

CURRICULUM VITAE  
(abbreviated)

James J. Riley

February, 2014

**General biographical information**

Basic Data

Name: James J. Riley  
Professor, Mechanical Engineering  
Adjunct Professor, Applied Mathematics  
Aeronautics & Astronautics

Educational History

Degrees: Ph.D., Fluid Mechanics, The Johns Hopkins University, 1972  
Thesis supervisor: Stanley Corrsin  
B.A., Physics, Rockhurst College, 1965

Employment History

Acting chair, Mechanical Engineering, University of Washington,  
1997 to 1999  
Professor, Mechanical Engineering, University of Washington,  
1985 to present  
Adjunct Professor, Applied Mathematics, University of Washington,  
1985 to present  
Adjunct Professor, Aeronautics & Astronautics, University of Washington,  
2010 to present  
Associate Professor, Mechanical Engineering, University of Washington,  
1983 to 1985  
Department Manager and Program Manager, Flow Industries, Inc.,  
1977 to 1983  
Senior Research Scientist, Flow Industries, Inc., 1975 to 1983  
Research Scientist, Flow Industries, Inc., 1973 to 1975  
Research Physicist, Naval Research Laboratory, 1972 to 1973  
Post-Doctoral Visiting Scientist, National Center for  
Atmospheric Research, 1971 to 1972  
Chaire de Mathématiques Industrielles, l'Université Joseph Fourier,  
Grenoble, France, 1989 to 1992 (part-time,  
visiting chaired position)

## Awards/Honors

National Academy of Engineering  
Washington State Academy of Sciences  
Senior Visiting Fellow, Isaac Newton Institute,  
Cambridge University, Cambridge, U.K.  
NATO Research & Technology Organization Lecturer,  
Universidad Politecnica de Madrid, Spain  
Director's Award, US Geological Service (2010)  
Invited lecturer, Midwest Universities Lecture Tour (twice)  
Visiting Award from Université Paul Sabatier,  
Toulouse, France (twice)  
PACCAR Professor of Engineering, University of Washington  
Fellow, American Physical Society (1988)  
Chair, Division of Fluid Dynamics, American Physical Society  
Fellow, American Society of Mechanical Engineers (2003)  
Fellow, Institute of Physics (2004)  
Senior Scientific Fellow, Battelle Pacific Northwest National  
Laboratories (1989)  
Chaire de Mathématiques Industrielles, l'Université Joseph Fourier,  
Grenoble, France (visiting chaired professorship)  
Fellow, Center for Turbulence Research (Stanford/NASA Ames)  
German Government Sabbatical Leave Fellowship  
Australian Government Gleddon Visiting Fellowship

## Consulting

Nu Power Technologies (board of advisors), May, 2002 to 2005  
Midwest Dental Products, March, 2000 to March, 2001  
Northwest Research Associates, 1990 to present  
Battelle Pacific Northwest National Laboratories, 1989 to present  
Corbis, Inc., 1995  
Los Alamos National Laboratory, 1992  
Flow Industries, Inc., 1983 to 1985  
National Oceanic & Atmospheric Administration,  
response to the Deepwater Horizon Oil Spill, 2009

## Recent Service

### Editorial Activities

Associate Editor, *Journal of Fluid Mechanics*  
Editorial Committee, *Annual Review of Fluid Mechanics*  
Associate Editor, *Journal of Turbulence*  
Associate Editor, *Applied Mechanics Reviews*  
Associate Editor, 2006 issue of *Annual Review of Fluid Mechanics*

### Professional Society Activities

American Physical Society  
Chair, Annual Meeting of the Division of Fluid Dynamics, 2004  
Chair, Division of Fluid Dynamics, 1997  
Past Chair, Chair elect, Vice-Chair, Division of Fluid Dynamics,  
1995-1998  
Chair, Division of Fluid Dynamics, 2013  
Chair elect, Vice-Chair, Division of Fluid Dynamics,  
2010-2013  
Secretary/Treasurer, Division of Fluid Dynamics, 1992-1995  
Co-organizer for the Workshop on Turbulence Measurements for LES,  
sponsored by the NSF, AFOSR, DARPA, DOE, October, 1999  
Co-organizer for the Workshop on the Role of DNS in Turbulence  
Research, sponsored by the NSF and the Institute of Theoretical  
Physics, University of California, Santa Barbara, March, 1999  
American Institute of Physics  
Advisory Committee for Selection of Editor of the *Physics of  
Fluids*, 1998  
National Science Foundation  
Chair, National Visiting Committee, Fluid Mechanics Multi-Media  
Project, 1998-2001  
National Science Foundation, Workshop on Supercomputer Usage,  
Chairman of the Fluid Mechanics Committee, December, 1983  
American Meteorological Society  
Member, Committee on Boundary Layers and Turbulence (twice)  
Chair, Committee on Boundary Layers and Turbulence, 1987-1988  
Chair, Symposium on Turbulence and Diffusion, 1988

## Publications

According to the *Google Scholar*, publications authored or coauthored by Professor Riley have been cited over 6,600 times with an h-index of 38.

