Proceedings of Global Analysis, Interpretation, and Modeling: the First Conference*, IGBP, Garmisch-Partenkirchen, Germany, 25–29 September 1995.
7. D. Hansen, J. W. Larson, and J. A. Taylor "The NCAR CCM2 (Community Climate Model 2) on the ANU Fujitsu VP2200," in *Proceedings of the International Congress on Modeling and Simulation*, Newcastle, 27–30 November, Vol. II, 269–274 (1995).

8. D. E. Hyman, D. R. Whitehouse, J. A. Taylor, J. W. Larson and J. A. Lindesay “The ANU Translator: Facilitating Computer Visualization and Data Analysis of Climate Model Outputs,” in *Proceedings of the International Congress on Modeling and Simulation*, Newcastle, 27–30 November, Vol. II, 221–226 (1995).
9. S. Marshall, J. A. Taylor, S. D. Prager, R. J. Oglesby, J. W. Larson, and D. J. Erickson III, “Climatic Effects of Biomass Burning,” in *Proceedings of the International Congress on Modeling and Simulation*, Newcastle, 27–30 November, Vol. II, 56–60 (1995).
10. J. W. Larson and R. J. Oglesby, “Various Approaches to the Problem of Model-Reality Comparison,” in *Proceedings of the International Congress on Modeling and Simulation*, Newcastle, 27–30 November, Vol. II, 274–283 (1995).
11. J. W. Larson, J. A. Taylor, J. L. Kesteven, and M. F. Hutchinson, “Regional-Scale Climate Studies of Australia Using RegCM2,” in *Proceedings of the International Congress on Modeling and Simulation*, Newcastle, 27–30 November, Vol. II, 15–20 (1995).
12. J. W. Larson, P. M. Lyster, W. Sawyer, C. H. Q. Ding, J. Guo, A. M. da Silva, and L. L. Takacs, “Progress in the Design and Optimization of the Parallel Goddard Data Assimilation System (DAS),” in *Proceedings of High Performance Computing 1997: Grand Challenges in Computer Simulation*, A. Tentner (Ed.), p. 52., Society for Computer Simulation International (1997).
13. P. M. Lyster, J. W. Larson, W. Sawyer, C. H. Q. Ding, J. Guo, A. M. da Silva, and L. L. Takacs, “Parallel Computing at the NASA Data Assimilation Office (DAO),” in *Proceedings of Supercomputing97*, San Jose, November (1997).
14. W. Sawyer, R. Lucchesi, P. M. Lyster, L. L. Takacs, A. Molod, J. Larson, S. Nebuda, and C. Pabon-Ortiz, “Parallelization Aspects of an Atmospheric General Circulation Model for Data Assimilation,” in *Proceedings of the 1998 Advanced Simulation Technologies Conference, High Performance Computing Symposium*, ed. A. Tentner, Society for Computer Simulation International (1998).
15. P. M. Lyster, J. W. Larson, J. Guo, W. Sawyer, A. da Silva, and I. Stajner, “Progress in the Parallel Implementation of the Physical-space Statistical Analysis System (PSAS),” in *Making Its Mark: Proceedings of the Seventh ECMWF Workshop on the Use of Parallel Processors in Meteorology*, eds. G.-R. Hoffmann and N. Kreitz, 382–393, World Scientific (1998).
16. W. Sawyer, R. Lucchesi, P. M. Lyster, L. L. Takacs, A. Molod, J. Larson, S. Nebuda, and C. Pabon-Ortiz, “Parallelization of DAO Atmospheric General Circulation Model,” in *Proceedings of the Fourth International Workshop on Applied Parallel Computing (PARA98)*, B. Kagstrom, J. Dongarra, E. Elmroth, and J. Wasniewski (Eds.), Lecture Notes in Computer Science Volume 1541, Springer, 510–514 (1998).
17. C. H. Q. Ding, P. M. Lyster, J. W. Larson, J. Guo, and A. da Silva, “Atmospheric Data Assimilation on Distributed-Memory Parallel Computers,” in *International Conference and Exhibition on High-Performance Computing and Networking (HPCN Europe '98)*, P. M. A. Sloot, M. Bubak, and L. O. Hertzberger (Eds.), Lecture Notes in Computer Science, Volume 1401, Springer, 115–124 (1998).
18. J. A. Taylor and J. W. Larson, “Resolution Dependence in Modeling Extreme Weather Events,” in *Proceedings of the International Conference on Computational Science (ICCS) 2001*, V. N. Alexandrov, J. J. Dongarra, B. A. Juliano, R. S. Renner, and C. J. K. Tan, eds., Lecture Notes in Computer Science Volume 2073, Springer, 204–211 (2001).
19. J. W. Larson, R. L. Jacob, I. T. Foster, and J. Guo, “The Model Coupling Toolkit,” in *Proceedings of the International Conference on Computational Science (ICCS) 2001*,

