

# VITA

## ALFRED GERHARD STRIZ

Professor and L.A. Comp Chair in Aerospace Engineering  
School of Aerospace and Mechanical Engineering  
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August 2002

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### PERSONAL DATA

Date of Birth: July 25, 1952 Place of Birth: Rosenheim, West Germany  
Married, Three Children Citizenship: US

### EDUCATION

Ph.D.: Aeronautics and Astronautics, Purdue University, August 1981, Advisor: H.T. Yang

Dissertation: "Application of Harmonic Analysis Method to Aeroelastic Stability  
Analysis of Conventional and Supercritical Airfoils in Transonic Flow"

M.S.: Aeronautics and Astronautics, Purdue University, December 1976

B.S.: Aeronautics and Astronautics, Purdue University, May 1976

Vordiplom: Technische Universität München, Munich, West Germany, 1974

### ACADEMIC EXPERIENCE

*School of Aerospace and Mechanical Engineering*, University of Oklahoma, Norman, Oklahoma  
Assistant Professor: 1981 - 88 Associate Professor: 1988 - 98 Professor: 1998 - present

*School of Health and Sport Science*, University of Oklahoma, Norman, Oklahoma  
Instructor: 2000 - present

**PROFESSIONAL REGISTRATION:** Engineer-In-Training, EI 5578, 1982

## **TEACHING AND ADVISING**

### **UNDERGRADUATE TEACHING**

<i>Aerospace Engineering:</i>	Aeromechanics Laboratory Introduction to Aerospace Engineering Aerospace Structural Analysis
<i>Aerospace/Mechanical Engineering:</i>	Rigid Body Mechanics Solid Mechanics I (Strength of Materials) Solid Mechanics II (Advanced Strength of Materials) Mechanical and Aerospace Structural Analysis Design and Manufacturing Processes
<i>General Engineering:</i>	Reliability Concepts in Engineering PC-Based Finite Element Analysis Numerical Methods in Engineering Computation
<i>Health and Sport Science:</i>	Introduction to Martial Arts

### **GRADUATE TEACHING**

<i>Aerospace Engineering:</i>	Aeroelasticity Advanced Aerospace Structures
<i>Aerospace/Mechanical Engineering:</i>	Matrix Methods in Structural Analysis Introduction to the Finite Element Method Advanced Finite Element Analysis Computational Solid Mechanics Structural Optimization
<i>Mechanical Engineering:</i>	Advanced Structural Analysis Engineering Acoustics Fundamental Vehicle Dynamics

### **UNDERGRADUATE ADVISING**

Advisor to about 50 Undergraduate Students on a Rotating Basis	1988 - 94
Advisor to about 25 Undergraduate Students on a Rotating Basis	1996 - present
ASME Faculty Advisor	1981 - 85
Tau Beta Pi Faculty Advisor	1993 - 97
OU College of Engineering: Engineers Club Sponsor	1995 - 97

## UNDERGRADUATE STUDENT DESIGN COMPETITIONS

NASA/ASEE Space Suit Glove Design, Co-Advisor, (2nd Place)	1984 - 85
ASME/SAE Mini Baja Design, Co-Advisor	1984 - 85
SAE Mini Baja Design, Advisor, (1st Place, Endurance Race)	1989 - 90
(3rd Place, Mechanical Design; 5th Place, Endurance Race)	1990 - 91

## GRADUATE ADVISING

### *Ph.D. Dissertations:*

Arrieta, A.	2001	Design Optimization of a Fighter Aircraft with Damage Tolerance Constraints and a Probabilistic Model fo the Fatigue Environment
Jung, S.-Y.	1999	Multidisciplinary Design Optimization of Aircraft Wing Structures with Aeroelastic and Aeroservoelastic Constraints
Jiang, L.	1998	Advances in Acoustic Stress Characterization (with Professor R.A. Kline)
Chen, W.-L.	1994	A New Approach for Structural Analysis: The Quadrature Element Method
Cho, K.-N.	1989	Higher-Order Individual Layer Theory of Laminated Composites (with Professor C.W. Bert)
Jang, S.K.	1987	Application of Differential Quadrature to the Analysis of Structural Components (with Professor C.W. Bert)