### Refereed Archival Journal Publications

- Thyng, K. M., J. J. Riley, and J. Thomson. 2013. "Inference of turbulence parameters from a ROMS simulation using the  $k$ - $\epsilon$  closure scheme", *Ocean Modelling*, **72**:104-118.
- Hinz, D. F., T.-Y. Kim, J. J. Riley, and E. Fried. 2013. "A-priori testing of  $\alpha$  regularization models as subgrid-scale closures for large-eddy simulations", *J. Turb.*, **14**(6):1-20.
- McGah, P. M., et al. 2012. "Hemodynamic conditions in a failing peripheral artery bypass graft", *J. Vasc. Surg.*, **56**(2):403-409.
- Kim, J. H., et al. 2012. "Immunosensor bioreaction towards low-cost, rapid diagnosis of tuberculosis", *Lab on a Chip*, **12**(8):1437-1440.
- Lee, H.-B., O. Kieseok, Y. Woon-Hong, et al. 2012. "Enhanced bioreaction efficiency of a microfluidic mixer toward high-throughput and low-cost bioassays", *Microfluidics & Nanofluidics*, **12**(1-4):143-156.
- Kongthon, J., J.-H. Chung, J.J. Riley, and S. Devasia. 2011. "Dynamics of cilia-based microfluidic devices", *J. Dyn. Systems Meas. Control - Trans. ASME*, **133**(5):051012.
- Flores, O., and J. J. Riley. 2011. "Analysis of turbulence collapse in the stably stratified surface layer using direct numerical simulation", *Bound. Layer Meteor.*, **139**(2):241-259.
- McGah, P. M., D. F. Leotta, K. W. Beach, J. J. Riley, and A. Aliseda. 2011. "A longitudinal study of remodeling in a revised peripheral artery bypass graft using 3D ultrasound imaging and computational hemodynamics", *J. Biomech. Engr.-Trans. ASME*, **133**(4):041008.
- Schumacher, K. R., J. J. Riley, and B. A. Finlayson. 2011. "Turbulence in ferrofluids in channel flow with steady and oscillating magnetic fields", *Phys. Rev. E*, **83**(1):016307.
- Wetchagarun, S., and J. J. Riley. 2010. "Dispersion and temperature statistics of inertial particles in isotropic turbulence", *Phys. Fluids*, **22**(6):063301.
- Schumacher, K. R., J. J. Riley and B. A. Finlayson. 2010. "Effects of an oscillating magnetic field on homogeneous ferrofluid turbulence", *Phys. Rev. E*, **81**(1):016317.
- Oh, K., B. Smith, S. Devasia, J. J. Riley, and J. H. Chung. 2010. "Characterization of mixing performance for bio-mimetic silicone cilia", *Microfluid. Nanofluid.*, **9**(4-5):645-655.
- Oh, K., J. H. Chung, S. Devasia, and J. J. Riley. 2009. "Bio-mimetic silicone cilia for microfluidic manipulation", *Lab on a Chip*, **9**(11):1561-1566.
- Schwarzkopf, J. D., C. T. Crowe, J. J. Riley and S. Wetchagarun. 2009. "Direct numerical simulation of stationary particles in homogeneous turbulence decay: Application of the k-epsilon model", *Int. J. Multiphase Flow*, **35**(5):411-416.
- Berrouk, A. K., D. E. Stock, D. Lawrence and J. J. Riley. 2008. "Heavy particle dispersion from a point source in turbulent pipe flow", *Int. J. Multiphase Flow*, **34**(10), pp. 916-923.

