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Director, Structural Dynamics Research Lab*

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<i>Ph.D.</i>	<i>1980</i>	<i>University of Cincinnati</i>
<i>MS</i>	<i>1973</i>	<i>University of Cincinnati</i>
<i>BSME</i>	<i>1972</i>	<i>University of Cincinnati</i>

PROFESSIONAL AND SOCIETY AFFILIATIONS

*American Society of Mechanical Engineers (ASME), Member
American Society of Engineering Education (ASEE), Member
Society of Automotive Engineers (SAE), Member
Society of Experimental Mechanics (SEM), Member
Ohio Society of Professional Engineers (EIT)
Omicron Delta Kappa (ODK), Member
Sigma Xi, Member
Pi Tau Sigma
Tau Beta Pi*

FIELDS OF SPECIAL INTEREST

*Experimental Modal Analysis, Experimental System Identification
Multiple Input/Output System Analysis, Nonlinear System Identification
Signal Processing Techniques - Vibration Testing*

EXPERIENCE

<i>1989-Present</i>	<i>University of Cincinnati, Professor</i>
<i>1984-1989</i>	<i>University of Cincinnati, Associate Professor</i>
<i>1982-1984</i>	<i>University of Cincinnati, Assistant Professor</i>
<i>1981-1982</i>	<i>University of Cincinnati, Research Assistant Professor</i>

1978-1981 University of Cincinnati, Research Associate
 1975-1978 University of Cincinnati, Instructor
 1973-1975 University of Cincinnati, Research Assistant
 1972-1973 University of Cincinnati, Teaching Assistant
 1968-1971 Abex Corporation, Dennison Research Center, Co-op Engineer

TECHNICAL ACTIVITIES

Site Reviewer National Science Foundation, Division of Civil and Mechanical Systems, Network for Earthquake Engineering Simulation (NEES) Program, (2001-2002,2007)

Editorial Board **Experimental Mechanics**, International Advisory Board, Society of Experimental Mechanics (2007-Present),

Advisory Board International Modal Analysis Conference (1982-Present), **Chairman (1987-1995)**

Contributing Editor Sound and Vibration Magazine (1983-Present)

Executive Board Society of Experimental Mechanics (1998-2006) **President (2003-2004)**

Associate Editor Journal of Mechanical Systems and Signal Processing (1997-2000)

Technical Editor Modal Analysis: The International Journal of Analytical and Experimental Modal Analysis (1995-1996)

Editorial Board Journal of Mechanical Systems and Signal Processing (1985-1995)

Associate Editor ASME, Journal of Vibrations, Acoustics, Stress, and Reliability in Design (1986-1988)

Panel Reviewer National Science Foundation, Division of Civil and Mechanical Systems, Faculty Early Career Development Program, (1998)

Panel Reviewer National Science Foundation, Dynamic Systems and Control Program, (1993)

Reviewer NASA, Johnson Space Center (1995)

Session Chairman SEM International Modal Analysis Conference (1981-Present)

Session Chairman KUL International Conference on Noise and Vibration Engineering (1978-Present)

Reviewer Journal of Sound and Vibration (1995-Present)

Reviewer AIAA Journal (1990-Present)

Reviewer ASME, Journal of Vibration and Acoustics (1988-Present)

Reviewer Acoustic Society of America (1988-Present)

Session Chairman SAE Noise and Vibration Conference (1995,1997,1999,2001)

RPT Reviewer University of Kentucky (1994)

RPT Reviewer University of Iowa (1994)

RPT Reviewer Penn State University (1987,1993,1999)

RPT Reviewer Naval Postgraduate School (1996)

RPT Reviewer Purdue University (1997)

RPT Reviewer Penn State University (1999)

RPT Reviewer University of Illinois at Chicago (1999)

RESEARCH ACTIVITIES

<i>2005-2007</i>	<i>The Ford Motor Company</i>
<i>1991-2007</i>	<i>The Boeing Company</i>
<i>2006-2007</i>	<i>Agilent</i>
<i>2004-2006</i>	<i>Bruel & Kjaer</i>
<i>2004-2005</i>	<i>General Dynamics</i>
<i>2002-2003</i>	<i>The Goodyear Company</i>
<i>1995-1996, 1999</i>	<i>Procter & Gamble</i>
<i>1996-1999</i>	<i>Akebono BSEC</i>
<i>1992-1995</i>	<i>Cincinnati Milacron</i>
<i>1992-1994</i>	<i>NASA-Ames Research Center</i>
<i>1991-1993</i>	<i>General Motors Corporation, Cadillac Motor Car Division</i>
<i>1989-1991</i>	<i>NASA-Langley Research Center</i>
<i>1987-1990</i>	<i>Technical Science Services, Inc.</i>
<i>1983-1988</i>	<i>USAF/Wright-Patterson Flight Dynamics Laboratory</i>
<i>1985-1986</i>	<i>Navistar International</i>
<i>1981-1986</i>	<i>General Motors Corporation, CPC Division</i>
<i>1980-1985</i>	<i>USAF/Eglin Structural Dynamics Laboratory</i>
<i>1983-1984</i>	<i>U.S. Naval Research Laboratory</i>
<i>1978-1981</i>	<i>NASA-Langley Research Center</i>
<i>1978-1980</i>	<i>The Boeing Company</i>
<i>1975, 1979</i>	<i>NASA-Lewis Research Center</i>
<i>1977</i>	<i>Rockwell International, Columbus Aircraft Division</i>
<i>1975-1977</i>	<i>Hewlett Packard Company</i>
<i>1976</i>	<i>Rockwell International, Rocketdyne Division</i>
<i>1976</i>	<i>Allis Chalmers, Hydro Turbine Division</i>

PUBLICATIONS AND PAPERS

- "An Overview of Excitation, Averaging and Processing Issues for Nonlinear System Identification", Spottswood, S.M., Allemang, R.J., **Mechanical Systems and Signal Processing**, April, 2007 (Submitted).
- "On the Investigation of Some Parameter Identification and Experimental Modal Filtering Issues for Nonlinear Reduced Order Models", Spottswood, S.M., Allemang, R.J., **Experimental Mechanics**, April, 2007 (On-Line).
- "Unified Matrix Polynomial Approach for Operational Modal Analysis", Chauhan S., Martell, R., , Allemang, R.J., Brown, D.L., *Proceedings, International Modal Analysis Conference*, 13 pp., 2007.
- "Application of Independent Component Analysis and Blind Source Separation Techniques to Operational Modal Analysis", Chauhan S., Martell, R., , Allemang, R.J., Brown, D.L., *Proceedings, International Modal Analysis Conference*, 13 pp., 2007.
- "Implementation of Complex Frequency Mapping to Low Order Frequency Domain Algorithm for Operational Modal Analysis", Chauhan S., Martell, R., , Allemang, R.J., Brown, D.L., *Proceedings, International Modal Analysis Conference*, 12 pp., 2007.
- "Structural Dynamics Education at the University of Cincinnati", Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 18 pp., 2007.
- "The Modern Era of Experimental Modal Analysis: One Historical Perspective", Brown, D.L., Allemang, R.J., **Sound and Vibration Magazine**, Vol. 40, No. 1, 10 pp., January, 2007.
- "A Complete Review of the Complex Mode Indicator Function (CMIF) with Applications", Allemang, R.J., Brown, D.L., *Proceedings, International Conference on Noise and Vibration Engineering, Katholieke Universiteit Leuven, Belgium*, 38 pp., 2006.
- Chauhan S., Martell, R., Brown, D.L., Allemang, R.J. "Considerations in the Application of Spatial Domain Algorithms to Operational Modal Analysis", *Proceedings, International Conference on Noise and Vibration Engineering, Katholieke Universiteit Leuven, Belgium*, 16 pp., 2006.
- Chauhan S., Martell, R., Brown, D.L., Allemang, R.J. "A Low Order Frequency Domain Algorithm for Operational Modal Analysis", *Proceedings, International Conference on Noise and Vibration Engineering, Katholieke Universiteit Leuven, Belgium*, 14 pp., 2006.
- "Initial evaluation of a Novel Active/Passive Structural Neural System for Health Monitoring of Composite Materials", G.R.Kirikera, J.W.Lee, M.J.Schulz, A.Ghoshal, M.J. Sundaresan, R.Allemang, V.Shanov, B.Westheider, **Journal of Smart Materials and Structures**, Vol. ?, No. ?, xx pp., 2006 (Accepted for Publication).
- "Damage Localisation in Composite and Metallic Structures Using a Structural Neural System and Simulated Acoustic Emissions", Kirikera, G.R., Shinde, V., Schulz, M.J., Ghoshal, A., Sundaresan, M. and Allemang, R.J., **Mechanical Systems and Signal Processing**, Vol. ?, No. ?, xx pp., 2006 (Accepted for Publication).
- "Identification of Nonlinear Parameters for Reduced Order Models", Spottswood, S.M., Allemang, R.J., **Journal of Sound and Vibration**, Vol. 295, pp. 226-245., 2006.