- V. N. Alexandrov, J. J. Dongarra, B. A. Juliano, R. S. Renner, and C. J. K. Tan, eds., *Lecture Notes in Computer Science Volume 2073*, Springer, 185–194 (2001).
20. E. T. Ong, J. W. Larson, and R. L. Jacob “A Real Application of the Model Coupling Toolkit,” in *Proceedings of the 2002 International Conference on Computational Science*, C. J. K. Tan, J. J. Dongarra, A. G. Hoekstra, and P. M. A. Sloot, eds., *Lecture Notes in Computer Science, Volume 2330*, Springer, 748–757.
 21. J. W. Larson, E. T. Ong, B. Norris, D. E. Bernholdt, J. B. Drake, W. R. El Wasif, M. W. Ham, C. E. Rasmussen, G. Kumfert, D. S. Katz, S. Zhou, C. Deluca, and N. S. Collins, “Components, the Common Component Architecture and the Climate / Weather / Ocean Community,” in *Proceedings of the Twentieth International Conference on Interactive Information Processing Systems for Meteorology, Oceanography, and Hydrology, 84th Annual Meeting of the American Meteorological Society* (2004).
 22. R. W. Arritt, C. J. Anderson, E. S. Takle, Z. Pan, W. J. Gutowski, Jr., F. O. Otieno, R. da Silva, D. Caya, J. H. Christensen, D. Luethi, M. A. Gaertner, C. Gallardo, S. -Y. Hong, C. Jones, H. -M. H. Juang, J. J. Katzfey, W. M. Lapenta, R. Laprise, J. W. Larson, G. E. Liston, J. L. McGregor, R. A. Pielke, Sr., J. O. Roads and J. A. Taylor, “Ensemble methods for seasonal limited area forecasts,” in *Proceedings of the Twentieth Conference on Weather Analysis and Forecasting and Sixteenth Conference on Numerical Weather Prediction, 84th Annual Meeting of the American Meteorological Society* (2004).
 23. P. M. Dickens, J. W. Larson, and D. M. Nichol, “Diagnostics for Causes of Packet Loss in a High Performance Data Transfer System,” *Proceedings of the 18th IEEE International Parallel and Distributed Processing Symposium (IPDPS)* (2004).
 24. P. M. Dickens and J. W. Larson, “Classifiers for Causes of Data Loss Using Packet-Loss Signatures,” *CCGrid2004-the Fourth IEEE/ACM International Symposium on Cluster Computing and the Grid*.
 25. R. W. Arritt, C. J. Anderson, W. J. Gutowski, E. S. Takle, D. Caya, C. G. Jones, J. J. Katzfey, J. W. Larson, R. Laprise, J. L. McGregor, J. Roads, and J. Taylor, “Influences on predictability in multi-year regional climate simulations for the continental United States,” in *Proceedings of the 16th Conference on Climate Variability and Change, 85th Annual Meeting of the American Meteorological Society* (2005).
 26. F. Bertrand, R. Bramley, K. B. Damevski, J. A. Kohl, D. E. Bernholdt, J. W. Larson, and A. Sussman, “Data Redistribution and Remote Method Invocation in Parallel Component Architectures,” in *Proceedings of the 19th IEEE International Parallel and Distributed Processing Symposium (IPDPS)* (2005). **Winner, Best Paper Award**
 27. C. Hill, C. DeLuca, V. Balaji, M. Suarez, A. da Silva, W. Sawyer, C. Cruz, A. Trayanov, L. Zaslavsky, R. Hallberg, B. Boville, A. Craig, N. Collins, E. Kluzek, J. Michalakes, D. Neckels, E. Schwab, S. Smithline, J. Wolfe, M. Iredell, W. Yang, R. Jacob, and J. Larson, “Implementing Applications with the Earth System Modeling Framework,” in *PARA 2004*, J. Dongarra, K. Madsen, and J. Wasiniewski (Eds.), *Lecture Notes in Computer Science Volume 3732*, 563–572 (2006).
 28. E. T. Ong, J. W. Larson, B. Norris, R. L. Jacob, M. Tobis, and M. Steder, “Multilingual Interfaces for Parallel Coupling in Multiphysics and Multiscale Systems,” in *Proceedings of the Seventh International Conference on Computational Science (ICCS 2007)*, Y. Shi, G. D. van Albada, J. Dongarra, and P. M. A. Sloot (eds) *Lecture Notes in Computer Science Volume 4487*, Springer, 931–938 (2007).
 29. J. W. Larson and B. Norris, “Component Specification for Parallel Coupling Infrastructure,” in *Proceedings of the International Conference on Computational Science and its Applications (ICCSA 2007)*, O. Gervasi and M. L. Gavrilova (eds) *Lecture Notes in Computer Science Volume 4707*, Springer, 55–68 (2007).