### *M.S. Theses:*

Plunkett, C.	2000	New Developments in Displacement Based Multilevel Structural Optimization
Reaves, G.	1999	Multi-Objective Function Optimization of Aircraft Performance
Sharma, S.	1998	Displacement Based Multilevel Optimization of Beam and Frame Structures
Srivastava, T.	1997	Displacement Based Multilevel Optimization of Truss Structures
Sethi, S.S	1996	On Using the Kreisselmeier-Steinhauser Function and Other Norms in Simultaneous Analysis and Design
Yan, S.	1996	Comparison of the Analysis and Optimization of two Aircraft Wing Models Using ASTROS and MSC/NASTRAN

### GRADUATE ADVISING, Continued

Wu, Z.	1996	An Efficiency Study of Simultaneous Analysis and Design
Bishop, J.A.	1995	A System for Optimizing Actuator Placement for Vibration Suppression in Truss Structures by Means of a Genetic Algorithm
Lee, W.T.	1994	Multidisciplinary Optimization of a Transport Aircraft Wing
Stevens, D.C.	1993	An Interactive Model Generator for Structural Optimization with Aeroelastic Constraints
Sassine, A.	1992	Vibration Analysis of Disc Drive Rotary Arm
Mei, F.	1992	Influence of Sweep and Design Variable Linking on the Structural Optimization of Metal/Composite Fighter Wings
Alluri, P.R.	1992	Influence of Frequency Constraints and Design Variable Linking on Multidisciplinary Optimization of a Fighter Wing
Thakore, K.D.	1992	Strength and Stability Analyses of Retaining Structure Models for the Fracturing Fluid Characterization Facility (FFCF)
Loo, Y.-W.	1991	Application of Differential Quadrature to the Analysis of Static Aeroelastic Phenomena
Cruse, G.P.	1990	Stress Analysis of Carbon-Carbon Composites Using Local Material Properties
Chengalur, S.	1988	A Parametric Study of Inflated Woven Space Suit Components by the Finite Element Method
Salari, M.	1988	Stress Analysis of a Human Molar Including a Restoration under Extreme Temperature and Load Condition
Ho, Y.-S.	1986	Stress Analysis of Cylindrical Shells with Varying Wall Thickness
Lotfi-Gelian, M.	1985	A Finite Element Analysis of Square Beam Connections
Jang, S.K.	1985	Optimization of Tip Store Modeling for Aeroelastic Applications
Brueckner, F.	1985	Finite Element Modeling and Analysis of Jet Engine Breech Chambers

#### *Present Graduate Student Supervision:*

Houshmand, B.	M.S.	Displacement Based Multilevel Structural Optimization	2002
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Huizenga, A.	M.S.	Multidisciplinary Design Optimization (MDO)	2004
Fidler, T.	M.S.	Structural Optimization/MDO	2004
Subramaniam, S.	M.S.	Finite Element Modeling and Simulation	2004

## PUBLICATIONS

### PUBLICATIONS IN REFEREED JOURNALS

T.Y. Yang, P. Guruswamy, A.G. Striz, and J.J. Olsen, "Flutter Analysis of a NACA 64A006 Airfoil in Small Disturbance Transonic Flow", **Journal of Aircraft**, Vol. 17, No. 4, April 1980, pp. 225-232.

T.Y. Yang, P. Guruswamy, and A.G. Striz, "Reply by Authors to H.P.Y. Hitch", **Journal of Aircraft**, Vol. 18, February 1981, pp. 159-160.

T.Y. Yang, A.G. Striz, and P. Guruswamy, "Flutter Analysis of MBB A-3 Supercritical Airfoil in Small Disturbance Transonic Flow", **Journal of Aircraft**, Vol. 18, No. 10, October 1981, pp. 887-890.

T.Y. Yang, P. Guruswamy, and Striz, A.G., "Application of Transonic Codes to Flutter Analysis of Conventional and Supercritical Airfoils", **Journal of Aircraft**, Vol. 19, No. 3, March 1982, pp. 211-220.