- "Identifying nonlinear parameters for reduced order models", Spottswood, S.M., Allemang, R.J., *Proceedings of the Ninth International Conference on Recent Advances in Structural Dynamics*, Southampton, UK, July 2006.
- "Identifying Nonlinear Parameters for Reduced Order Models. Part I: An Analytical Comparison", Spottswood, S.M., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 11 pp., 2006.
- "Identifying Nonlinear Parameters for Reduced Order Models. Part II, Validation using Experimental Data", Spottswood, S.M., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 11 pp., 2006.
- "New Concepts GVT", Pickrel, C.R., Foss, G.C., Phillips, A.W., Allemang, R.J., Brown, D.L., *Proceedings, International Modal Analysis Conference*, 11 pp., 2006.
- "Extension of Traditional Modal Analysis Algorithms to Ambient Testing Using UMPA", Chauhan, S., Martell, R., Brown, D.L., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 11 pp., 2006.
- "A First Order, Extended State Vector Expansion Approach to Experimental Modal Parameter Estimation", Brown, D.L., Phillips, A.W., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 11 pp., 2005.
- "Data Presentation Schemes for Selection and Identification of Modal Parameters", Phillips, A.W., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 10 pp., 2005.
- "The Unified Matrix Polynomial Approach to Understanding Modal Parameter Estimation: An Update", Allemang, R.J., Phillips, A.W., *Proceedings, International Conference on Noise and Vibration Engineering*, Katholieke Universiteit Leuven, Belgium, 36 pp., 2004.
- "Observations Concerning Modern Modal Parameter Estimation", Brown, D.L., Allemang, R.J., *Proceedings, International Conference on Noise and Vibration Engineering*, Katholieke Universiteit Leuven, Belgium, 16 pp., 2004.
- "A Low Order Implementation of the Polyreference Least Squares Complex Frequency (LSCF) Algorithm", Phillips, A.W., Allemang, R.J., *Proceedings, International Conference on Noise and Vibration Engineering*, Katholieke Universiteit Leuven, Belgium, 28 pp., 2004.
- "The Impact of Measurement Condensation and Modal Participation Vector Normalization on the Estimation of Modal Vectors and Scaling", Allemang, R.J., Phillips, A.W., *Proceedings, International Modal Analysis Conference*, 12 pp., 2004.
- "A Magnetorheological Semi-active Isolator to Reduce Noise and Vibration Transmissibility in Automobiles", Stelzer, G.J., Schultz, M.J., Kim, J., Allemang, R.J., **Journal of Intelligent Material Systems and Structures**, Vol. 14, No. 12, pp. 743-765, 2003.
- "Application of a Generalized Residual Model to Frequency Domain Modal Parameter Estimation", Fladung, W.A., Phillips, A.W., Allemang, R.J., *India-US 2001 Symposium, Emerging Trends in Vibration and Noise Engineering*, 15 pp., 2001. **Journal of Sound and Vibration**, Vol. 262, No. 3, pp. 677-705, 2003.
- "An Overview of MIMO-FRF Excitation/Averaging/Processing Techniques", Phillips, A.W., Allemang, R.J., *India-US 2001 Symposium, Emerging Trends in Vibration and Noise Engineering*, 17 pp., 2001. **Journal of Sound and Vibration**, Vol. 262, No. 3, pp. 651-675,

2003.

- "The Modal Assurance Criterion (MAC): Twenty Years of Use and Abuse", Allemang, R.J., *Proceedings, International Modal Analysis Conference*, pp. 397-405, 2002. **Sound and Vibration Magazine**, Vol. 37, No. 8, pp. 14-23, August, 2003.
- "Chapter 21: Experimental Modal Analysis", **Shock and Vibration Handbook, Fifth Edition**, Harris, C.M., Crede, C.E., Piersol, A.G. (Editors), Allemang, R.J., Brown, D.L., McGraw-Hill Book Company, 2002.
- "Acoustic Intensity Measurement of Road Simulator Hydraulic Actuator", Frenz, E.R., Allemang, R.J., Dumbacher, S. *Proceedings, International Modal Analysis Conference*, 7 pp., 2001.
- "Some Insights into the Mixed Modes of Rotors", Dias, M., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 7 pp., 2001.
- "Discrete Frequency Models: A New Approach to Temporal Analysis", Adams, D. E. and Allemang, R. J., **ASME Journal of Vibration and Acoustics**, Vol. 123, pp. 98-103, 2001.
- "Subtleties in Nonlinear Structural Dynamic System Identification", Adams, D.E., Allemang, R.J., *Proceedings, Eighth Conference on Nonlinear Vibrations, Stability and Dynamics of Structures, Blacksburg, Virginia*, 12 pp., 2000.
- "Spatial Truncation in Models of Nonlinear Structural Dynamics Systems", Adams, D.E., Allemang, R.J., Phillips, A.W., Wynn, R.H., **Journal of Sound and Vibration**, Vol. 237, No. 1 pp.145-161, October 2000.
- "Residual Frequency Autocorrelation as an Indicator of Nonlinearity", Adams, D.E., Allemang, R.J., **International Journal of Non-Linear Mechanics**, 16 pp., 2000.
- "Polynomial, Non-Polynomial and Orthogonal Polynomial Generating Functions for Nonlinear System Identification", Adams, D.E., Allemang, R., *Proceedings, International Conference on Noise and Vibration Engineering, Katholieke Universiteit Leuven, Belgium*, pp. 665-670, 2000.
- "Noise Source Evaluation Testing on MTS Series 320 Road Simulator", Frenz, E., Dumbacher, S., Allemang, R., Mergeay, M., *Proceedings, International Conference on Noise and Vibration Engineering, Katholieke Universiteit Leuven, Belgium*, 7 pp., 2000.
- "A New Detection Method for Structural Non-Linearities", Roscher, T., Allemang, R., Phillips, A.W., *Proceedings, International Conference on Noise and Vibration Engineering, Katholieke Universiteit Leuven, Belgium*, 8 pp., 2000.
- "A Frequency Domain Method for Estimating the Parameters of a Nonlinear Structural Dynamic Model through Feedback", Adams, D.E., Allemang, R.J., **Mechanical Systems and Signal Processing**, Vol. 14, No. 4, pp. 637-656, 2000.
- "Introduction of a General User Excitation Source Signal for Modal Testing", Fladung, W.A., Phillips, A.W., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 7 pp., 2000.
- "Evaluation of Tire-Ground Boundary Conditions and the Effects on FRF Measurements", Frenz, E.R., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 5 pp., 2000.

