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Education: Ph.D., Mechanical Engineering, Stanford University, 1968.

For 36 years he has taught graduate and undergraduate courses on aero/hydrodynamics, heat transfer, turbomachinery, flow turbulence, and instrumentation systems and short courses in the US and Europe on related subjects, such as laser-Doppler anemometry. For the past 36 years **he has designed and constructed laser and hot-wire anemometers**, developed algorithms for signal processing, and developed 3 wind tunnels, including one with an unsteady gust mechanism. Since 1969 he has been principal investigator of over 40 multi-year research projects and responsible for funding of over $13M. He has been a visiting professor at the Max Planck Institut für Strömungsforschung, Göttingen, Germany, the Universität Erlangen-Nürnberg, Germany, and the Stanford-NASA Ames Center for Turbulence Research. In 1996 he was awarded the Virginia Tech College of Engineering Dean's Award for Excellence in Research. In 2005 he was awarded the Virginia Tech College of Engineering Dean's Award for Excellence in Service.

He is a Fellow of the ASME and the AIAA, a Founding Fellow of the Inst. Diagnostic Engrs.(UK), and a member of SNAME and the Naval Submarine League. In addition to many other past activities in the ASME and AIAA, he has been an Associate Editor of the AIAA Journal, AIAA Director-at-Large, AIAA Vice-President for Education, and AIAA Vice-President for Publications. He is currently National AIAA President. He serves on the SNAME H-11 Flow Studies Committee. He has served on several Navy/DARPA Advisory and Review Panels during 1990-94. He holds a SECRET security clearance.

Publications: He is author or co-author of over 200 open literature publications and invited review articles on turbulent flows and their structure, separated flows, flow around buildings, **laser-based technologies,** and several restricted ONR reports on the control of turbulent flows. His publications demonstrate experience that is required for this research: **design of turbulent flow experiments, laser-Doppler anemometry, signal processing, and 3-D and unsteady turbulent separated flows**. Several major related recent publications in chronological order are:

1. B. Chehroudi and R. L. Simpson, "A Rapidly Scanning **Laser Doppler Anemometer**," J. Physics E, Sci. Inst., 17, pp. 131-136, 1984; reprinted in SPIE Milestone Series, Vol.MS 78, *Selected Papers on Laser Doppler Anemometry*, R. J. Adrian, ed., 1994.
2. R. L. Simpson, "Scanning **Laser Anemometry** and Other Techniques for Separated Flows," *Advances in Fluid Mechanics Measurements*, Lecture Notes in Engineering, M. Gad-el-Hak, ed.; Vol. 45, pp. 357-400 Springer-Verlag, 1989.
3. R. L. Simpson, "Turbulent Boundary Layer Separation," Ann. Rev. Fluid Mech., Vol. 21, pp. 205-234, 1989.
4. K.A. Shinpaugh, R. L. Simpson, A.L. Wicks, and J.L. Fleming, "**Signal Processing Techniques for Low Signal-to-Noise Ratio Laser Doppler Velocimeter Signals**," 5th Intl. Symp. in Appl. of Laser Anemometry to Fluid Mechanics, July 9-12, 1990 (with K.A. Shinpaugh, A.L. Wicks, and J.L. Fleming); revised and expanded version, Exp. in Fluids, 12, pp. 319-328, 1992.
5. Chesnakas, C. J. and Simpson, R.L., "**Full three-dimensional LDV measurements** of the cross-flow separation region of a 6:1 prolate spheroid," *Exp. in Fluids*, Vol. 17, pp. 68 - 74, 1994.
6. Ölçmen, S.M. and Simpson, R.L., 1995, "**A 5-velocity-component laser-Doppler velocimeter** for measurements of a three-dimensional turbulent boundary layer," Invited Paper, *Meas. Sci. Tech., 6*, pp. 702 -715. Highlighted in *Aerospace America:* The Year in Review, Fluid Dynamics, pp. 20 - 21, Dec. 1995 issue; also paper 4.2, *7th Intl. Symp. on Appl. of Laser Tech. to Fluid Mechanics*, 11-14, July, 1994, Lisbon, Portugal.
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9. Simpson, R.L., 1996, "Aspects of Turbulent Boundary-Layer Separation," invited review paper, *Progress in Aerospace Sciences, 32*, pp. 457 - 521.
10. Ölçmen, S. M. and Simpson, R.L., 1996a, "Experimental Transport-rate Budgets in Complex Three-dimensional Turbulent Flows at a Wing/Body Junction," paper AIAA-96-2035, *27th AIAA Fluid Dynamics Conference*, New Orleans, LA, June 17 - 20.

11. Ölçmen, S. M. and Simpson, R.L., 1996b, "Theoretical and Experimental Pressure-strain Comparison in a Pressure-driven Three-dimensional Turbulent Boundary Layer," paper AIAA-96-2141, *1st AIAA Theoretical Fluid Mechanics Meeting*, New Orleans, LA, June 17-20.
12. Chesnakas, C.J. and Simpson, R.L. 1997 ADetailed Investigation of the Three-Dimensional Separation About a 6:1 Prolate Spheroid, *AIAA Journal*, Vol. 35, no. 6, pp. 990 - 999.
13. Ölçmen, S.M., Simpson, R.L. and Goody, M. 1998 AAn Experimental Investigation of Two-Point Correlations in Two- and Three-Dimensional Turbulent Boundary Layers,@ AIAA-98-0427, *36th AIAA Aerospace Sciences Meeting and Exhibit*, Jan. 12-15.
14. Ölçmen, S.M., Simpson, R.L. 1997, "Experimental Evaluation of Turbulent Diffusion Models in Complex 3-D Flow Near a Wing/Body Junction," AIAA-97-0650, *35th AIAA Aerospace Sci. Meeting*, Jan. 6-10.
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23. George, J. and Simpson, R.L. 2003 "Roughness Effects on Turbulent Boundary Layers - Contributions to a Conceptual Model," AIAA-2003-0644, *41th AIAA Aerospace Sciences Meeting and Exhibit*, Jan. 6-9.
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27. Byun, G., Olcmen, S.M., and Simpson, R.L. 2004 "**A Three-velocity-component Sub-miniature Laser-Doppler Velocimeter for Measurement of a Turbulent Boundary Layer**," ***Meas Sc. Tech.*** (15), p. 2075.
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29. Lowe, K.T. and Simpson, R.L., 2006 "**Measurements of velocity-acceleration statistics in turbulent boundary layers**," ***Int. J. Heat Fluid Flow***, Vol. 27, No. 4, pp. 558-565, 2006.
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