- Nichols-Pagel, G. A., D. B. Percival, P. G. Reinhall, and J. J. Riley. 2008. "Should structure functions be used to estimate power laws in turbulence? A comparative study", *Physica D – Nonlin. Phen.*, **237**(5), pp. 665-677.
- Schumacher, K. R., J. J. Riley, and B. A. Finlayson. 2008. "Homogeneous turbulence in ferrofluids with a steady magnetic field", *J. Fluid Mech.*, **599**, pp. 1-28.
- Riley, J. J., and E. Lindborg. 2008. "Stratified turbulence: a possible interpretation of some geophysical turbulence measurements", *J. Atmos. Sci.*, **65**(7), pp 2416-2424.
- E. Lindborg and J. J. Riley. 2007. "A condition on the average Richardson number for weak nonlinearity of internal gravity waves", *Tellus Series A – Dyn. Meteorol. and Ocean.*, **59**(5), pp. 781-784.
- Berrouk, A. S., D. Laurence, J. J. Riley, and D. E. Stock. 2007. "Stochastic modeling of heavy particle dispersion by subfilter motion for LES of high Reynolds number pipe flow", *J. Turbulence*, **8**(50), pp. 1-20.
- Oh, K., J.-H. Chung, J. J. Riley, Y.-L. Liu, and W.-K. Liu. 2007. "Fluid flow-assisted dielectrophoretic assembly of nonowires", *Langmuir*, **23**(23), pp. 11932-11940.
- Nichols, J. W., P. J. Schmidt, and J. J. Riley. 2007. "Self-sustained oscillations in variable-density jets", *J. Fluid Mech.*, **582**, pp. 341-376.
- Riley, J. J. 2006. "Review of large-eddy simulation of non-premixed turbulent combustion", *J. Fluids Engr. – Trans. ASME*, Vol. 128(2), pp. 209-215.
- Mitarai, S., J. J. Riley, and G. Kosály. 2005. "Testing of turbulent mixing models for Monte-Carlo PDF simulations", *Phys. Fluids*, Vol. 17(4), Art. No. 047101.
- Mitarai, S., G. Kosály, and J. J. Riley. 2004. "A new Lagrangian flamelet model for local flame extinction and re-ignition", *Comb. Flame*, Vol. 137(3), pp. 306-319.
- Sripakagorn, P., G. Kosály, and J. J. Riley. 2004. "Investigation of the influence of the initial Reynolds number on extinction and reignition", *Comb. Flame*, Vol. 136, pp. 351-363.
- Mitarai, S., J. J. Riley, and G. Kosály. 2003. "A Lagrangian study of scalar diffusion in isotropic turbulence with chemical reaction", *Phys. Fluids*, Vol. 15, pp. 3856-3866.
- Martin, S. M., G. Kosály, J. C. Kramlich, and J. J. Riley. 2003. "The premixed conditional moment closure method applied to idealized lean premixed gas turbine combustors", *J. Engr. for Gas Turbines and Power*, Vol. 125, pp. 895-900.
- Riley, J. J., and S. M. de Bruyn Kops. 2003. "Dynamics of turbulence strongly influenced by buoyancy", *Phys. Fluids*, Vol. 15, pp. 2047-2059.
- de Bruyn Kops, S. M., and J. J. Riley. 2003. "Large-eddy simulation of a reacting scalar mixing layer with Arrhenius chemistry", *Comp. and Math. with Applns.*, Vol. 46, pp. 547-569.
- Yanase, S., M. Jizuguchi, and J. J. Riley. 2001. "Rotating magnetohydrodynamic free-shear flows. I. Linear stability analysis", *Phys. Fluids*, Vol. 13, pp. 1946-1955.
- de Bruyn Kops, S. M., J. J. Riley, and G. Kosály. 2001. "Direct numerical simulation of reacting scalar mixing layers", *Phys. Fluids*, Vol. 13, pp. 1450-1465.
- de Bruyn Kops, S. M., and J. J. Riley. 2001. "Mixing models for large-eddy simulation of non-premixed turbulent combustion", *J. Fluids Engr.–T. ASME*, Vol. 123, pp. 341-346.