- "A Superposition Principle for Nonlinear Systems", Adams, D.E., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, pp. 702-710, 2000.
- "New Spatial MDOF Characterization and Identification Techniques for Nonlinear Systems", Adams, D.E., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, pp. 725-732, 2000.
- "A New Derivation of the Frequency Response Function Matrix for Vibrating Nonlinear Systems", Adams, D.E., Allemang, R.J., **Journal of Sound and Vibration**, Volume 227, Number 5, pp. 1083-1108, 1999.
- "Characterization of Nonlinear Vibrating Systems Using Internal Feedback and Frequency Response Modulation", Adams, D.E., Allemang, R.J., **ASME Journal of Vibration and Acoustics**, Volume 121, Number 4, pp. 495-500, 1999.
- "Demonstration of Multiple Degree of Freedom Nonlinear System Identification Using Time and Frequency Domain Methods", Adams, D.E., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, pp. 315-322, 1999.
- "Application of Differencing to Frequency Domain Parameter Estimation Algorithms", Dahling, T.M., Allemang, R.J., Phillips, A.W., *Proceedings, International Modal Analysis Conference*, 8 pp., 1999.
- "Using Cyclic Averaging with Impact Testing", William A. Fladung, Andrew T. Zucker, Allyn W. Phillips, Randall J. Allemang *Proceedings, International Modal Analysis Conference*, 7 pp., 1999.
- "Frequency Resolution Effects on FRF Estimation: Cyclic Averaging vs. Large Block Size", Allyn W. Phillips, Andrew T. Zucker, Randall J. Allemang *Proceedings, International Modal Analysis Conference*, 4 pp., 1999.
- "A Spatial Method of Characterizing Nonlinearities in Multiple Degree of Freedom Vibrating Systems", Adams, D.E., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, pp. 1195-1202, 1999.
- "A Comparison of MIMO-FRF Excitation/Averaging Techniques on Heavily and Lightly Damped Structures", Phillips, A.W., Zucker, A.T., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 10 pp., 1999.
- "Survey of Nonlinear Detection and Identification Techniques for Experimental Vibrations", Adams, D.E., Allemang, R.J., *Proceedings, International Conference on Noise and Vibration Engineering*, Vol. 1, Katholieke Universiteit Leuven, Belgium, pp. 269-281, 1998.
- "The Enhanced Frequency Response Function (eFRF): Scaling and Other Issues", Phillips, A.W., Allemang, R.J., *Proceedings, International Conference on Noise and Vibration Engineering*, Volume 1, Katholieke Universiteit Leuven, Belgium, 8 pp., 1998.
- "An Overview of MIMO-FRF Excitation/Averaging Techniques", Phillips, A.W., Allemang, R.J., Zucker, A.T., *Proceedings, International Conference on Noise and Vibration Engineering*, Volume 1, Katholieke Universiteit Leuven, Belgium, 12 pp., 1998.
- "A Unified Matrix Polynomial Approach to Modal Identification", Allemang, R.J., Brown, D.L., **Journal of Sound and Vibration**, Volume 211, Number 3, pp. 301-322, April 1998.
- "Estimating Modal Parameters from Different Solution Sets", Phillips, A.W., Allemang, R.J., Pickrel, C.R., *Proceedings, International Modal Analysis Conference*, 10 pp., 1998.

- "A new Excitation Method: Combining Burst Random Excitation with Cyclic Averaging", Phillips, A.W., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 10 pp., 1998.
- "The Complex Mode Indicator Function (CMIF) as a Parameter Estimation Method", Phillips, A.W., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 10 pp., 1998.
- "Virtual Measurements in Experimental Modal Analysis", Allemang, R.J., *Proceedings, Brazilian Congress of Engineering Mechanics*, 14 pp., 1997.
- "Estimating Modal Parameters from Different Solution Sets", Phillips, A.W., Allemang, R.J., *Proceedings, Japan International Modal Analysis Conference*, pp. 207-215, 1997.
- "Clustering of Modal Frequency Estimates from Different Solution Sets", Phillips, A.W., Allemang, R.J., Pickrel, C.R., *Proceedings, International Modal Analysis Conference*, pp. 1053-1063, 1997.
- "Condensation of the Spatial Domain in Modal Parameter Estimation", Dippery, K.D., Phillips, A.W., Allemang, R.J., **Modal Analysis: International Journal of Analytical and Experimental Modal Analysis**, Volume 11, Number 3/4, 6 pp., 1996.
- "Spectral Decimation in Low Order Frequency Domain Modal Parameter Estimation", Dippery, K.D., Phillips, A.W., Allemang, R.J., **Modal Analysis: International Journal of Analytical and Experimental Modal Analysis**, Volume 11, Number 3/4, 5 pp., 1996.
- "Numerical Considerations in Modal Parameter Estimation", Phillips, A.W., Allemang, R.J., *Proceedings, International Seminar on Modal Analysis, Katholieke Universiteit Leuven, Belgium*, 10 pp., 1996.
- "A Unified Matrix Polynomial Approach to Modal Identification", Allemang, R.J., Brown, D.L., *Proceedings, Indo-US Symposium on Emerging Trends in Vibration and Noise Engineering, IIT Dehli, India, Allied Publishers Limited*, pp. 379-390, March 1996.
- "Utilizing the Modal Assurance Criterion (MAC) in the Detection of Repeated Roots", Phillips, A.W., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 6 pp., 1996.
- "Single Degree-of-Freedom Modal Parameter Estimation Methods", Phillips, A.W., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 9 pp., 1996.
- "Cyclic Averaging for Frequency Response Function Estimation", Allemang, R.J., Phillips, A.W., *Proceedings, International Modal Analysis Conference*, pp. 415-422, 1996.
- "Chapter 21: Experimental Modal Analysis", **Shock and Vibration Handbook, Fourth Edition**, Harris, C.M., Crede, C.E. (Editors), Allemang, R.J., Brown, D.L., McGraw-Hill Book Company, 1995.
- "Estimation of Rigid Body Frequency Response Function Matrices via Redundant Perimeter Reference Measurements", Adams, D.E., Brown, D.L., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 10 pp., 1995.
- "A Test Analysis Matrix (TAM) with Improved Dynamic Characteristics", Bhatia, S.S., Allemang, R.J., *Proceedings, International Modal Analysis Conference*, 8 pp., 1995.