30. J. W. Larson, A. P. Craig, J. B. Drake, D. J. Erickson III, M. Branstetter, and M. W. Ham, "A Massively Parallel Dynamical Core for Continental- to Global-Scale River Transport, accepted, *Proceedings of the International Congress on Modelling and Simulation (ModSim 2007)*, L. Oxley and D. Kulasiri (eds.), 532–538 (2007).
31. J. W. Larson, E. T. Ong, and C. Tokarz, "The Spheroidal Data Analysis Library and Toolkit: Tools for Climate Model Output Analysis," *Proceedings of the International Congress on Modelling and Simulation (ModSim 2007)*, L. Oxley and D. Kulasiri (eds.), 2974–2980 (2007).
32. I. Wood, J. W. Larson, and H. Gardner, "A Vision and Agenda for Theory Provenance in Scientific Publishing," in *Proceedings Database Systems for Advanced Applications (DASFAA 2009)*, L. Chen, C. Liu, Q. Liu, and K. Deng (Eds.), Lecture Notes in Computer Science Volume 5667, Springer, 112–121 (2009).
33. J. W. Larson, "Graphical Notation for Diagramming Coupled Systems," in *Proceedings Ninth International Conference on Computational Science (ICCS 2009)*, G. Allen, J. Nabrzyski, E. Seidel, G. D. van Albada, J. Dongarra, and P.M.A. Sloot (Eds), Lecture Notes in Computer Science Volume 5544, pp 745–754, Springer, 2009.
34. J. W. Larson, "Proposed Checklist for Building Complex Coupled Models," in *Proceedings, 18th World IMACS Congress (ModSim 2009)*, R. S. Anderssen, R. D. Braddock, and L. T. H. Newham (Eds.), 831–837 (2009).
35. J. W. Larson, "Information-Theoretic Strategies for Quantifying Variability and Model-Reality Comparison in the Climate System," in *Proceedings, 18th World IMACS Congress (ModSim 2009)*, R. S. Anderssen, R. D. Braddock, and L. T. H. Newham (Eds.), 2640–2646 (2009).
36. J. W. Larson, P. R. Briggs, and M. Tobis, "Block Entropy Analysis of Climate Data," *Proceedings of the Eleventh International Conference on Computational Science (ICCS 2011)*, *Procedia* **4**, 1592–1601 (2011).
37. J. W. Larson, "Visualizing Process Composition and Load Balance in Coupled Models," *Proceedings of the Eleventh International Conference on Computational Science (ICCS 2011)*, *Procedia* **4**, 831–840 (2011).
38. D.-H. Kim, J. W. Larson, and K. Chiu, "Toward Malleable Model Coupling," *Proceedings of the Eleventh International Conference on Computational Science (ICCS 2011)*, *Procedia* **4**, 312–321 (2011).
39. F. M. Hoffman, J. W. Larson, R. T. Mills, B-J. J. Brooks, A. R. Ganguly, W. W. Hargrove, J. Huang, J. Kumar and R. R. Vatsavai, "Data Mining in Earth System Science (DMESS 2011)," *Proceedings of the Eleventh International Conference on Computational Science (ICCS 2011)*, *Procedia* **4**, 1450–1455 (2011).
40. D. Kim, J. W. Larson, and K. Chiu, "Malleable Model Coupling with Prediction," accepted, CCGRID 2012.
41. J. W. Larson, "Visualizing Climate Variability with Time-Dependent Probability Density Functions, Detecting It with Information Theory," accepted ICCS 2012.
42. D. Kim, J. W. Larson, and K. Chiu, "Study of Dynamic Load Balancing for Malleable Model Coupling, submitted The 10th IEEE International Symposium on Parallel and Distributed Processing with Applications.