- de Bruyn Kops, S. M., and J. J. Riley. 2001. "Large-eddy simulation of non-premixed reacting flows with Arrhenius chemistry", *Comp. Math. with Applications*, to appear.
- de Bruyn Kops, S. M., and J. J. Riley. 2000. "Re-examining the thermal mixing layer with numerical simulations", *Phys. Fluids*, Vol. 12, pp. 185-192.
- Heo, B., I.-Y. Shen, and J. J. Riley. 2000. "Reducing disk flutter by improving aerodynamic design of base castings", *IEEE T. Magn.*, Vol. 36, pp. 2222-2224.
- Cook, A. W., and J. J. Riley. 1998. "Subgrid-scale modeling for turbulent, reacting flows", *Comb. Flame*, Vol. 112, pp. 593-606.
- de Bruyn Kops, S. M., and J. J. Riley. 1998. "Direct numerical simulation of laboratory experiments in isotropic turbulence", *Phys. Fluids*, Vol. 10(9), pp. 2125-2127.
- Slinn, D. N., and J. J. Riley. 1998. "A model for the simulation of turbulent boundary layers in an incompressible stratified flow", *J. Comp. Phys.*, Vol. 144, pp. 550-602.
- Slinn, D. N., and J. J. Riley. 1998. "Turbulent dynamics of a critically reflecting internal gravity wave", *Theoret. Comp. Fl. Dyn.*, Vol. 11, pp. 281-303.
- de Bruyn Kops, S. M., J. J. Riley, G. Kosály and A. W. Cook. 1998. "Investigation of modeling for non-premixed turbulent combustion", *Flow, Turb. Comb.*, Vol. 60, pp. 105-122.
- Cook, A. W., J. J. Riley, and G. Kosály. 1997. "A laminar flamelet approach to subgrid-scale chemistry in turbulent flows", *Comb. Flame*, Vol. 109, pp. 332-341.
- de Bruyn Kops, S. M., and J. J. Riley. 1997. "Scalar transport characteristics of the linear-eddy model", *Comb. Flame*, Vol. 112, pp. 253-260.
- Montgomery, C. J., G. Kosály, and J. J. Riley. 1997. "Direct numerical simulation of turbulent nonpremixed combustion with multistep hydrogen-oxygen kinetics", *Comb. Flame*, Vol. 109, pp. 113-144.
- Cook, A. W., and J. J. Riley. 1996. "Direct numerical simulation of a turbulent reactive plume on a parallel computer", *J. Comp. Physics*, Vol. 129, pp. 263-283.
- Lombard, P. N., and J. J. Riley. 1996. "Instability and breakdown of internal gravity waves. 1. Linear stability analysis", *Phys. Fluids*, Vol. 8, pp. 3271-3287.
- Slinn, D. N., and J. J. Riley. 1996. "Turbulent mixing in the oceanic boundary layer caused by internal wave reflection from sloping terrain", *Dynam. Atmos. Oceans*, Vol. 24, pp. 51-62.
- Lombard, P. N., and J. J. Riley. 1996. "On the breakdown into turbulence of propagating internal waves", *Dynam. Atmos. Oceans*, Vol. 23, pp. 345-355.
- Métais, O., P. Bartello, E. Garnier, J. J. Riley, and M. Lesieur. 1996. "Inverse cascade in stably-stratified rotating turbulence", *Dyn. Atmos. Oceans*, Vol. 23, pp. 193-203.
- Metais, O., C. Flores, S. Yanase, J. J. Riley and M. Lesieur. 1995. "Rotating free-shear flows. Part 2. Numerical simulations", *J. Fluid Mech.*, Vol. 293, pp. 47-80.
- Winters, K. B., Lombard, P. N., J. J. Riley, and E. D'Asaro. 1995. "Available potential energy and mixing in density-stratified fluids", *J. Fluid Mech.*, Vol. 289, pp. 115-128.
- Cook, A. W., and J. J. Riley. 1994. "A subgrid model for equilibrium chemistry in turbulent flows", *Phys. Fl.*, Vol. 6(8), pp. 2868-2870.
- Mell, W. E., V. Nilsen, G. Kosály, and J. J. Riley. 1994. "Investigation of closure models for nonpremixed turbulent reacting flows", *Phys. Fl.*, Vol. 6(3), pp. 1331-1356.

- Mell, W. E., V. Nilsen, G. Kosály, and J. J. Riley. 1993. "Direct numerical simulation investigation of the conditional moment closure model for nonpremixed turbulent reacting flows", *Combust. Sci. Tech.*, Vol. 91, pp. 179-186.
- Yanase, S., C. Flores, O. Métais, and J. J. Riley. 1993. "Rotating free shear flows. Part 1: linear stability analysis", *Phys. Fl.*, Vol. 5(11), pp. 2725-2737.
- Montgomery, C. J., G. Kosály, and J. J. Riley. 1993. "Direct numerical simulation of turbulent reacting flow using a reduced hydrogen-oxygen mechanism", *Combust. Flame*, Vol. 95, pp. 247-260.
- Winters, K. B., and J. J. Riley. 1992. "Instability of internal waves near a critical level", *Dynam. Atmos. Oceans*, Vol. 16, pp. 249-278.
- Chen, C., J. J. Riley, and P. A. McMurtry. 1991. "An investigation of Favre averaging in turbulent flows with chemical reaction", *Combust. Flame*, Vol. 87, pp. 257-277.
- Lelong, M.-P., and J. J. Riley. 1991. "Internal wave-vortical mode interactions in strongly stratified flows", *J. Fluid Mech.*, Vol. 232, pp. 1-19.
- Mell, W. E., G. Kosály, and J. J. Riley. 1991. "The length-scale dependence of scalar mixing", *Phys. Fl.*, Vol. 3A(10), pp. 2472-2477.
- Frank, A., B. Balick, and J. Riley. 1990. "Stellar Wind Paleontology - Shells and Halos of Planetary Nebula", *Astron. J.*, Vol. 100, pp. 1903-1914.
- Jou, W.-H., and J. J. Riley. 1989. "Progress in direct numerical simulations of turbulent reacting flows", *AIAA J.*, Vol. 27(11), pp. 1543-1556.
- McMurtry, P. A., J. J. Riley, and R. W. Metcalfe. 1989. "Effects of Heat Release on Large-Scale Structures in Turbulent Mixing Layers", *J. Fluid Mech.*, Vol. 199, pp. 297-332.
- Staquet, C., and J. J. Riley. 1989. "On the Velocity Field Associated with Potential Vorticity", *Dyn. Atmos. Oceans*, Vol. 14, pp. 93-123.
- Soetrisno, M., D. S. Eberhardt, J. J. Riley, and P. A. McMurtry. 1989. "A Study of Inviscid, Supersonic Mixing Layers Using a Second-Order TVD Scheme", *AIAA J.*, Vol. 27, pp. 1770-1778.
- Domaradzki, J. A., R. W. Metcalfe, R. S. Rogallo, and J. J. Riley. 1987. "Analysis of Subgrid-Scale Viscosity with Use of Results from Direct Numerical Simulations", *Phys. Rev. Let.*, Vol. 58, No. 6, pp. 547-550, February.
- Metcalfe, R. W., S. A. Orszag, M. E. Brachet, S. Menon, and J. J. Riley. 1987. "Secondary Instability of a Temporally-Growing Mixing Layer", *J. Fluid Mech.*, Vol. 184, pp. 207-243.
- Riley, J. J., R. W. Metcalfe, and S. A. Orszag. 1986. "Direct numerical simulations of chemically reacting mixing layers", *Phys. Fluids*, Vol. 29(2), pp. 406-422.
- McMurtry, P. A., W.-H. Jou, J. J. Riley, and R. W. Metcalfe. 1986. "Direct Numerical Simulations of Mixing Layers with Heat Release", *AIAA J.*, Vol. 24, No. 6, p. 962, June.
- Metcalfe, R. W., C. J. Rutland, J. H. Duncan, and J. J. Riley. 1986. "Numerical Simulations of Active Stabilization of Laminar Boundary Layers", *AIAA J.*, Vol. 24, No. 9, p. 1494, September.
- Gore, R. A., C. T. Crowe, T. R. Troutt, and J. J. Riley. 1985. "A Numerical Study of Particle Dispersion in Large-Scale Structures", *Multi-Phase Flow and Heat Transfer*, HTD Vol. 47, Bk. No. 600304.