- "An Investigation of Online Vibration Parameter Estimation Schemes", Shelley, S.J., Allemang, R.J., NASA-Ames University Consortium, Number NCA2-734, 1994, 94 pp.
- "Direct Updating Based on Modal Filter Vectors", Wei, J.C., Allemang, R.J., Luk, Y.W., Proceedings, International Modal Analysis Conference, pp. 219-224, 1994.
- "Modal Parameter Estimation: A Unified Matrix Polynomial Approach", Allemang, R.J., Brown, D.L., Fladung, W., Proceedings, International Modal Analysis Conference, pp. 501-514, 1994.
- "Condensation of the Spatial Domain in Modal Parameter Estimation", Dippery, K.D., Phillips, A.W., Allemang, R.J., Proceedings, International Modal Analysis Conference, pp. 818-824, 1994.
- "Spectral Decimation in Low Order Frequency Domain Modal Parameter Estimation", Dippery, K.D., Phillips, A.W., Allemang, R.J., Proceedings, International Modal Analysis Conference, pp. 839-843, 1994.
- "Active Control of Vibration in Civil Engineering Structures", Shelley, S.J., Brown, D.L., Allemang, R.J., Aktan, A.E., Proceedings, International Modal Analysis Conference, pp. 1121-1127, 1994.
- "Chapter 16: Experimental Modal Analysis", **Handbook on Experimental Mechanics, Second Edition**, Kobayashi, A.S. (Editor), Allemang, R.J., Brown, D.L., Prentice Hall, 1994.
- "Trends in Modal Identification", Proceedings, Korea-U.S. Vibration Engineering Seminar, U.S. National Science Foundation, Korea Science and Engineering Foundation, pp. 1-26, 1993.
- "Modal Analysis - Where Do We Go From Here?", Allemang, R.J., **Modal Analysis: The International Journal of Analytical and Experimental Modal Analysis**, Volume 8, Number 2, pp. 79-91, 1993.
- "Modal Analysis - Where Do We Go From Here?", Allemang, R.J., Proceedings, International Modal Analysis Conference, (Keynote Address) 10 pp., 1993.
- "Active Vibration Control Utilizing an Adaptive Modal Filter Based Modal Control Method", Shelley, S.J., Allemang, R.J., Slater, G.L., Schultze, J.F., Proceedings, International Modal Analysis Conference, pp. 751-758, 1993.
- "Development of an On-Line Modal State Monitor", Shelley, S.J., Freudinger, L.C., Allemang, R.J., Proceedings, International Modal Analysis Conference, pp. 606-612, 1993.
- "Structural Dynamic Testing and Instrumentation", Allemang, R.J., Brown, D.L., **Flight Vehicle Materials, Structures and Dynamics - Assessment and Future Directions, Volume 5**, A.K. Noor, S.L. Venneri, Editors, ASME Publication I00326, 60 pp., 1993.
- "Improved Estimation of Modal Vector Scaling Using the Enhanced Frequency Response Function", Wang, W., Allemang, R.J., Brown, D.L., **Mechanical Systems and Signal Processing**, Academic Press, Volume 6, Number 3, pp. 251-260, 1992.
- "Unbiased Estimation of Operating Shapes" Pan, J., Allemang, R.J., Vold, H., **Mechanical Systems and Signal Processing**, Academic Press, Volume 6, Number 3, pp. 275-285 pp., 1992.

- "Active Vibration Control Utilizing a Discrete Modal Filter Based Control Technique", Shelley, S.J., Schultz, J.F., Rost, R.W., Allemang, R.J., Proceedings, 17th International Seminar on Modal Analysis, Katholieke Universiteit Leuven, Belgium, pp. 1747-1762, 1992.
- "Calculation of Discrete Modal Filters Using the Modified Reciprocal Modal Vector Method", Shelley, S.J., Allemang, R.J., Proceedings, International Modal Analysis Conference, pp. 37-45, 1992.
- "Development of an On-line Parameter Estimation System Using the Discrete Modal Filter", Shelley, S.J., Freudinger, L.C., Allemang, R.J., Proceedings, International Modal Analysis Conference, pp. 173-183, 1992.
- "Damping Matrix Estimation from Experimental and Analytical Data for Linking Analysis and Test", Wei, J.C., Luk, Y.W., Allemang, R.J., Proceedings, International Modal Analysis Conference, pp. 625-631, 1992.
- "A Practical Application of Operating Shapes", Pan, J., Vold, H., Allemang, R.J., Proceedings, International Modal Analysis Conference, pp. 1352-1358, 1992.
- "Active Damping Design of Flexible Structures Based on SISO and SIMO Non-Collocated Sensor-Actuator Velocity Feedback", Zhang, Q., Shelley, S., Allemang, R.J., **ASME, Journal of Dynamic Systems, Measurement and Control**, Volume 113, Number 2, pp. 259-266 pp., 1991
- "Modal Data Formats for Data Transfer: Standardization" Allemang, R.J., Proceedings, International Modal Analysis Conference, pp. 1407-1409, 1991.
- "An Application of Unbiased Estimation of Operating Shapes", Pan, J., Vold, H., Allemang, R.J., Proceedings, International Modal Analysis Conference, pp. 226-232, 1991. Proceedings, Florence Modal Analysis Conference pp. 191-206, 1991.
- "Implementation of a Modal Filter on a Five Meter Truss Structure", Shelley, S.J., Freudinger, L., Allemang, R.J., Zhang, Q., Proceedings, International Modal Analysis Conference, pp. 1036-1044, 1991.
- "Practical Experience with Identification of Large Flexible Structures", Allemang, R.J., Shelley, S.J., Brown, D.L., Zhang, Q., **Proceedings, 1990 American Control Conference**, IEEE Catalog Number 90CH2896-9, Volume 2 of 3, 1990, pp. 1441-1444.
- "System Identification for Controls: A Modal Analysis Perspective", Allemang, R.J., Proceedings, 15th International Seminar on Modal Analysis, Katholieke Universiteit Leuven, Belgium, 22 pp., 1990. (Keynote Address)
- "Experience with Experimentally Modeling Structure-Actuator-Sensor Systems for Control Design", Shelley, S.J., Allemang, R.J., Proceedings, 15th International Seminar on Modal Analysis, Katholieke Universiteit Leuven, Belgium, 15 pp., 1990.
- "Model Correlation and Orthogonality Criteria Based Upon Reciprocal Modal Vectors", Wei, J.J.C., Allemang, R.J., Wang, W., Proceedings, 15th International Seminar on Modal Analysis, Katholieke Universiteit Leuven, Belgium, 10 pp., 1990.
- "Improved Estimation of Modal Vector Scaling Using the Enhanced Frequency Response Function", Wang, W., Allemang, R.J., Brown, D.L., Proceedings, 15th International Seminar on Modal Analysis, Katholieke Universiteit Leuven, Belgium, 15 pp., 1990.

