

## **JOHN B. BELL**

Mail Stop 50A-1148  
Lawrence Berkeley National Laboratory  
Berkeley, CA 94720  
JBBell@lbl.gov  
510-486-5391

### **EDUCATION**

**Cornell University** Ph.D. in Mathematics, 1979.  
**Cornell University** M.S. in Mathematics, 1977.  
**Massachusetts Institute of Technology** B.S. in Mathematics, 1975.

### **WORK EXPERIENCE**

**Lawrence Berkeley National Laboratory.** October 2011 - present.  
Mathematics and Computational Science Department Head.

**Lawrence Berkeley National Laboratory.** March 1996 - present.  
Group Leader of the Center for Computational Sciences and Engineering.

**Lawrence Livermore National Laboratory.** November 1993 - March 1996.  
Director of the Center for Computational Sciences and Engineering.

**Lawrence Livermore National Laboratory.** July 1986 - October 1993.  
Group Leader of the Applied Mathematics Group. (Staff scientist until August 1988).

**Exxon Production Research Company.** March 1982 - June 1986.  
Research Specialist and Group Leader of the Applied Mathematics Group in the Long Range Research Division.

**Naval Surface Weapons Center.** September 1979 - March 1982.  
Research Mathematician in the Mathematical Analysis Branch.

### **SYNERGISTIC ACTIVITIES**

Chair, AMS von Neumann Symposium, July 2011.  
Member, NAS Combustion Infrastructure Study, December 2008 – December 2011.  
Chair, SIAM Computational Science and Engineering Activity Group, Jan.1, 2007 - Dec. 31, 2008.  
Managing editor, Comm. in Applied Math. and Comput. Science, June 1, 2005 - present.  
Co-Chair, SIAM Annual Meeting, July 2004.

### **SELECTED PUBLICATIONS**

A.S. Almgren, A.J. Aspden, J. B. Bell, and M. L. Minion, “On the Use of Higher-Order Projection Methods for Incompressible Turbulent Flow”, *SIAM J. Sci. Comput.*, 35, 1, B25-B42, 2013.

M. Zingale, A. Nonaka, A. S. Almgren, J. B. Bell, C. Malone, and R. Orvedahl, “Low Mach Number Modeling of Convection in Helium Shells on Sub-Chandrasekhar White Dwarfs. I. Methodology”, *Astrophysical Journal*, 764, 97, 2013.

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 Modeling*, 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, 275-290, 2012.

A. J. Aspden, M. S. Day, and J. B. Bell, “Turbulence-flame interaction in lean premixed hydrogen”, Journal of Fluid Mechanics, vol 680, pp. 287-320, 2011.

F. Balboa, J. Bell, R. Delgado-Buscalioni, A. Donev, T. Fai, B. Griffith, C. Peskin, “Staggered Schemes for Fluctuating Hydodynamics”, Multiscale Modeling and Simulation, 10, 1360-1408, 2012.

A. J. Aspden, M. S. Day, and J. B. Bell, “Characterization of Low Lewis Number Flames”, Proceedings of the Combustion Institute, 33, 1463-1471, 2011.

A. J. Aspden, M. S. Day, and J. B. Bell, “Lewis Number Effects in Distributed Flames”, Proceedings of the Combustion Institute, 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. of the Combustion Institute, 33, 1591-1599, 2011.

## **RECENT COLLABORATORS – LAST 48 Months**

A. Almgren (LBNL), A. Aspden (U. Portsmouth), V. Beckner (LBNL), P.-T. Bermer (LLNL), A. Burrows (Princeton), J. Chen (SNL), R. Cheng (LBNL), C. Joggerst (LANL), M. Day (LBNL), A. Donev (CIMS), S. Dong (UCSC), T. Echehki (NCState), A. Garcia (SJSU), G. Glatzmaier (UCSC), J. Goodman (NYU), R. Grout (NREL), D. Kasen (UCSC), A. Kerstein (SNL), C. Law (Princeton), S. Li (LBNL), M. Lijewski (LBNL), H. Ma (UCSC), C. Malone (UCSC), M. Minion (Stanford), J. Niemeyer (U. Göttingen), A. Nonaka (LBNL), J. Nordhaus (Rochester), P. Nugent (LBNL), V. Pascucci (Utah), K. Pruess (LBNL), D. Quinlan (LLNL), V. Sankaran (SNL), W. Schmidt (U. Göttingen), J. Shalf (LBNL), S. Tachibana (JAXA), E. Vanden-Eijnden (CIMS), M. White (UCB), S. Williams (UNC), S. Woosley (UCSC), K. Zhang (LBNL), W. Zhang (LBNL), M. Zingale (SUNYSB)

**GRADUATE ADVISOR** L. Payne (deceased)

## **GRADUATE AND POSTDOCTORAL ADVISEES**

A. Almgren (LBNL), A. Aspden (U. Portsmouth), K. Balikrishnan (LBNL), A. Chaudhri (LBNL), A. Donev (CIMS), M. Duarte (LBNL), M. Emmett (LBNL), K. Fagnan (LBNL), X. Gao (Colorado State), C. Gilet (U. Mich.), J. Greenough (LLNL), M. Lai (Cisco), D. Marcus (Unknown), A. Nonaka (LBNL), G. Pau (LBNL), S. Williams (UNC)

## **JOURNAL CO-EDITORS**

M. Berger (NYU), A. Chorin (UCB), P. Colella (LBNL), P. Constantin (U. Chicago), M. Dryja (Warsaw University), M. G. Forest (UNC), L. Greengard (NYU), R. Klein (F. U. Berlin), N. Goldenfeld (U. Ill.), A. Ghoneim (MIT), R. Kupferman (Hebrew U.), R. LeVeque (UWash), M. Luskin (U. Minn.), Y. Maday (U. Pierre et Marie Curie), J. Sethian (UCB), J. L. Vazquez (U. Autonoma de Madrid), A. Quarteroni (Ecole Polytechnique Federale Lausanne), E. Tadmor (U. Md.), D. Talay (INRIA)