- Maxey, M. R., and J. J. Riley. 1983. "Equation of Motion for a Small Rigid Sphere in a Nonuniform Flow", *Phys. Fl.*, Vol. 26, March, pp. 883-889.
- Gad-el-Hak, M., R. F. Blackwelder, and J. J. Riley. 1983. "On the Interaction of Compliant Coatings with Boundary Layer Flows", *J. Fluid Mech.*, Vol. 140, pp. 257-280.
- Gad-el-Hak, M., R. F. Blackwelder, and J. J. Riley. 1981. "On the Growth of Turbulent Regions in Laminar Boundary Layers", *J. Fluid Mech.*, Vol. 110, pp. 73-95.
- Riley, J. J., and S. Corrsin. 1974. "The Relation of Turbulent Diffusivities to Lagrangian Velocity Statistics for the Simplest Shear Flow", *J. Geophys. Res.*, Vol. 79, pp. 1768-1771.
- Riley, J. J., and G. S. Patterson, Jr. 1974. "Diffusion Experiments with Numerically Integrated Isotropic Turbulence", *Phys. Fl.*, Vol. 17, pp. 292-297.
- Riley, J. J. 1973. "Relating One-Point Concentration Moments of a Chemical Reactant to the Lagrangian Probability Density", *Phys. Fl.*, Vol. 16, pp. 1161-1162.
- Herring, J. R., J. J. Riley, G. S. Patterson, Jr., and R. H. Kraichnan. 1973. "Growth of Uncertainty in Decaying Isotropic Turbulence", *J. Atmos. Sci.*, Vol. 30, pp. 997-1006.

#### Chapters of Books:

- Riley, J.J., and E. Lindborg. 2013. "Recent Progress in Stratified Turbulence", in *Ten Chapters in Turbulence*, P.A. Davidson, Y. Kaneda, and K. R. Sreenivasan, eds., Cambridge University Press.
- Meneveau, C., and J.J. Riley. 2011. "Stanley Corrsin", in *A Voyage through Turbulence*, P.A. Davidson, Y. Kaneda, K. Moffatt, K.R. Sreenivasan, eds., Cambridge University Press.
- Riley, J. J. 2007. "Intermediate-scale dynamics of the upper troposphere and stratosphere", in *Large-Scale Disasters: Prediction, Control, and Mitigation*, M. Gad-el-Hak, ed., Cambridge University Press.
- de Bruyn Kops, S. M., J. J. Riley, and K. B. Winters. 2004. "Reynolds and Froude number scaling in stably-stratified flows", in *Reynolds Number Scaling in Turbulent Flow*, A. J. Smits (Ed.), Kluwer Academic Publishers.
- Riley, J. J., and M.-P. Lelong. 2000. "Fluid Motions in the presence of strong stable stratification", *Ann. Rev. Fluid Mech.*, (invited article), Vol. 32, pp. 613-657.
- Riley, J. J. 1999. "Turbulent Combustion Modeling", in *Transition, Turbulence and Combustion Modeling*, (invited article) A. Hanifi et al., eds., Kluwer Academic.
- Cook, A. W., and J. J. Riley. 1998. "Progress in subgrid-scale combustion modeling", in *Computational Fluid Dynamics Review 1997*, (invited article) M. Hafez, ed., Wiley.
- Riley, J. J. 1996. "Numerical simulation of variable-density, reacting flows", in *Computational Fluid Dynamics*, (invited article) M. Lesieur, P. Comte and J. Zinn-Justin, eds., Elsevier.
- Métais, O., J. J. Riley, and M. Lesieur. 1993. "Numerical Simulations of Stably-Stratified, Rotating Turbulence", in *Stably-Stratified Flows: Flow & Dispersion over Topography*, I. P. Castro & N. J. Rockliff, eds., Oxford University Press, to appear; also in *Selected Papers from the Ninth Symposium on Turbulent Shear Flows*, Springer-Verlag.