- "Unbiased Estimation of the Operating Shapes" Pan, J., Vold, H., Allemang, R.J., *Proceedings, 15th International Seminar on Modal Analysis, Katholieke Universiteit Leuven, Belgium, 8 pp., 1990.*
- "Suppression of Undesired Inputs of Linear Systems by Eigenspace Assignment", Zhang, Q., Slater, G., Allemang, R.J., **AIAA, Journal of Guidance, Control, and Dynamics**, Volume 13, Number 2, March/April, 1990, pp. 330-336.
- "Video Sensing in Data Acquisition Systems" Rediers, B., Allemang, R., Carl, E., Greaves, J.O.B., **Sound and Vibration**, Volume 24, Number 1, pp. 6-14, January, 1990.
- "Optimization of Structural Redesign with Dynamic Constraints", Wang, Weicherng, Zhang, Qiang, Allemang, R.J., Brown, D.L., *Proceedings, International Modal Analysis Conference*, pp. 946-953, 1990.
- "Modal Filter: Concept and Applications", Zhang, Qiang, Allemang, R.J., Brown, D.L., *Proceedings, International Modal Analysis Conference*, pp. 487-496, 1990.
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- "A Comparison Between Monophase and Complex Representation of Operating Shapes", Pan, J., Shih, C.Y., Allemang, R., *Proceedings, International Modal Analysis Conference*, pp. 790-796, 1989.
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- "Multiple Input Experimental Modal Analysis" Allemang, R.J., Brown, D.L., *Society for Experimental Stress Analysis, Fall Technical Meeting, Salt Lake City, Utah*, 19 pp., 1983.
- "Multiple Input Estimation of Frequency Response Functions: Excitation Considerations", R.J. Allemang, R.W. Rost, D.L. Brown, *ASME Paper Number 83-DET-73*.
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- "Improved Parameter Estimation Techniques for Experimental Modal Analysis", R.D. Zimmerman, D.L. Brown, R.J. Allemang, *Final Report: NASA Grant NSG-1486, NASA-Langley Research Center*, 23 pp., 1982
- "A Correlation Coefficient for Modal Vector Analysis", R.J. Allemang, D.L. Brown, *Proceedings, International Modal Analysis Conference*, pp.110-116, 1982.
- "Dual Input Estimation of Frequency Response Functions for Experimental Modal Analysis of Aircraft Structures", R.J. Allemang, R.W. Rost, D.L. Brown, *Proceedings, International Modal Analysis Conference*, pp.333-340, 1982.
- "Application of Dual Input Excitation Techniques to the Modal Testing of Commercial Aircraft", G.D. Carbon, D.L. Brown, R.J. Allemang, *Proceedings, International Modal Analysis Conference*, pp.559-565, 1982.
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- "Determining Structural Characteristics from Response Measurements", R.J. Allemang, D.L. Brown, R.D. Zimmerman, University of Cincinnati, College of Engineering, Research Annals, Volume 82, Number MIE-110, 39 pp., 1982.
- "Techniques for Reducing Noise in Frequency Response Function Measurements", R.J. Allemang, D.L. Brown, R.D. Zimmerman, University of Cincinnati, College of Engineering, Research Annals, Volume 82, Number MIE-112, 56 pp., 1982.
- "Using Dual Input Random Excitation Experimental Modal Analysis", R.J. Allemang, et al, University of Cincinnati, College of Engineering, Research Annals, Volume 82, Number MIE-113, 171 pp., 1982.
- "Investigation of Some Multiple Input/Output Frequency Response Function Experimental Modal Analysis Techniques", R.J. Allemang, Doctor of Philosophy Dissertation, University of Cincinnati, Mechanical Engineering Department, 1980, 358 pp.
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- "Using Modal Techniques to Guide Acoustic Signature Analysis", R.J. Allemang, W.R. Shapton, SAE Paper Number 780106, **SAE Transactions**, Volume 87, 1978.
- "Acoustic Modal Analysis for Crack Detection in Powdered Metal Parts", W.R. Shapton, R.J. Allemang, SAE Paper Number 770028.
- "Peripheral Nerve Decoding", I.E. Morse, C.P. Olinger, P.M. Flanagan, R.J. Allemang, W.E. Harrison, University of Cincinnati, First Biomedical Engineering Symposium, May 22, 1976.
- "Dynamic Characteristics of Rotating and Non-Rotating Machine Tool Spindles", R.J. Allemang, T. Graef, C.D. Powell, ASME Paper Number 73-DET-29, **ASME Transactions, Journal of Engineering for Industry**, Vol. 96, Series B, No. 1, pp. 343-347, 1974.

GRANTS AND CONTRACTS

- *Squeak and Rattle Analysis"*
The Ford Motor Company, University Research Grant, 2007, \$40,000
Principal Investigator
- *Squeak and Rattle Analysis"*
The Ford Motor Company, University Research Grant, 2006, \$40,000
Principal Investigator
- *"Structural Analysis Software Development: XMODAL 2.0, Experimental Modal Analysis"*
The Boeing Company, 2006, \$30,000
Co-Principal Investigator (w/ Allyn Phillips)
- *"Structural Analysis Software Development: XMODAL 2.0, Flutter Analysis"*
The Boeing Company, 2005, \$30,000
Co-Principal Investigator (w/ Allyn Phillips)
- *"Shock/Vibration Testing of Penetrator: Phase I"*
General Dynamics, 2004, \$30,000
Principal Investigator
- *"Structural Analysis Software Development: XMODAL 2.0, Experimental Modal Analysis"*
The Boeing Company, 2004, \$75,000
Co-Principal Investigator (w/ Allyn Phillips)
- *"Structural Analysis Software Development: XMODAL 2.0, Experimental Modal Analysis"*
The Boeing Company, 2003, \$90,000
Co-Principal Investigator (w/ Allyn Phillips)
- *"NVH Feasibility Study: Experimental Modal and Impedance Modeling Evaluation of Automotive Structures"*
The Goodyear Tire and Rubber Company, 2002-2003, \$75,229
Principal Investigator
- *"Structural Analysis Software Development: XMODAL 2.0, Experimental Modal Analysis"*
The Boeing Company, 2002, \$130,000
Co-Principal Investigator (w/ Allyn Phillips)
- *"Structural Analysis Software Development: XMODAL 2.0, Experimental Modal Analysis"*
The Boeing Company, 2001, \$125,000
Co-Principal Investigator (w/ Allyn Phillips)
- *"Structural Analysis Software Development: Operating Data Enhancement"*
Manta Corporation, 2000, \$30,000
Co-Principal Investigator (w/ Allyn Phillips)
- *"Structural Analysis Software Development: XMODAL 2.0, Experimental Modal Analysis"*
The Boeing Company, 2000, \$99,999
Co-Principal Investigator (w/ Allyn Phillips)
- *"Structural Analysis Software Development: XMODAL 2.0, Experimental Modal Analysis"*
The Boeing Company, 2000, \$31,800
Co-Principal Investigator (w/ Allyn Phillips)

- "Structural Analysis Software Development: XMODAL 2.0, Experimental Modal Analysis"
The Boeing Company, 1999, \$121,333
Co-Principal Investigator (w/ Allyn Phillips)
- "Structural Analysis Software Development: Data Display Enhancement"
The Boeing Company, 1999, \$50,000
Co-Principal Investigator (w/ Allyn Phillips)
- "Structural Analysis Software Development: Operating Data Enhancement"
Manta Corporation, 1999, \$27,706
Co-Principal Investigator (w/ Allyn Phillips)
- "Flutter Analysis - Phase III: Advanced Parameter Estimation"
The Boeing Company, 1998, \$70,351
Co-Principal Investigator (w/ Stuart Shelley, Allyn Phillips)
- "XMODAL 2.0, Experimental Modal Analysis"
The Boeing Company, 1998, \$180,000
Co-Principal Investigator (w/ Allyn Phillips)
- "Evaluation of Brake Squeal"
Akebono BSEC, 1997-1999, \$80,000
Co-Principal Investigator (w/ Jay Kim, Robert Wynn)
- "Advanced Instrumentation for Machinery Acoustics and Vibration Research",
Ohio Board of Regents Investment Fund, \$1,682,320 (\$600,000 to UC)
Co-Principal Investigator (w/ Professor Raj Singh of Ohio State University)
- "XMODAL, Experimental Modal Analysis, Phase VII (Enhancement)"
The Boeing Company, 1997, \$140,000
Co-Principal Investigator (w/ Allyn Phillips)
- "XMODAL, Flutter Analysis, Phase II (Enhancement)"
The Boeing Company, 1997, \$70,453
Co-Principal Investigator (w/ Stuart Shelley, Allyn Phillips)
- "Evaluation of Brake Squeal"
Akebono BSEC, 1996-1997, \$80,000
Co-Principal Investigator (w/ Jay Kim, Robert Wynn)
- "XMODAL, Experimental Modal Analysis, Phase VI (Enhancement)"
The Boeing Company, 1996, \$100,000
Co-Principal Investigator (w/ Allyn Phillips)
- "XMODAL, Flutter Analysis, Phase I (Enhancement)"
The Boeing Company, 1996, \$65,951
Co-Principal Investigator (w/ Stuart Shelley, Allyn Phillips)
- "XMODAL, Experimental Modal Analysis, Phase V (Enhancement)"
The Boeing Company, 1995, \$99,930
Co-Principal Investigator (w/ Allyn Phillips)
- "XMODAL, Flutter Analysis, Feasibility Study"
The Boeing Company, 1995, \$40,000
Co-Principal Investigator (w/ Stuart Shelley, Allyn Phillips)