A.I. Beltzer, C.W. Bert, and A.G. Striz "On Wave Propagation in Random Particulate Composites", **International Journal of Solids and Structures**, Vol. 19, No. 9, October 1983, pp. 785-791.

A.L. Newberry, C.W. Bert, and A.G. Striz, "Noninteger-Polynomial Finite Element Analysis of Column Buckling", **Journal of Structural Engineering**, Vol. 113, No. 4, April 1987, pp. 873-878.

A.G. Striz and S.K. Jang, "Optimization of Wing Tip Store Modeling", **Journal of Aircraft**, Vol. 24, No. 8, August 1987, pp. 516-517.

M. Salari, C.W. Bert, and A.G. Striz, "Free Vibration of a Solid Circular Plate Free at its Edge and Attached to a Winkler Foundation", **Journal of Sound and Vibration**, Vol. 118, No. 1, October 1987, pp. 188-191.

A.G. Striz, S.K. Jang, and C.W. Bert, "Nonlinear Bending Analysis of Thin Circular Plates by Differential Quadrature", **Thin-Walled Structures**, Vol.6, No.1, 1988, pp. 51-62.

C.W. Bert, S.K. Jang, and A.G. Striz, "Two New Approximate Methods for Analyzing Free Vibration of Structural Components", **AIAA Journal**, Vol. 26, No. 5, May 1988, pp. 612-618.

C.W. Bert, S.K. Jang, and A.G. Striz, "Discussion on 'An Approximate Solution of the Axisymmetric von Karman Equation for a Point-Loaded Circular Plate' by Dolovich, Brodland, and Thornton", **Journal of Applied Mechanics**, Vol.55, September 1988, pp. 746-747.

## ADDITIONAL PUBLICATIONS IN REFEREED JOURNALS

S.K. Jang, C.W. Bert, and A.G. Striz, "Application of Differential Quadrature to Static Analysis of Structural Components", **International Journal of Numerical Methods in Engineering**, Vol. 28, April 1989, pp. 561-577.

C.W. Bert, S.K. Jang, and A.G. Striz, "Nonlinear Bending Analysis of Orthotropic Rectangular Plates by the Method of Differential Quadrature", **Computational Mechanics**, Vol.5, 1989, pp. 217-226.

K.N. Cho, A.G. Striz, and C.W. Bert, "Thermal Stress Analysis of Laminate Using Higher Order Theory in Each Layer", **Journal of Thermal Stresses**, Vol.10, 1989, pp. 321-332.

K.N. Cho, A.G. Striz, and C.W. Bert, "Bending Analysis of Thick Bimodular Laminates by Higher-Order Individual-Layer Theory", **Composite Structures**, Vol. 15, No. 1, pp. 1-24, 1990.

K.N. Cho, C.W. Bert, and A.G. Striz, "Free Vibrations of Laminated Rectangular Plates Analyzed by Higher Order Individual-Layer Theory", **Journal of Sound and Vibration**, Vol. 145(3), 1991, pp. 429-442.

R.A. Kline, G. Cruse, A.G. Striz, and E.I. Madaras, "Integrating NDE-Derived Engineering Properties with Finite Element Analysis for Structural Composite Materials", **Ultrasonics**, Vol. 31, No. 1, 1993, pp. 53-59.

C.W. Bert, X. Wang, and A.G. Striz, "Differential Quadrature for Static and Free Vibration Analyses of Anisotropic Plates", **International Journal of Solids and Structures**, Vol. 30, No. 13, 1993, pp. 1737-1744.

X. Wang, A.G. Striz, and C.W. Bert, "Free Vibration Analysis of Annular Plates by the DQ Method", **Journal of Sound and Vibration**, Vol. 164(1), 1993, pp. 173-175.

X. Wang, C.W. Bert, and A.G. Striz, "Differential Quadrature Analysis of Deflection, Buckling, and Free Vibration of Beams and Rectangular Plates", **Computers & Structures**, Vol. 48, No. 3, 1993, pp. 473-479.