- Riley, J. J., M.-P. Lelong, and D. N. Slinn. 1991. "Organized structures in strongly stratified flows", in *Turbulence and Coherent Structures*, O. Métais and M. Lesieur, eds., Kluwer Academic Publishers.
- Staquet, C., and J. J. Riley. 1989. "A Numerical Study of a Stably-Stratified Mixing Layer", in *Turbulent Shear Flows 6*, Springer-Verlag, pp. 381-397.
- Riley, J. J., and P. A. McMurtry. 1989. "The Use of Direct Numerical Simulation in the Study of Turbulent, Chemically-Reacting Flows", in *Turbulent Reacting Flows, Vol. 2. Structure and Predictive Schemes*, (invited article) ed. by R. Borghi and S. N. B. Murthy, Springer-Verlag, pp. 486-514.
- Riley, J. J., M. Gad-el-Hak, and R. W. Metcalfe. 1988. "Compliant Surfaces", *Ann. Rev. Fluid Mech.*, (invited article) Vol. 20, pp. 393-420.
- Riley, J. J., and M. Gad-el-Hak. 1984. "Some Insights into Transitional and Turbulent Boundary Layers", invited paper for the Conference on Fundamentals in Fluid Mechanics, Northwestern University, June; in *Frontiers in Fluid Mechanics*, ed. by S. H. Davis and J. L. Lumley, Springer-Verlag, pp. 123-155.
- Riley, J. J., R. W. Metcalfe, and M. A. Weissman. 1981. "Direct Numerical Simulations of Homogeneous Turbulence in Density-Stratified Fluids", presented at the Workshop on Nonlinear Properties of Internal Waves, January; in *Nonlinear Properties of Internal Waves*, AIP Conference Proceedings No. 76, ed. by B. J. West, pp. 79-112.
- Weissman, M. A., R. W. Metcalfe, and J. J. Riley. 1981. "Nonlinear Internal Wave Interactions", presented at the Workshop on Nonlinear Properties of Internal Waves, January; in *Nonlinear Properties of Internal Waves*, AIP Conference Proceedings No. 76, ed. by B. J. West, pp. 253-266.
- Riley, J. J., and R. W. Metcalfe. 1980. "Direct Numerical Simulations of the Turbulent Wake of an Axisymmetric Body", *Selected Papers from the 2nd Symposium on Turbulent Shear Flows*, Springer-Verlag, Berlin, pp. 78-93.
- Riley, J. J., and R. W. Metcalfe. 1980. "Direct Numerical Simulations of a Perturbed, Turbulent Mixing Layer", AIAA-80-O274, presented at the 18th Aerospace Sciences Meeting, January, 30 pages.

### Miscellaneous

- Adrian, R. J., C. Meneveau, R. D. Moser and J. J. Riley. 2000. "Final Report on 'Turbulence Measurements for LES' Workshop", available on the World Wide Web at: [www.me.washington.edu/les](http://www.me.washington.edu/les).
- Contributor to the CD-ROM entitled *Leonardo da Vinci*, published by Corbis, Inc., 1996

### Additional

Numerous other papers in the proceedings of meetings, conferences, workshops and symposia; numerous industrial reports