- "XMODAL, Experimental Modal Analysis, Phase IV (Enhancement)"
The Boeing Company, 1994, \$99,713
Co-Principal Investigator (w/ Allyn Phillips)
- "XMODAL, Flutter Analysis, Feasibility Study"
The Boeing Company, 1994, \$38,950
Co-Principal Investigator (w/ Stuart Shelley, Allyn Phillips)
- "XMODAL, Experimental Modal Analysis, Phase III (Implementation)"
The Boeing Company, 1993, \$98,000
Co-Principal Investigator (w/ Allyn Phillips)
- "An Investigation of On-Line Vibration Parameter Estimation Schemes"
NASA-Ames University Consortium, 1992-1993, \$40,000
Co-Principal Investigator (w/ Stuart Shelley)
- "XMODAL, Experimental Modal Analysis, Phase II (Implementation)"
The Boeing Company, 1992, \$100,000
Principal Investigator
- "XMODAL, Experimental Modal Analysis, Phase I (Feasibility)"
The Boeing Company, 1991, \$50,000
Principal Investigator
- "Experimental Correlation/Correction of FEA Models"
General Motors Corporation, Cadillac Motor Car Division, 1991-1992, \$28,521
Principal Investigator
- "On-Line Parameter Estimation Using the Discrete Modal Filter"
NASA-Ames University Consortium, NCA2-642, 1991-1992, \$15,000
Principal Investigator
- "Experiments in Multivariable Identification and Control"
NASA-Langley Research Center, CSI Program, 1989-1990, \$359,000
Co-Principal Investigator (w/ G.L. Slater)
- "Evaluation of Modal Testing and Model Refinement Technology"
NASA-Langley Research Center, 1989, \$52,000
Co-Principal Investigator (w/ D.L. Brown)
- "Experimental Modal Analysis Support - US-WPAFB"
Technical Science Services, Inc., 1988-1989, \$32,000
Principal Investigator
- "Experimental Modal Analysis Support - US-WPAFB"
Technical Science Services, Inc., 1987-1988, \$42,000
Principal Investigator
- "Control of Flexible Space Structures"
State of Ohio - University of Cincinnati, Research Challenge Program, 1987-1988, \$100,000
Co-Principal Investigator (w/ D.L. Brown)
- "Experimental Modal Analysis and Dynamic Component Synthesis"
USAF/Wright-Patterson Flight Dynamics Laboratory -
USAF/Eglin Structural Dynamics Laboratory, 1983-1988, \$514,145
Principal Investigator

- *"Modal Survey of a Complete Truck Tractor"*
Navistar, International, 1985-86, \$15,000
Co-Principal Investigator (w/ R.W. Rost)
- *"Dynamic Variation of Automotive Structures"*
Fisher Body Division, General Motors Corporation, 1984-1985, \$150,000.00
Principal Investigator
- *"Multiple Input Estimation of Frequency Response Functions"*
Structural / Kinematics, 1983, \$12,000
Principal Investigator
- *"Investigation of Improved Modal Parameter Estimation Procedures"*
NASA Marshall Space Flight Center, 1981-1983, \$50,126
Research Advisor
- *"Experimental Modal Analysis of Competitive Automotive Structures"*
Fisher Body Division, General Motors Corporation, 1982, \$33,400
Principal Investigator
- *"Using Multiple Input Random Excitation Experimental Modal Analysis"*
USAF, Eglin Structural Dynamics Laboratory, 1981-1983, \$83,900
Principal Investigator
- *"Dual Input Frequency Response Function Estimation"*
USAF, Eglin Structural Dynamics Laboratory, 1980-1981, \$55,100
Co-Principal Investigator (w/ D.L. Brown)
- *"Modal Parameter Estimation"*
NASA-Langley Research Center, 1978-1980, \$122,200
Research Staff
- *"Optimum Ground Vibration Test Method"*
The Boeing Company, 1978-1980, \$41,600
Research Staff
- *"Wind-Turbine Modal Survey"*
NASA-Lewis Research Center, 1979, \$9,500
Research Staff
- *"XFV-12A Experimental Aircraft Modal Survey"*
Rockwell, North American, 1977, \$15,000
Research Staff
- *"Floor Vibration Characteristics of Existing Manufacturing Structures"*
Hewlett Packard Company, 1975-1977, \$9,000
Principal Investigator
- *"Wind Turbine Modal Survey"*
NASA-Lewis Research Center, 1975, \$8,800
Research Staff

INVITED LECTURES AND SEMINARS

- 1995-2007 "Modal Analysis: Theory and Application", Society for Experimental Mechanics, Inc.
 2006 "Measurements and Methods for Structural Dynamics", Agilent
 2005 "Excitation Methods for Structural Dynamic Testing", ONERA, Paris, France
 1978-2002 "Modal Analysis", Katholieke Universiteit te Leuven (Belgium)
 1999-2002 "Modal Parameter Estimation: The Unified Matrix Polynomial Approach (UMPA)",
 The Boeing Company
 2000 "OSU-UC Structural Dynamics Collaboration", OSU Board of Trustees
 1998 "Noise and Vibration Testing in the Next Century", MTS/SDRC Ideas Users Conference
 (Tokyo, Japan)
 1997 "UC - Structural Dynamics Research Lab", JMAC (Tokyo, Japan)
 1997 "Virtual Measurements in Experimental Modal Analysis",
 Brazilian Congress of Engineering Mechanics
 1996 "Modal Analysis and Modal Parameter Estimation", University of Kassel (Kassel Germany)
 1996 "Modal 2000: Vision of the Future", Japan Modal Analysis Conference (Tokyo, Japan)
 1996 "Trends in Modal Identification", National Science Foundation,
 Indo-U.S. Vibration Engineering Seminar, Indian Institute of Technology (Dehli, India)
 1995 "Modal Analysis: Theory and Application",
 BMW/Rolls Royce Aero Engines (Frankfurt, Germany)
 1995 "Advanced Modal Parameter Estimation",
 GM Technical Education Program (Milford, Michigan)
 1994 "X-Modal: Implementation of Unified Matrix Polynomial Approach (UMPA)
 Modal Parameter Estimation", Sandia National Laboratories
 1994 "Modal Analysis: Theory and Application",
 Society for Experimental Mechanics, Inc. (Cincinnati, Ohio)
 1993 "Modal Identification: Close or Repeated Modal Frequencies",
 Ohio State University, Mechanical Engineering Seminar Series
 1993 "Experimental Modal Analysis", SDRC/ZONIC/PCB Seminar (Seoul, Korea)
 1993 "Trends in Modal Identification", National Science Foundation,
 Korea-U.S. Vibration Engineering Seminar, KAIST (Taejon, Korea)
 1993 "Modal Analysis: Where do we go from here?",
 11th International Modal Analysis Conference (Orlando, Florida)
 1992 "Modal Filtering: System Identification in the Spatial Domain",
 ISMES International Seminar on Structural Identification, Bergamo, Italy
 1991 "Current Research in Experimental Modal Analysis",
 Three University Seminar, (Tokyo, Japan)
 1990 "System Identification for Controls: A Modal Analysis Perspective",
 Keynote Address, 15th International Seminar on Modal Analysis,
 Katholieke Universiteit te Leuven (Belgium)
 1989 "Numerical Conditioning of Modal Parameter
 Estimation Methods", University of California (Irvine)
 1989 "Experimental Modal Analysis", Sigma Xi Young Investigator
 Award Lecture, University of Cincinnati
 1988 "Current Research in Experimental Modal Analysis",
 Three University Seminar, (Tokyo, Japan)
 1988 "Spatial Domain Sine Testing", University of California (Irvine)
 1987-1988 "Structural Dynamic Modeling Techniques", University of Lowell