C.W. Bert, X. Wang, and A.G. Striz, "Static and Free Vibrational Analysis of Beams and Plates by Differential Quadrature Method", **Acta Mechanica**, Vol. 102, 1994, pp. 11-24.

C.W. Bert, X. Wang, and A.G. Striz, "Convergence of the Differential Quadrature Method in the Analysis of Anisotropic Plates", **Journal of Sound and Vibration**, Vol. 170(1), 1994, pp. 140-144.

X. Wang, A.G. Striz, and C.W. Bert, "Buckling and Vibration Analysis of Skew Plates by the Differential Quadrature Method", **AIAA Journal**, Vol. 32, No. 4, April 1994, pp. 886-889.

## ADDITIONAL PUBLICATIONS IN REFEREED JOURNALS

A.G. Striz, W.L. Chen, and C.W. Bert, "Static Analysis of Structures by the Quadrature Element Method (QEM)", **International Journal of Solids and Structures**, Vol. 31, No. 20, 1994, pp. 2807-2818.

A.G. Striz and V.B. Venkayya, "Influence of Structural and Aerodynamic Modeling on Flutter Analysis", **Journal of Aircraft**, Vol. 31, No. 5, September-October 1994, pp. 1205-1211.

A.G. Striz and W.L. Chen, "Application of the Differential Quadrature Method to the Driven Cavity Problem", **International Journal of Non-Linear Mechanics**, Vol. 29, No. 5, 1994, pp. 665-670.

K. Kang, C.W. Bert, and A.G. Striz, "Vibration Analysis of Shear Deformable Circular Arches by the Differential Quadrature Method", **Journal of Sound and Vibration**, Vol. 181(2), 1995, pp. 353-360.

A.G. Striz, X. Wang, and C.W. Bert, "Harmonic Differential Quadrature Method and Applications to Analysis of Structural Components", **Acta Mechanica**, Vol. 111/1-2, 1995, pp. 85-94.

K. Kang, C.W. Bert, and A.G. Striz, "Static Analysis of a Curved Shaft Subjected to End Torques", **International Journal of Solids and Structures**, Vol. 33, No. 11, 1996, pp. 1587-1596.

K. Kang, C.W. Bert, and A.G. Striz, "Vibration Analysis of Horizontally Curved Beams with Warping Using DQM", **Journal of Structural Engineering**, Vol. 122, No. 6, June 1996, pp. 657-662.

K. Kang, C.W. Bert, and A.G. Striz, "Vibration and Buckling Analysis of Circular Arches using DQM", **Computers and Structures**, Vol. 60, No. 1, June 1996, pp. 49-57.

K.N. Cho, C.W. Bert, and A.G. Striz, "Frequency Response of Laminated Plates with Material Damping Modeled by Higher-Order Theory", **Advanced Composite Materials**, Vol. 6, No. 1, 1996, pp.51-63.

W.L. Chen, A.G. Striz, and C.W. Bert, "A New Approach to the Differential Quadrature Method for Fourth-Order Equations", **International Journal of Numerical Methods in Engineering**, Vol. 40, 1997, pp. 1941-1956.

A.G. Striz, W.L. Chen, and C.W. Bert, "Free Vibration of Plates by the High Accuracy Quadrature Element Method", **Journal of Sound and Vibration**, Vol. 202, No. 5, 1997, pp. 689-702.

J.A. Bishop, F.E. Eastep, A.G. Striz, and V.B. Venkayya, "Influence of Model Complexity and Aeroelastic Constraints on the Multidisciplinary Optimization of Flight Vehicle Structures", **Journal of Aircraft**, Vol. 35, No. 5, 1998, pp.784-791

## ADDITIONAL PUBLICATIONS IN REFEREED JOURNALS

W.L. Chen, A.G. Striz, and C.W. Bert, "High-Accuracy Plane Stress and Plate Elements in the Quadrature Element Method", **International Journal of Solids and Structures**, Vol. 37, No. 4, 2000, pp 627-647.