1. J. Larson and I. Mokhov, *An Intercomparison of Total Cloud Among Six MECCA Phase I Models*. Report to the Model Evaluation Consortium for Climate Assessment (MECCA) (1994).

2. J. Larson and A. Henderson-Sellers, *Tropical Cyclones and Climate Change: Preliminary Study of Formation and Potential Impacts*. Report to the Model Evaluation Consortium for Climate Assessment (MECCA) (1994).
3. J. W. Larson, G. Michael, and P. Wielopolski, *NCAR Community Climate Model (CCM1) on the AP1000: Towards a Research Tool*. Report to Fujitsu, Ltd., Tokyo, Japan (1994).
4. J. W. Larson, *Visualization Issues Related to the Atmospheric Modeling Project on the AP1000*. Report to Fujitsu Ltd., Tokyo, Japan (1994).
5. J. A. Taylor, J. W. Larson, and R. J. Oglesby, *Simulating the Urban Heat Island Effect Using the NCAR/PSU MM4/MM5 Regional Climate Models*. Report to Fujitsu Ltd., Tokyo, Japan (1994).
6. D. E. Hyman, D. R. Whitehouse, J. W. Larson, and J. A. Taylor, *A Visualization Package for the Atmospheric Modeling Project on the AP1000*. Report to Fujitsu Ltd., Tokyo, Japan (1995).
7. J. W. Larson, J. A. Taylor, D. Sitsky, and J. Michalakes, *Establishment of the Penn State/NCAR Mesoscale Model 5 on the AP1000*. Report to Fujitsu Ltd., Tokyo, Japan (1995).
8. J. W. Larson, J. A. Taylor, D. Sitsky, and J. Michalakes, *Status of MPMM on the AP1000*. Report to Fujitsu Ltd., Tokyo, Japan (1995).
9. P. M. Lyster, J. W. Larson, C. H. Q. Ding, J. Guo, W. Sawyer, A. M. da Silva, and I. Stajner, *Design of the Goddard Earth Observing System (GEOS) Parallel Physical-space Statistical Analysis System (PSAS)*, DAO Office Note 97-05, NASA Goddard Space Flight Center, Greenbelt, MD (1997).
10. J. Guo, J. W. Larson, P. M. Lyster, and G. Gaspari, *Documentation of the Physical-space Statistical Analysis System (PSAS): The Factored Operator Error Covariance Model Formulation*, DAO Office Note 98-04, Data Assimilation Office, Goddard Space Flight Center, Greenbelt, MD (1998).
11. J. Larson, J. Guo, P. M. Lyster, and G. Gaspari, *Documentation of the Physical-space Statistical Analysis System (PSAS): The Software Implementation of the PSAS*, DAO Office Note 98-05, Data Assimilation Office, Goddard Space Flight Center, Greenbelt, MD (1998).
12. Cecelia Deluca, J. Walter Larson, Lawrence Buja, Anthony Craig, and John Drake, *Community Climate System Model Software Engineering Plan 2000-2005*, CCSM Software Engineering Working Group Report, National Center For Atmospheric Research (2000, updated 2002).
13. J. W. Larson, R. L. Jacob, and E. T. Ong, *Port of the Model Coupling Toolkit to the Fujitsu VPP-300 and VPP-5000*, report, Fujitsu America, March, 2003.
14. A. Kritz, D. Keyes, 48 co-authors, and J. W. Larson, "Fusion Simulation Project Workshop Report," United States Department of Energy, May 2007.
15. Submission to the Australian Parliament's House Inquiry on Long-term Meteorological Forecasting, 24 April 2009, Appearance before Inquiry on 17 June 2009.

SOFTWARE

1. DAO On-line observational quality control system, in operational use at the NASA Global Modeling and Assimilation Office.
2. Physical-space Statistical Analysis System (PSAS), in operational use at the NASA Global Modeling and Assimilation Office.

3. Model Coupling Toolkit, released and publicly available from the MCT Web site <http://www.mcs.anl.gov/mct>. Used widely in the climate community, and is bundled with the source code of both CCSM and the Regional Ocean Modeling System (ROMS).
4. Community Climate System Model (Flux Coupler), released and publicly available from the CCSM Web site <http://ccsm.ucar.edu>.
5. Earth System Modeling Framework (ESMF), released and publicly available from the ESMF Web site <http://www.esmf.ucar.edu>.