## Other Scholarly Activities

### Invited Seminars

University of Houston, November, 2013  
University of British Columbia, January, 2012  
Okinawa Institute for Science and Technology, July, 2011  
National Center for Atmospheric Research, Boulder, June, 2010.  
University of Texas, Austin, March, 2010.  
Stanford University, March, 2010.  
St. Andrews University, December, 2008.  
Cambridge University, November, 2008.  
Imperial College London, October, 2008.  
Northwestern University, March, 2008.  
University of Notre Dame, March, 2008.  
Illinois Institute of Technology, March, 2008.  
University of Illinois CU, March, 2008.  
Purdue University, March, 2008.  
Washington State University, November, 2007.  
University of Michigan, September, 2007.  
Michigan State University, September, 2007.  
Iowa State University, September, 2007.  
University of Wisconsin, September, 2007.  
University of Minnesota, September, 2007.  
Institut de Recherche sur les Phénomènes Hors Equilibre,  
Marseille, France, July, 2007.  
Institut de Mecanique des Fluides, Toulouse, France, July, 2006  
Northwest Research Associates, Bellevue, Washington, September, 2005  
University of Western Australia, Perth, Australia, June, 2004  
Royal Melbourne Institute of Technology, Melbourne, Australia, June, 2004  
Monash University, Melbourne, Australia, June, 2004  
Curtin University of Technology, Perth Western Australia, May, 2004  
University of Western Australia, Perth, Western Australia, April, 2004  
California Institute of Technology, November, 2003  
Technische Universität Berlin, June, 2003  
Politecnico di Milano, May, 2003  
Institut für Technische Mechanik, RWTH Aachen, May, 2003  
Technische Universität München, April, 2003  
University of Washington, Aeronautics & Astronautics, January, 2003  
Arizona State University, April, 2001  
University of California, San Diego, April, 2001  
Stanford University, March, 2001  
Lawrence Livermore National Laboratory, July, 1999  
California Institute of Technology, January, 1999  
Stanford University, July, 1998

Lawrence Livermore National Laboratory, July, 1998 (2 seminars)  
 Battelle PNNL, August, 1997  
 University of Washington, Civil Engineering, January, 1997  
 Johns Hopkins University, May, 1996  
 University of Maryland, May, 1996  
 University of California, Irvine, April, 1996  
 University of California, San Diego, April, 1996  
 Midwest Lecture Tour: Notre Dame U., Illinois Institute of Technology,  
 U. Illinois, Champagne-Urbana, Purdue U., March, 1996  
 Midwest Lecture Tour: U. Michigan, Michigan St. U., Northwestern U.,  
 U. Minnesota, October, 1995  
 University of Southern California, March, 1995  
 University of Western Australia, Perth, September, 1994  
 University of Sydney, Australia, September, 1994  
 California Institute of Technology, January, 1992  
 University of Southern California, January, 1992  
 Los Alamos National Laboratory, November, 1991  
 Lawrence Livermore National Laboratory, May, 1991  
 Universidad de Zaragoza, Spain, September, 1990  
 Centre National de Recherches Meteorologiques, Toulouse, France,  
 August, 1990  
 École Centrale de Lyon, France, July, 1990  
 Politecnico di Torino, Italy, June, 1990 (2 seminars)  
 Institut de Mécanique de Grenoble, France, May, 1990  
 University of Houston, February, 1990  
 Boeing Commercial Airplane Company, October, 1989  
 Arizona State University, September, 1989  
 University of Arizona, August, 1989  
 Northwest Research Associates, January, 1989  
 Stanford University Series on Turbulence in the Environment,  
 February, 1988  
 Battelle PNNL, December, 1987  
 Arizona State University, October, 1987

### **Invited Presentations at Meetings/Workshops**

Fundamental Aspects of Geophysical Turbulence  
 Nagoya, Japan, March, 2014  
 Los Alamos Ocean Turbulence Conference  
 Santa Fe, NM, June, 2013  
 International Conference on Theoretical and Applied Mechanics  
 Beijing, China, August, 2012  
 Banff International Research Station for Mathematical Innovation and Discovery  
 Banff, Alberta, Canada, May, 2012

European Turbulence Conference, ETC13  
 Warsaw, September, 2011  
 Plenary speaker, Joint Fluids Engineering Conference  
 ASME-JSME-KSME  
 Hamamatsu, Japan, July, 2011  
 Plenary speaker, Annual Meeting of the Division of  
 Fluid Dynamics of the American Physical Society,  
 November, 2010.  
 Keynote speaker, NCAR Geophysical Turbulence Workshop,  
 National Center for Atmospheric Research  
 Boulder, CO, August, 2010  
 Euromech Colloquium on Small-Scale Turbulence,  
 Turin, Italy, October, 2009.  
 Could not attend, health-related issue.  
 International Symposium on Turbulence,  
 Beijing, November, 2009.  
 Could not attend, health-related issue.  
 Plenary Speaker, 12th European Turbulence Conference,  
 Marberg, Germany, September, 2009.  
 Could not attend, health-related issue.  
 Workshop on Inertial Range Dynamics and Mixing,  
 Cambridge, UK, September, 2008.  
 IUTAM Workshop: Rotating Stratified Turbulence and  
 Turbulence in the Atmosphere and Oceans,  
 Cambridge, UK, December, 2008.  
 Keynote speaker, Density Effects in Fluid Dynamics Workshop,  
 Los Alamos National Laboratory, December, 2007  
 Institute for Mathematical Sciences Turbulence Workshop,  
 Imperial College London, March, 2007  
 Keynote speaker, Sedona International Workshop on Stable  
 Atmospheric Boundary Layers, November, 2006  
 Spontaneous Imbalance Workshop, Seattle, August, 2006  
 Keynote speaker, Geophysical Turbulence Workshop,  
 National Center for Atmospheric Research,  
 Boulder, July, 2005  
 LES/SGS Workshop, California Institute of Technology, November, 2003  
 31st AIAA Fluid Dynamics Conference, June, 2001  
 IUTAM 2001, invited session chair and discussion moderator, June  
 ASME Fluids Engineering Summer Meeting, Symposium on the  
 Role of Industry in Developing Fluid Power Generating Systems,  
 May, 2001  
 European Geophysical Society, April, 2000, Nice, France  
 NSF Workshop on Turbulence Measurements for LES, October, 1999  
 Second AFOSR Conference on DNS and LES, June, 1999, Rutgers