## INVITED AND REFEREED CONFERENCE PAPERS

T.Y. Yang, A.G. Striz, and P. Guruswamy, "Flutter Analysis of MBB A-3 Supercritical Airfoil in Small Disturbance Transonic Flow", **AIAA 80-0736, Proceedings, AIAA/ASME/ASCE/AHS 21<sup>st</sup> Structures, Structural Dynamics and Materials Conference**, Seattle, Washington, May 1980.

T.Y. Yang, P. Guruswamy, and A.G. Striz, "Application of Transonic Codes to Flutter Analysis of Conventional and Supercritical Airfoils", **AIAA 81-0603, Proceedings, AIAA Dynamics Specialist Conference**, Atlanta, Georgia, April 1981.

A.I. Beltzer, C.W. Bert, and A.G. Striz, "On Wave Propagation in Random Particulate Composites", **Invited Paper, 20<sup>th</sup> Annual Meeting of the Society of Engineering Science**, Newark, Delaware, August 1983.

J.B. Peacock, R. Shambaugh, A.G. Striz, and J. Hordinsky, "EVA Space Suit Glove Design", **Proceedings, Space Tech 85**, Anaheim, California, September 1985; also: **SME-Paper MM-85968**.

A.G. Striz and S.K. Jang, "Optimization of Wing Tip Store Modeling", **Proceedings, Southeastern Conference on Theoretical and Applied Mechanics, SECTAM XIII**, Columbia, South Carolina, April 1986.

A.G. Striz and F.P. Brueckner, "Finite Element Analysis and Redesign of Jet Engine Starter Breech Chambers", **1986 Winter Annual Meeting of ASME**, Anaheim, California, December 1986; also: **ASME-Paper 86-WA/DE-20**.

C.W. Bert, S.K. Jang, and A.G. Striz, "New Methods for Analyzing Vibration of Structural Components", **Proceedings, AIAA Dynamics Specialist Conference**, Monterey, California, April 1987, pt. 2B.

A.G. Striz, S.K. Jang, and C.W. Bert, "Analysis by Differential Quadrature of Thin Circular Plates Undergoing Large Deflections", **Developments in Mechanics**, Vol.14, Invited Paper, **Proceedings, 20<sup>th</sup> Midwestern Mechanics Conference**, West Lafayette, Indiana, August 1987.

K.N. Cho, C.W. Bert, and A.G. Striz, "A New Theory for Bending of Bimodular Laminates", **Invited Paper, Engineering Science Preprint ESP24.870034, 24<sup>th</sup> Annual Technical Meeting, Society of Engineering Science**, Salt Lake City, Utah, September 1987.

## ADDITIONAL INVITED AND REFEREED CONFERENCE PAPERS

S.K. Jang, C.W. Bert, and A.G. Striz, "Application of Differential Quadrature to Deflection and Buckling Analysis of Structural Components", **Engineering Science Preprint ESP24.870032, 24<sup>th</sup> Annual Technical Meeting, Society of Engineering Science**, Salt Lake City, Utah, Sept. 1987.

C.W. Bert, A.G. Striz, and S.K. Jang, "Nonlinear Deflection of Rectangular Plates by Differential Quadrature", **Invited Paper, Proceedings, International Conference on Computational Engineering Science, ICES '88**, Atlanta, Georgia, April 1988.

A.G. Striz, M. Salari, and M.G. Duncanson, Jr., "Stress Analysis of a Molar Including a Restoration", **Engineering Science Preprint ESP25.880040, Applied Mechanics and Engineering Sciences Conference**, Berkeley, California, June 1988.

K.N. Cho, A.G. Striz, and C.W. Bert, "Thermal Stress Analysis of Laminate Using Higher Order Theory in Each Layer", **Proceedings, AIAA/ASME/ASCE/ASH 30<sup>th</sup> Structures, Structural Dynamics and Materials Conference**, Mobile, Alabama, April 1989.

A.G. Striz, Y.S. Ho, and H.S. Al-Rubeye, "Stress Analysis of Shells with Varying Wall Thickness", **Engineering Science Preprint ESP26.89016, 26<sup>th</sup> Annual Technical Meeting, Society of Engineering Science**, Ann Arbor, Michigan, September 1989.