INVITED TALKS

1. "Analysis of GCM Output on the Annual, Seasonal, Monthly, and Daily Time-scales," Intergovernmental Panel on Climate Change (IPCC) Meeting, Sydney, Australia, 7–9 February 1994.
2. "Parallelization of the Physical-space Statistical Analysis System (PSAS)," NASA Computational Aerosciences (CAS) Workshop '98, NASA Ames Research Center, Mountain View, CA, 25–27 August 1998.
3. "Software Implementation of the Physical-space Statistical Analysis System (PSAS)," PSAS Workshop, NASA Goddard Space Flight Center, 26 October 1998.
4. "Proposal for standard diagnostics and data interchange modules in PIRCS," Project to Intercompare Regional Climate Simulations (PIRCS) Review and Planning Workshop, Copenhagen, Denmark, 22–23 May 2000.
5. "The Model Coupling Toolkit," Workshop on Space Environment Model Interfaces, University of Michigan, Ann Arbor, MI, 17–18 July 2001.
6. "MCT: What's Going On," Fourth International Workshop on Next Generation Climate Models for Advanced High Performance Computing Facilities, NCAR, Boulder, Colorado, 12–14 March 2002.
7. "A Component Programming Model for the Model Coupling Toolkit," Joint SWMF-ESMF Interoperability and Model Coupling Workshop, University of Michigan, Ann Arbor, MI February 25–26, 2003.
8. "The MxN Problem," Joint SWMF-ESMF Interoperability and Model Coupling Workshop, University of Michigan, Ann Arbor, MI 25–26 February 2003.
9. "The New Coupling Infrastructure for the CCSM," invited talk, Climate Change Prediction Program Meeting, Charleston, SC, 17–19 March 2003.
10. "The MCT Component Programming Model," invited talk, Workshop on Emerging Practices for Component Interfaces in Earth System Models, Geophysical Fluid Dynamics Laboratory, Princeton, NJ, 14 May 2003.
11. "The Parallel Coupling Problem: Organizing Principles and the Model Coupling Toolkit Approach," Joint ORNL/IU Workshop on Computational Frameworks in Fusion, Oak Ridge National Laboratory, 7–9 June, 2005.
12. "The Parallel Coupling Problem in Multiphysics Modeling," invited talk, SIAM Annual Meeting, New Orleans, LA, 11 July 2005.
13. "The Model Coupling Toolkit," invited talk, DOE ACTS Collection Workshop, Berkeley, CA 26 August 2005.
14. "A Parallel Coupling Problem and Model Coupling Toolkit Primer," invited talk, Australian Partnership for Advanced Computing Parallel Coupled Models Workshop, Canberra, 10 April 2006.
15. "Computational Issues in Parallel Coupled and Multiphysics Models," invited talk, CSIRO Mk3L Workshop, University of New South Wales, 25–26 May, 2006.

16. J. W. Larson, M. Tobis, M. Steder, R. T. Pierrehumbert, R. L. Jacob, and E. T. Ong, "pyMCT and pyCPL: Refactoring the Community Climate System Model Using Python," Python Workshop at the Thirteenth Biennial Computational Techniques and Applications Conference (CTAC '06), Townsville, Australia, 6 July, 2006.
17. J. W. Larson and R. L. Jacob, "MCMD and MCT: We've Been Doing This a While," CCA MCMD Workshop, Snoqualmie, WA, January 24, 2007.
18. J. W. Larson and R. L. Jacob, "Coupling, Parallel Coupling, and the MCT Programming Model," ITAPS/CCA Coupling Workshop, Chicago, IL, March 9, 2007.