- 1987 "Experimental Modal Analysis Errors", SAE
1986 "Problems Inherent in the Utilization of the FFT", ASA
1985 "Experimental Modal Analysis", Naval Postgraduate School
1983-1985 "Experimental Modal Analysis", Leuven Measurements
and Systems, Paris, France
1981-1985 "Experimental Modal Analysis", Tokyo, Japan
1984 "Experimental Modal Analysis", University of Delaware
1982 "Modal Parameter Estimation", Continuing Education Institute
1982 "Multiple Input Testing", Paris, France
1982 "Multiple Input Testing", Ohio State University
1982 "Multiple Input Testing", University of Texas (Austin)
1981 "Experimental Modal Analysis", Hsinchu, Republic of China
1981 "Experimental Modal Analysis", General Motors Corporation
1981 "Experimental Modal Analysis", 1981 ASME Design Conference
1978-1980 "Digital Signal Processing", University of Cincinnati
1980 "Modal Analysis", Michigan Technological University
1979 "Determining Structural Characteristics from Response Measurements",
ASME Winter Annual Meeting
1978 "Modal Analysis", Hewlett-Packard Company
1978 "Impulse Technique for Structural Frequency Response
Testing", Acoustical Society of America, 95th Meeting
1978 "Digital Signal Processing", Engineering Society of Cincinnati

HONORS AND AWARDS

- 2004-2005 *BP Faculty Excellence Award, Mechanical Engineering, University of Cincinnati*
1998 *DeMichele Award, Society of Experimental Mechanics (SEM)*
1997 *Keynote Speaker, Brazilian Congress of Engineering Mechanics,*
1997 *Barbour Award Nominee, University of Cincinnati (UC)*
1996 *Keynote Speaker, Japan Modal Analysis Conference (JMAC), Tokyo, Japan*
1993 *Keynote Speaker, Eleventh International Modal Analysis Conference (IMAC)*
Orlando, Florida
1990 *Keynote Speaker, Fifteenth International Seminar on Modal Analysis (ISMA)*
Leuven, Belgium
1989 *Sigma Xi, Young Investigator Research Award, University of Cincinnati*
1984 *Teetor Educational Award, Society of Automotive Engineers*
1980-1981 *Post-Doctorate Scholarship, Katholieke Universiteit te Leuven, Belgium*
1980 *Outstanding Educator, Mechanical Engineering, University of Cincinnati*
1978 *Summer Scholarship, Katholieke Universiteit te Leuven, Belgium*
1972-1976 *University Scholarship, University of Cincinnati*
1972 *Chrysler Scholarship, University of Cincinnati*
1972 *Outstanding Senior Engineer, University of Cincinnati*
1972 *Graduate Magna Cum Laude, University of Cincinnati*

CONSULTING ACTIVITIES

2006-2007 *VXI Technology*
2006-2007 *Agilent Corporation*
2004-2007 *Bruel & Kjaer*
2004-2005 *Experimental Design and Analysis Solutions (EDAS)*
1993, 1995-96 *Procter and Gamble*
1992-1995 *Cincinnati Milacron*
1987-1989 *McAlpine and Hordo*
1982-1988 *The Boeing Company*
1987 *Anatrol*
1986 *Hughes, Inc.*
1985 *Hewlett-Packard Company*
1981-1985 *Structural / Kinematics*
1983-1985 *Leuven Measurements and Systems (Belgium)*
1982-1983 *Continuing Education Institute*
1982 *Structural Measurement Systems, Inc.*
1976-1981 *Structural Dynamics Research Corporation*
1981 *Rockwell International, Energy Systems Group*
1976, 1981-82 *Westinghouse, Marine Division*
1976-1981 *Cincinnati Milacron*
1980 *Caterpillar Tractor Company*
1979-1980 *The Black Clawson Company*
1979 *General Motors, Truck and Coach Division*
1978-1979 *Pratt & Whitney Aircraft*
1978-1979 *Industrial Air, Inc.*
1976-1978 *Burgmaster-Houdaille*
1977 *General Tire Company*
1977 *Raytheon Company, Missile Systems*
1977 *Chevrolet Engineering Center*
1977 *NASA-Marshall Space Flight Center*
1976 *Kerr-McGee Company, Potash Division*
1975 *Rockwell International, Bethany Aircraft Division*
1975 *Brunswick Corporation*

EQUIPMENT GRANTS

The following equipment grants represent successful proposals written by R.J. Allemang, D.L. Brown and R.W. Rost to benefit the College of Engineering (COE), the Mechanical and Industrial Engineering (MIE) Department, and/or the Structural Dynamics Research Laboratory (UC-SDRL).

<i>Year</i>	<i>Company</i>	<i>Equipment Value</i>	<i>Benefit</i>
2000	<i>Agilent Technologies</i>	<i>\$ 55,000</i>	<i>UC-SDRL</i>
1999	<i>Agilent Technologies</i>	<i>\$ 25,000</i>	<i>UC-SDRL</i>
1997	<i>Ohio Board of Regents</i>	<i>\$600,000</i>	<i>UC-SDRL</i>
1994	<i>Hewlett Packard Company</i>	<i>\$ 39,769</i>	<i>UC-SDRL</i>
1993	<i>Hewlett Packard Company</i>	<i>\$ 50,285</i>	<i>UC-SDRL</i>
1992	<i>Hewlett Packard Company</i>	<i>\$ 62,770</i>	<i>UC-SDRL</i>
1990	<i>Hewlett Packard Company</i>	<i>\$720,653</i>	<i>UC-SDRL</i>
1989	<i>Hewlett Packard Company</i>	<i>\$ 14,875</i>	<i>UC-SDRL</i>
1989	<i>Hewlett Packard Company</i>	<i>\$144,525</i>	<i>UC-SDRL</i>
1988	<i>Hewlett Packard Company</i>	<i>\$341,782</i>	<i>MIE</i>
1987	<i>Hewlett Packard Company</i>	<i>\$316,475</i>	<i>COE</i>
1986	<i>Hewlett Packard Company</i>	<i>\$406,444</i>	<i>COE</i>
1985	<i>Hewlett Packard Company</i>	<i>\$596,228</i>	<i>COE</i>
1984	<i>Hewlett Packard Company</i>	<i>\$192,000</i>	<i>UC-SDRL</i>

*UNIVERSITY OF CINCINNATI ACTIVITIES**Courses Taught:*

- *Mechanics (Statics)*
- *Mechanics (Dynamics)*
- *Kinematics of Machines*
- *Dynamics of Machines*
- *Kinematics and Dynamics of Machines*
- *Measurements and Instrumentation*
- *Vibrations I, II, III*
- *Vibrations III Lab*
- *Automotive Design I, II, III*
- *Advanced Mechanical Design I, II, III*
- *System Dynamics Analysis I, II, III*
- *Structures/Motion Lab*
- *Advanced Vibrations I*
- *Advanced Vibrations II*
- *Nonlinear Vibrations*

Graduate Work Directed:

	<i>Master's</i>	<i>Doctorate</i>	<i>Institution</i>
<i>Number Currently in Progress</i>	6	2	<i>University of Cincinnati</i>
<i>Number Directed to Completion (Chair)</i>	22	10	<i>University of Cincinnati</i>
<i>Number Directed to Completion (Committee)</i>	44	30	<i>University of Cincinnati</i>
	-	1	<i>University of Leuven</i>
<i>Total Number of Examining Committees</i>	130	41	

Master's Thesis Directed:

