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EDUCATION

University of California, Los Angeles, Ph.D., Nuclear Engineering, 1995.

University of California, Los Angeles, M.S., Nuclear Engineering, 1992.

University of California, Berkeley, B.S., Nuclear Engineering, 1988.

WORK EXPERIENCE

Lawrence Berkeley National Laboratory. March 1996 – Present.

Staff Scientist, Center for Computational Sciences and Engineering (Post-doctoral researcher, March 1996 March 1998).

Lawrence Livermore National Laboratory. March 1995 – March 1996.

Post-doctoral researcher, Center for Computational Sciences and Engineering.

University of California, Los Angeles. October 1988 – March 1995.

Graduate student researcher, Mechanical, Aerospace and Nuclear Engineering Dept.

SYNERGISTIC ACTIVITIES

Simulation and analysis of multi-scale reacting flows in low Mach number combustion, stellar nuclear deflagrations and explosions, high-speed reacting flows in confined chambers, and multi-component porous media systems. Development of efficient, solution-adaptive algorithms for application on distributed parallel computing hardware. Combustion research focused on fundamental aspects of turbulence-chemistry interactions in premixed turbulent flames, exploration of processes coupling micro-mixing and finite-rate chemical kinetics that lead to effects observable at the laboratory scale (e.g. flame stabilization, localized extinction, and flame-generated nitrogen-based emissions). Software architecture, implementation for reactive multiphase, multicomponent flows in porous media. Treasurer for the Western States Section of the US Combustion Institute.

RELEVANT PUBLICATIONS

A. Nonaka, J. B. Bell, M. S. Day, C. Gilet, A. S. Almgren, and M. L. Minion, A Deferred Correction Coupling Strategy for Low Mach Number Flow with Complex Chemistry, *Combustion Theory and Modelling*, **16**(6) 1053-1088, 2012.

J. B. Bell, M. S. Day and M. J. Lijewski, Simulation of Nitrogen Emissions in a Premixed Hydrogen Flame Stabilized on a Low Swirl Burner", *Proceedings of the Combustion Institute*, 2012.

M. Day, S. Tachibana, J. Bell, M. Lijewski, V. Beckner and R. Cheng, A combined computational and experimental characterization of lean premixed turbulent low swirl laboratory flames. I. Methane flames., *Combustion and Flame*, **159**(1) 275-290, 2012.

A. J. Aspden, M. S. Day, and J. B. Bell, Turbulence-flame interactions in lean premixed hydrogen: transition to the distributed burning regime, *J. Fluid Mech.* **680**, 287-320, 2011.

A. J. Aspden, M. S. Day, and J. B. Bell, Characterization of Low Lewis Number Flames, *Proc. Combust. Inst.*, **33**, 1463-1471, 2011.

A. J. Aspden, M. S. Day, and J. B. Bell, Lewis Number Effects in Distributed Flames, *Proc. Combust. Inst.*, **33**, 1473-1480, 2011.

M. S. Day, J. B. Bell, X. Gao and P. Glarborg, Numerical Simulation of Nitrogen Oxide Formation in Lean Premixed Turbulent Flames, *Proc. Combust. Inst.*, **33**, 1591-1599, 2011.

M. S. Day, X. Gao, and J. B. Bell, Properties of Lean Turbulent Methane-Air Flames with Significant Hydrogen Addition, *Proc. Combust. Inst.*, **33**, 1601-1608, 2011.

RECENT COLLABORATORS – LAST 48 MONTHS

A. Almgren (LBNL), D. Agarwal (LBNL), B. Andre (LBNL), A. Aspden (Portsmouth, U.K.), K. Balakrishnan (LBNL), V. Beckner (LBNL), J. Bell (LBNL), M. Berndt (LANL), P.-T. Bremer (LLNL), M. Buksas (LANL), N. Carlson (LANL), E. Coon (LANL), K. Kastleton (PNL), R. Cheng (LBNL), M. Emmett (LBNL), K. Fagnan (LBNL), S. Finsterle (LBNL), G. Flach (SRNL), V. Freeman (PNL), M. Freshley (PNL), C. Gable (LANL), R. Garimella (LANL), X. Gao (Colorado State), C. Gilet (UMich), P. Glarborg (TU Denmark), G. Hammond (PNL), L. Howell (LLNL), A. Jensen (TU Denmark), C. Joggerst (SUNYSB), M. Lijewski (LBNL), K. Lipnikov (LANL), M. Minion (Stanford), D. Moulton (LANL), A. Nonaka (LBNL), V. Pascucci (Utah), G. Pau (LBNL), L. Pritchett (LANL), K. Schuchardt (PNL), R. Seitz (SRNL), C. Steefel (LBNL), S. Tachibana (JAXA, Japan), S. Woosley (UCSC), S. Yabasuki (PNL), W. Zhang (LBNL), M. Zingale (SUNYSB).

GRADUATE ADVISORS

Thesis advisor: R. Conn, Enterprise Partners Venture Capital.

Thesis Co-Advisor: F. Najmabadi, UCSD.