SEMINARS AND
COLLOQUIA

1. "Analysis and Packaging of GCM Output," Centre for Resource and Environmental Studies (CRES) Seminar, The Australian National University, 12 May 1994.
2. "Regional and Global Atmospheric Models on the AP1000," CAP Technical Group Seminar, The Australian National University, July 13, 1995.
3. "A few Remarks on Numerical Model Validation and Sensitivity Analysis," ANU Advanced Computation Seminar, The Australian National University, 29 April 1996.
4. "The Physical-space Statistical Analysis System (PSAS)," Seminar, Mathematics and Computer Science Division, Argonne National Laboratory, 30 July 1999.
5. J. W. Larson and R. L. Jacob, "The Model Coupling Toolkit," Brown Bag Seminar, Mathematics and Computer Science Division, Argonne National Laboratory, 11 January 2001.
6. "The Physical-space Statistical Analysis System (PSAS)—A Parallel Framework for Atmospheric Data Analysis?," ALICE Brown Bag Seminar, Mathematics and Computer Science Division, Argonne National Laboratory, 23 March 2000.
7. "The Model Coupling Toolkit," Seminar, Naval Postgraduate School, Monterey, CA, 31 May 2001.
8. "A Fortran90 Model Coupling Toolkit," Seminar, Southwest Research Institute, San Antonio, TX, 5 October 2001.
9. "What is the Model Coupling Toolkit?" Seminar, NASA Center for Computational Sciences (NCCS), NASA Goddard Space Flight Center, 9 November 2001.
10. "The Model Coupling Toolkit: Building Blocks for Parallel Earth System Models," Seminar, Atmospheric Science Division, Lawrence Livermore National Laboratory, 25 February 2002.
11. "From Parallel Models to Parallel 'Super Models' Using The Model Coupling Toolkit," Seminar, Sandia National Laboratory, 26 February 2002.
12. "Coupled Climate Models as We Know Them," Seminar, Earth Observation Centre, CSIRO Australia, March 3, 2005.
13. "The Parallel Coupling Problem and the Model Coupling Toolkit," Seminar, Center for Advanced Scientific Computing, Lawrence Livermore National Laboratory, April 26, 2005.
14. "The Parallel Coupling Problem," Advanced Computation and Modelling Seminar, Mathematical Sciences Institute, Australian National University, 1 May 2006.
15. "MPEU: Message Passing Environment Utilities," ANU Supercomputer Facility Seminar, Australian National University, 2 May 2006.
16. "Asleep at the Switch: The Case for Parallel Programming in the Analysis of Big Geophysical Data," Seminar, CSIRO Davies Laboratory, Townsville, Australia, 7 July, 2006.
17. "Parallel Infrastructure for Coupled Models and Data Assimilation Systems," Seminar, Australian Bureau of Meteorology, Melbourne, Australia, 10 August, 2006.

18. "Wanted: A Theory of Model Coupling," Complex and Open Systems Network Seminar, Department of Theoretical Physics, Research School of Physical Sciences and Engineering, The Australian National University, 5 October, 2006.
19. "The Model Coupling Toolkit Stump Speech," Seminar, ANU Supercomputing Facility, 31 October, 2006.
20. "MCT: A Programming Model for Coupled Model Construction," seminar Computational Sciences and Mathematics Division, Pacific Northwest National Laboratory, March 13, 2007.
21. "MCT: Middleware for Multiphysics Modeling," seminar, Institute for Applied Physics and Computational Mathematics, Beijing, May 30 2007.
22. "Coupled Climate Modelling and Computation: Two Things That Go Together," seminar, Queensland Climate Change Centre of Excellence, Department of Natural Resources and Water, Brisbane, July 5, 2007.
23. "Climate and Earth System Models: What's Under the Hood, and What's Going There Next?," Stout Lecture, Department of Geosciences, University of Nebraska, Lincoln, Nebraska, November 14 2008.