K.N. Cho, A.G. Striz, and C.W. Bert, "Higher-Order Individual-Layer Theory for Cylindrical Bending and Plate Bending of Rectangular Laminates", **Engineering Science Preprint ESP26.89018, 26<sup>th</sup> Annual Technical Meeting, Society of Engineering Science**, Ann Arbor, Michigan, September 1989.

K.N. Cho, C.W. Bert, and A.G. Striz, "Natural Frequencies of Rectangular Laminates by Improved Higher-Order Individual-Layer Theory", **Engineering Science Preprint ESP26.89019, 26<sup>th</sup> Annual Technical Meeting, Society of Engineering Science**, Ann Arbor, Michigan, September 1989.

D.M. Egle, A.S. Khan, R.D. Daniels, A.G. Striz, and A.B. Gillies, "Failure Analysis of Cartridge-Pneumatic Starter Breech Chambers", **Tri-Service Corrosion Conference**, Atlantic City, October 1989.

K.N. Cho, A.G. Striz, and C.W. Bert, "Bending Analysis of Thick Bimodular Laminates by Higher-Order Individual-Layer Theory", **Invited Paper, 1989 ASME Winter Annual Meeting**, San Francisco, California, December 1989.

A.G. Striz and V.B. Venkayya, "Influence of Structural and Aerodynamic Modeling on Flutter Analysis", **Proceedings, AIAA/ASME/ASCE/AHS/ASC 31<sup>st</sup> Structures, Structural Dynamics and Materials Conference**, Long Beach, California, April 1990, Part 1, pp. 110-118.

## ADDITIONAL INVITED AND REFEREED CONFERENCE PAPERS

K.N. Cho, C.W. Bert, and A.G. Striz, "Forced Vibration of Rectangular Laminated Plates with Material Damping Modeled by Higher-Order, Individual-Layer Theory", **Proceedings, Fifth Japan-U.S. Conference on Composite Materials**, Tokyo, Japan, June 1990.

A.G. Striz and V.B. Venkayya, "Influence of Structural and Aerodynamic Modeling on Structural Optimization with Flutter Constraint", **Proceedings, Third Air Force/NASA Symposium on Recent Advances in Multidisciplinary Analysis and Optimization**, San Francisco, California, September 1990, pp. 431-438.

K.H. Bergey and A.G. Striz, "The Role of Design in Aerospace Engineering Education", **1991 SAE Aerospace Atlantic Conference**, Dayton, Ohio, April 1991;  
also: SAE Technical Paper 911178.

F.E. Eastep, A.G. Striz, and V.B. Venkayya, "Influence of Static and Dynamic Aeroelastic Constraints on Structural Optimization", **AIAA-91-1100-CP, Proceedings, AIAA/ASME/ASCE/AHS/ASC 32<sup>nd</sup> Structures, Structural Dynamics and Materials Conference**, Baltimore, Maryland, April 1991, pp. 470-476.

E.I. Madaras, R.A. Kline, G. Cruse, and A.G. Striz, "The Use of Ultrasonic Property Measurements as the Basis for Finite Element Analysis of Composite Materials", **Ultrasonics International 91**, LeTouquet, France, July 1991.

A.G. Striz and V.B. Venkayya, "Multidisciplinary Optimization Studies Using ASTROS", in: **AGARD REPORT 784, Integrated Design Analysis and Optimisation of Aircraft Structures**, 72<sup>nd</sup> Meeting of the AGARD Structures and Materials Panel, Bath, United Kingdom, April 1991, pp. 8/1-8/29.

A.G. Striz, G. Cruse, R.A. Kline, and E.I. Madaras, "Structural Analysis of an NDE-Inspected Carbon-Carbon Component", **AIAA-92-2241-CP, Proceedings, AIAA/ASME/ASCE/AHS/ASC 33<sup>rd</sup> Structures, Structural Dynamics and Materials Conference**, Dallas, Texas, April 1992, pp. 2855-2863.

C.W. Bert, X. Wang, and A.G. Striz, "New Developments in Differential Quadrature Analysis of Structural Elements", **29<sup>th</sup> Annual Technical Meeting of the Society of Engineering Science**, La Jolla, California, September 1992.