Workshop on the Role of DNS in Turbulence Research, March, 1999,  
 University of California, Santa Barbara  
 Mexican Physical Society, Annual Meeting, October, 1998  
 Sandia National Laboratory, June, 1998,  
 DOE Scientific Simulation Initiative Workshop  
 European Summer School on Turbulence, June, 1998, Stockholm  
 (series of lectures)  
 Lawrence Livermore National Laboratory, June, 1997,  
 Workshop on Turbulent Transport and Numerical Modeling  
 Sandia National Laboratory, Combustion Modeling Workshop,  
 September, 1997  
 Los Alamos National Laboratory, June, 1997,  
 Workshop on Turbulence and Transport Modeling  
 Workshop on Computing the Future II, June, 1997  
 National Center for Atmospheric Research, August, 1996,  
 Workshop on Stratified and Rotating Turbulence  
 American Water Resource Association, November, 1996,  
 Annual Meeting  
 American Physical Society, November, 1995  
 48th Meeting of the Division of Fluid Dynamics  
 Los Alamos National Laboratory, May, 1995  
 Nonlinear Phenomena in Ocean Dynamics  
 EUROMECH 339, Internal Waves, Turbulence and Mixing  
 in Stratified Fluids, Lyon, France, September, 1995  
 EUROMECH Course on Computational Fluid Mechanics, Les Houches,  
 France, June, 1993 (series of lectures)  
 Thirteenth Symposium on Turbulence  
 University of Missouri, Rolla, September 1992  
 Los Alamos National Laboratory, Reactive Turbulence Workshop,  
 Center for Nonlinear Studies (2 papers), August, 1992  
 University of Hawaii Workshop on the Dynamics of Oceanic Internal  
 Gravity Waves, January, 1991  
 NASA Langley Research Center/ICASE Combustion Workshop,  
 October, 1989  
 American Meteorology Society, April, 1989  
 Seventh Conference on Atmospheric and Oceanic Waves  
 and Stability  
 American Physical Society, November, 1998  
 41st Meeting of the Division of Fluid Dynamics  
 Brown University/Yale University Free Shear Flows Conference, June, 1988  
 United States-France Joint Workshop on Turbulent Reacting Flows,  
 Rouen, France, July, 1987  
 Symposium on Prospects of Turbulence Research, the National Center for  
 Atmospheric Research, June, 1987

American Institute of Aeronautics and Astronautics  
Fluid Dynamics and Plasma Dynamics Meeting, June, 1987  
Second International Symposium on Stratified Flows, Caltech, January, 1987  
American Meteorology Society, November, 1985  
Seventh Symposium on Turbulence and Diffusion  
Société Francaise de Physique Congres National, Nice, September, 1985  
International Workshop: Puzzles in Free Shear Layers, Brown University,  
November, 1984  
Conference on Fundamentals in Fluid Mechanics, Northwestern University,  
June, 1984

### Additional

Numerous other presentations at meetings, conferences, workshops  
and symposia

### **Additional Educational Activities**

James Riley was involved in the initiation and the NSF oversight of *Multimedia Fluid Mechanics I*, published by Cambridge University Press, a popular DVD-based product for undergraduate education which has been translated into several languages, has received outstanding reviews, and is being used in many universities with great success. He is a coauthor of the second edition, *Multimedia Fluid Mechanics II*, which has recently become available. This edition is now being included in most undergraduate texts books on fluid mechanics. Riley has also been involved in the ‘Partnership for Science and Engineering Practices’, a project supported by the State of Washington’s Office of the Superintendent of Public Instruction. Partnering with Seattle Public Schools, the Renton School District, the University of Washington Colleges of Engineering and of Education, and the Institute for Systems Biology, this project focuses on Professional development to deliver science modules that address teachers’ knowledge of science and engineering content and pedagogy with tools to support planning of and reflection on science and engineering instruction.