OTHER
CONFERENCE
PRESENTATIONS
NOT PUBLISHED
IN PROCEEDINGS

1. "Averaging of Nonlinear Wavetrains," Sherwood Plasma Theory Conference, Gatlinburg, Tennessee, 18–20 April 1988.
2. "A Simulation of Interactions between a Wave Packet and Particles Trapped in a Magnetic Mirror Field," First General Meeting of the APS Topical Group in Computational Physics, Boston, Massachusetts, 5–8 June 1989.
3. "Particle Dynamics in the Neighborhood of a Magnetic Null," American Geophysical Union Spring Meeting, Baltimore, MD, 28–31 May 1991.
4. "Painlevé Analysis of Reconnection Fields," Thirty-third Annual Meeting of the American Physical Society, Division of Plasma Physics, Tampa, FL, 4–8 November 1991.
5. "Painlevé Analysis Applied to Particle Dynamics in Magnetic and Electric Fields Associated with Reconnection," Sherwood Plasma Theory Conference, Santa Fe, NM, 6–8 April 1992.
6. "Integrability Properties of Particle Dynamics During Reconnection," Spring Meeting of the American Geophysical Union, Montréal, 11–15 May 1992.
7. "Phase-Space Methods Applied to Climate Model Output," Tripartite Meeting on Climate Model Validation and Regional Scenarios, Melbourne, Victoria, 4–7 April 1993.
8. "Total Cloud Amount as Represented by GCMs," MECCA Technical Committee Meeting, Sydney, Australia, 10–11 February 1994.
9. "Tropical Cyclones and Climate Change," MECCA Technical Committee Meeting, Sydney, Australia, 10–11 February 1994.
10. J. Taylor, J. Larson, and I. Foster, "Bridging the Climate Information Gap: A Case Study for the U.S. Midwest," Climate Change Prediction Program Workshop, Bethesda, MD, 27–29 March 2000.
11. J. A. Taylor and J. W. Larson, and I. T. Foster, "Regional Climate Simulations for the U.S. Midwest Using MM5v3," MM5 Users' Workshop, Boulder, CO, 22–25 June 2000.
12. J. W. Larson, "A Set of File and Diagnostic Utilities for MM5v3," MM5 Users' Workshop, Boulder, CO, 22–25 June 2000.
13. J. Larson, R. Jacob, and J. Guo, "Under Construction: The Model Coupling Toolkit," Chattaqua Workshop on Lake Superior, Two Harbors MN, 3–5 November 2000.

14. J. A. Taylor and J. W. Larson, "High Resolution Regional Climate Modeling for the Midwest and Great Plains using MM5v3," American Geophysical Union Fall Meeting, 14–19 December 2000.
15. J. W. Larson and R. J. Oglesby, "Determining Large versus Small-Scale Atmospheric Variations Through the Application of Statistical Polishing," American Geophysical Union Fall Meeting, 14–19 December 2000.
16. R. W. Arritt, C. J. Anderson, W. J. Gutowski, E. S. Takle, Z. Pan, F. Otieno, M. de Castro, D. Caya, S.-C. Chen, J. H. Christensen, O. B. Christensen, M. Fox-Rabinovitz, M. A. Gaertner, F. Giorgi, G. Grell, S.-Y. Hong, H.-M. H. Juang, J. J. Katzfey, W. M. Lapenta, R. Laprise, J. W. Larson, G. Liston, D. Luethi, P. Marbaix, J. L. McGregor, R. A. Pielke Sr., J. O. Roads, M. Rummukainen, and J. A. Taylor, "Multi-Model Ensemble and Intercomparison for the 1993 Flood Over the Central U.S.A.," European Geophysical Society XXVI General Assembly (2001).
17. "The Model Coupling Toolkit" contributed talk, Third International Workshop on Next Generation Climate Models for Advanced High Performance Computing Facilities, Tokyo, Japan, 28–30 March 2001.
18. R. W. Arritt, C. J. Anderson, W. J. Gutowski, Jr., E. S. Takle, Z. Pan, F. Otieno, M. de Castro, D. Caya, S.-C. Chen, J. H. Christensen, O. B. Christensen, M. Fox-Rabinovitz, M. A. Gaertner, F. Giorgi, G. Grell, S.-Y. Hong, C. Jones, H.-M. H. Juang, J. J. Katzfey, W. M. Lapenta, R. Laprise, J. W. Larson, G. Liston, D. Luethi, P. Marbaix, J. L. McGregor, R. A. Pielke, Sr., J. O. Roads, M. Rummukainen, and J. A. Taylor, "A multi-model regional climate ensemble for the 1993 flood over the Central United States," Eighth Scientific Assembly, International Association of Meteorology and Atmospheric Sciences, 10-18 July, Innsbruck (2001).
19. T. Bettge, A. Craig, B. Kauffman, J. Larson, R. Jacob, and E. Ong, "The CCSM Next Generation Coupler—The CPL6 Instantiation," The Seventh Community Climate System Model Workshop, Breckenridge, CO, 25–27 June 2002.
20. J. W. Larson, R. L. Jacob, and E. T. Ong, "The Model Coupling Toolkit, Version 1.0," poster, Climate Change Prediction Program Meeting, Charleston, SC, 17–19 March 2003.
21. T. Bettge, A. Craig, B. Kauffman, J. W. Larson, R. L. Jacob, E. T. Ong, C. H. Q. Ding, and H. He, "The CCSM Flux Coupler, Version 6 (CPL6)," poster, Climate Change Prediction Program Meeting, Charleston, SC, 17–19 March 2003.
22. "A Modest Proposal for Parallel Analysis Tools," contributed talk, presented at the Third International Conference on High Performance Computing for Climate, Weather and Ocean Applications, 8–10 October 2003.
23. J. W. Larson, R. L. Jacob, and E. T. Ong, "Model Coupling Toolkit Benchmarks," poster presented at the Fourth Los Alamos Computer Science Institute (LACSI) Symposium, 27–29 October 2003.
24. J. W. Larson, R. L. Jacob, E. T. Ong, A. Craig, B. Kauffman, T. Bettge, Y. Yoshida, J. Ueno, H. Komatsu, S. Ichikawa, C. Chen, and P. Worley, "Benchmarking a Parallel Coupled Model," poster presented at *Supercomputing 2003*, 15–21 November 2003.
25. J. W. Larson and P. M. Dickens, "Symbolic Dynamics of Reanalysis Data," poster presented at the 2003 AGU Fall Meeting, 8–13 December 2003.
26. J. W. Larson, "A Software Roadmap for Parallel Analysis Tools," poster presented at SIAM Parallel Processing 2004.
27. O. Volberg, J. W. Larson, R. L. Jacob and J. Michalakes, "Registration and Resource Allocation Mechanisms in High-Performance Application Frameworks," poster presented at IEEE Cluster 2005, Boston, MA 26-30 September 2005.