<i>YEAR</i>	<i>STUDENT</i>	<i>MASTER'S THESIS TITLE</i>
1984	Steven M. Crowley	<i>Advanced Techniques for Estimating Modal Parameters</i>
1985	Dennis Suliszcz	<i>A Survey of System Modeling Techniques</i>
1986	Filip Deblauwe	<i>Applications of the Polyreference Time Domain Technique</i>
1986	Jeff Poland	<i>An Evaluation of a Low-Cost Accelerometer Array System: Advantages and Disadvantages</i>
1986	Kenjiro Fukuzono	<i>Investigation of Multiple-Reference Ibrahim Time Domain Modal Parameter Estimation Techniques</i>
1987	Charles Van Karsen	<i>A Survey of Excitation Techniques for Frequency Response Function Measurement</i>
1987	Greg Hopton	<i>Detecting Nonlinearities Utilizing the Multiple Input Frequency Response Function Estimation Theory</i>
1988	Phil Weber	<i>Correlating Operating Data with Modal Testing: An Automotive Application</i>
1988	Colin Wearing	<i>Principal Component Analysis and Phase Maximization of Operating Data</i>
1990	Lawrence C. Freudinger	<i>Analysis of Structural Response Data Using Discrete Modal Filters</i>
1991	Scott D. Tucker	<i>Principal Response Analysis</i>
1993	Kyle D. Dippery	<i>Methods of Reducing the Size of the Low Order Matrix Polynomial Frequency Domain Parameter Estimation Problem in Modal Analysis</i>
1993	Christopher Richards	<i>A Study of Passive Low-Stiffness Suspension Devices</i>
1995	Amit Zutshi	<i>Optimal Lumped Structural Modifications Using Frequency Response Functions</i>
1998	Sundeep S. Bhatia	<i>Coupling of Substructures for Dynamic Analysis</i>

1998	<i>Sarah Beth Gross</i>	<i>A Study in Automatic Splicing</i>
2004	<i>Dan Lazor</i>	<i>Considerations for Using the Dynamic Inertia Method in Estimating Rigid Body Inertia Properties</i>
2005	<i>Sergey Bograd</i>	<i>Application of Transfer Path Analysis to Hydraulic Systems</i>
2005	<i>Daniel Alford</i>	<i>Lightweight, Low Cost, Automotive Data Acquisition and Telemetry System</i>
2005	<i>Siddharth Sinha</i>	<i>Techniques for the Real Normalization of Complex Modal Parameters for Updating and Correlation with FE Models</i>
2005	<i>Eric Frenz</i>	<i>Acoustic Evaluation of a Hydraulic Road Simulator</i>
2005	<i>Uday Godbole</i>	<i>Vehicle Road Test Vibration Simulation Using An Iterative, Closed Loop Control Algorithm</i>
2005	<i>Suresh Babu Chennagowni</i>	<i>Study of the Efeect of Mass Distribution, Path of Energy and Dynamics Coupling on Combined Coherence (A Nonlinearity Detection Method)</i>
2005	<i>Dhanesh Purekar</i>	<i>Experimental Correlation of Finite Element Models</i>
2005	<i>Raghavendran Raghunathan</i>	<i>The Use of Wavelets in Experimental Evaluation of Gear System Dynamics</i>
2006	<i>Ryan Lake</i>	<i>Integration of a SmallEngine Dynamometer into an Eddy Current Controlled Chassis Dynamometer</i>
2006	<i>Andrew Thien</i>	<i>Pipeline Structural Health Monitoring Using Macro-fiber Composite Active Sensors</i>
2007	<i>Tim Overly</i>	
2007	<i>Thomas Steed</i>	
2007	<i>David Moster</i>	
2007	<i>Ravi Mantrala</i>	
2007	<i>Abbey Yee</i>	

Doctoral Dissertations Directed:

<i>YEAR</i>	<i>STUDENT</i>	<i>DOCTORAL DISSERTATION TITLE</i>
1984	<i>Jan M. Leuridan</i>	<i>Some Direct Parameter Identification Methods Applicable for Multiple Input Modal Analysis</i>
1985	<i>Robert W. Rost</i>	<i>Investigation of Multiple Input Frequency Response Function Estimation Techniques for Modal Analysis</i>
1989	<i>Max L. Wei</i>	<i>Real-Normalization and Scaling of Measured Modes in Modal Modeling Techniques</i>
1991	<i>Jenq-haur Pan</i>	<i>Investigation of Operating Shapes</i>
1991	<i>Allyn Phillips</i>	<i>Investigation of an Experimental Dynamics Test Simulation Methodology</i>
1991	<i>Stuart J. Shelley</i>	<i>Investigation of Discrete Modal Filters for Structural Dynamic Applications</i>
1991	<i>Weicherng Wang</i>	<i>Evaluation and Implementation of Optimal Dynamic Structural Modification Using Frequency Response Functions</i>
1995	<i>JongChun Wei</i>	<i>Investigation of Updating/Correlation Dynamic Models Between Experimental and Analytical Analysis</i>
1997	<i>Ralph D. Buehrle</i>	<i>System Dynamic Analysis of a Wind Tunnel Model with Applications to Improve Aerodynamic Data Quality</i>
2000	<i>Douglas E. Adams</i>	<i>A Spatial Approach to Nonlinear System Analysis</i>
2006	<i>Steven Michael Spottswood</i>	<i>Identification of Nonlinear Parameters from Experimental Data for Reduced Order Models</i>
2007	<i>Daniel Lazor</i>	

University Activities:

- *INFO-TECH Committee: 1998-2002*
- *University Task Force for Graduate Program Review: 1993-1994*
- *Information Technology, Academic Advisory Committee (ITAAC): 1990-1993*
- *Committee for Laboratory Instructional Fees and Funding (CLIFF): 1990-1992*
- *Time to Degree Review Panel: 1990-1991*
- *Academic Computer Advisory Committee: 1986-1989*
- *University Research Council - Review Subcommittee for Student Summer Research Fellowships in Engineering, Chairman: 1985*
- *University Research Council: 1984-1985*
- *Search Committee, Dean of the College of Engineering: 1984*
- *University Research Council - Review Subcommittee for Physical Sciences and Engineering: 1982-1984*

College Activities:

- *Faculty Advisor, Engineering Tribunal: 1996-Present*
- *Faculty Advisor, Tau Beta Pi: 1986-Present*
- *Reappointment, Promotion and Tenure Committee: 1992-1993, 2000-2002 (Chair 2001-2002), 2006-Present*
- *College Computing Committee: 1990-2002 (Chair: 1997-2002)*
- *Faculty Graduation Marshall: 1993*
- *Search Committee, Department Head (MINE): 1991-1992*
- *College of Engineering Decanal Review Committee, Chairman: 1992*
- *Dean's Advisory Committee: 1987-1990*
- *Review Committee, Herman Schneider Laboratory Proposals: 1987*
- *Grievance Committee, Chairman: 1985-1987*
- *Computer Task Force: 1985-1986*
- *Search Committee, Director of College Computing: 1985-1986*
- *Advisory Search Committee, Dean of the College of Engineering: 1984*
- *Space Evaluation Committee: 1985-1986*

Department Activities:

- *Faculty Advisor, Pi Tau Sigma: 1996-Present*
- *Faculty Advisor, Society of Automotive Engineers: 2001-Present*
- *MINE Lab Committee, Chair: 1995-Present*
- *Faculty Mentor, ME Design Clinic: 1992-Present*
- *Structural Dynamics Research Laboratory, Associate Director: 1978-2005, Director: 2005-Present*
- *MINE Lab Committee, Chair: 1995-Present*
- *Search Committee, Structures/Motion Faculty Positions: 1995-1996*
- *Director of Graduate Studies: 1987-1994*
- *Search Committee, Academic Challenge Faculty Positions, Chairman: 1987-1988*
- *Search Committee, Junior Research Associate Position (Electronics Technician), Chairman: 1987-1988*
- *Faculty Advisor, ASME Student Section: 1982-1988*
- *Committee on Teaching Loads and Outstanding Teaching: 1988*
- *Review Committee for Doctoral Candidacy Exams, Chairman: 1988*
- *Review Committee, Undergraduate ME Design Content: 1986-1987*
- *Review Committee, Computer Aided Engineering Workstations: 1985-1986*
- *Review Committee, Computer Equipment: 1985-1986*