28. J. W. Larson and B. Norris, "A Draft Specification for Parallel Coupling Infrastructure," Common Component Architecture Winter Meeting, San Francisco, CA 27 January 2006.
29. J. W. Larson and B. Norris, "Components for Solving the Parallel Coupling Problem," SIAM Conference on Parallel Processing for Scientific Computing, 22 February 2006.
30. J. W. Larson, "Data Challenges in Climate Modeling," contributed talk, White Conference on Mastering the Data Explosion in the Earth and Environmental Sciences, Australian Academy of Science, Canberra, 19-21 April 2006.
31. J. W. Larson, "Organising Principles for the Parallel Coupling Problem," Thirteenth Biennial Computational Techniques and Applications Conference (CTAC '06), Townsville, Australia, 3-5 July, 2006.
32. J. W. Larson, "Information Theory and the Promise it Offers Climate," Australia-New Zealand Climate Forum, Canberra, Australia 6 September, 2006.
33. R. Dewar, R. Ball, M. Hole, R. Numata, L. Stals, R. Robson, R. F. Abdullatif, A. Sullivan, J. W. Larson, H. J. Gardner, and R. G. Storer, "Plasma Theory and Modelling: A Cost-Effective Route to ITER Engagement," Australian ITER Forum Workshop, Sydney, October 12, 2006.
34. J. W. Larson, R. L. Jacob, V. Kotamarthi, R. Coulter, and M. Stein, "Upscaling Utilities for Processing ARM and AmeriFlux Data for Climate Model Evaluation," 14th Annual Meeting, Australian Meteorological and Oceanographic Society, Adelaide, February 7 2007.
35. J. W. Larson, R. L. Jacob, and A. P. Craig, "CCSM, CPL6, and Lessons for ACCESS," 14th Annual Meeting, Australian Meteorological and Oceanographic Society, Adelaide, February 8 2007.
36. S. E. Kruger, J. R. Cary, A. Pletzer, R. Cohen, T. Rognlien, D. M. McCune, S. Krasheninnikov, J. W. Larson, L. McInnes, D. Estep, A. D. Maloney, P. H. Worley, R. Bramley, and D. Keyes, "Overview of Framework Application for Core-Edge Transport Simulations (FACETS)," 12th US-EU Transport Taskforce Workshop, San Diego, April 18, 2007.
37. A. Pletzer, A. Hakim, M. Miah, S. E. Kruger, S. Vadlamani, J. R. Cary, R. Cohen, T. Rognlien, T. Epperly, D. McCune, S. Krasheninnikov, A. Pigarov, J. W. Larson, L. C. McInnes, and D. Estep, "The FACETS Project," International Sherwood Fusion Theory Conference, Boston, April 23, 2007.
38. J. W. Larson, P. Briggs, and M. Tobis, "Practical Aspects of Symbolisation and Subsequent Analysis of Weather Data," 8th Asia-Pacific Complex Systems Conference (Complex07), Gold Coast, Australia, July 4 2007. **Winner, Best Unsolicited Presentation, Earth Sciences Track.**
39. J. W. Larson, "A Probability Density Function-based View of Climate," Australia-New Zealand Climate Forum, Hobart, October 14 2010.