F. Mei and A.G. Striz, "Influence of Sweep on Structural Optimization of a Fighter Wing", **AIAA-92-4794, Fourth AIAA/USAF/NASA/OAI Symposium on Multidisciplinary Analysis and Optimization**, Cleveland, Ohio, September 1992.

A.G. Striz and P.R. Alluri, "Influence of Frequency Constraints and Design Variable Linking on Multidisciplinary Structural Optimization of a Fighter Wing", **AIAA-93-1037, AIAA/AHS/ASEE Aerospace Design Conference**, Irvine, California, February 1993.

## **ADDITIONAL INVITED AND REFEREED CONFERENCE PAPERS**

A.G. Striz and Y.W. Loo, "Application of Differential Quadrature to the Analysis of Static Aeroelastic Phenomena", **Proceedings, 34<sup>th</sup> AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference**, La Jolla, California, April 1993.

X. Wang, C.W. Bert, and A.G. Striz, "Buckling and Free Vibration Analysis of Anisotropic Plates by Differential Quadrature", **Meet'N'93, the 1<sup>st</sup> ASCE/ASME/SES Joint Meeting**, Charlottesville, Virginia, June 1993.

A.G. Striz, X. Wang, and C.W. Bert, "Harmonic Differential Quadrature Method and Applications to Free Vibration Analysis of Rectangular Plates", **2<sup>nd</sup> U.S. National Congress on Computational Mechanics**, Washington, D.C., August 1993.

A.G. Striz, W.L. Chen, and C.W. Bert, "Static Analysis of Structures by the Quadrature Element Method (QEM)", **Proceedings, AIAA/ASME/ASCE/AHS/ASC 35<sup>th</sup> Structures, Structural Dynamics and Materials Conference**, Hilton Head, South Carolina, April 1994.

D.C. Stevens, A.G. Striz, and R.N. Yurkovich, "An Interactive Model Generator/Preprocessor for the Multidisciplinary Optimization of Aircraft", **AIAA-94-4402-CP, Proceedings, Fifth AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization**, Panama City, Florida, September 1994, pp. 1310-1317.

A.G. Striz and W.T. Lee, "Multidisciplinary Optimization of a Metal Versus a Composite Transport Aircraft Wing", **AIAA-94-4410-CP, Proceedings, Fifth AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization**, Panama City, Florida, September 1994, pp. 1369-1376.

A.G. Striz, "A New Look at the Simultaneous Analysis and Design of Structures", **AIAA-95-1141, AIAA/ASME/ASCE/AHS/ASC 36<sup>th</sup> Structures, Structural Dynamics and Materials Conference**, New Orleans, Louisiana, April 1995.

A.G. Striz, W.L. Chen, and C.W. Bert, "High-Accuracy Plane Stress and Plate Elements in the Quadrature Element Method", **AIAA-95-1267-CP, Proceedings, AIAA/ASME/ASCE/AHS/ASC 36<sup>th</sup> Structures, Structural Dynamics and Materials Conference**, New Orleans, Louisiana, April 1995, pp. 957-965.

A.G. Striz, W.L. Chen, and C.W. Bert, "Free Vibration of High-Accuracy Plate Elements by the Quadrature Element Method", **AIAA-95-1351-CP, Proceedings, AIAA/ASME/ASCE/AHS/ASC 36<sup>th</sup> Structures, Structural Dynamics and Materials Conference**, New Orleans, Louisiana, April 1995, pp. 1619-1627.

J.A. Bishop, A.G. Striz, and V.B. Venkayya, "Open-Loop Vibration Suppression of Truss Structures Using Variable Axial Force Members", **AIAA-95-1147, AIAA/ASME/ASCE/AHS/ASC 36<sup>th</sup> Structures, Structural Dynamics and Materials Conference**, New Orleans, Louisiana, April 1995.

## ADDITIONAL INVITED AND REFEREED CONFERENCE PAPERS

A.G. Striz, Z. Wu, and J. Sobieszczanski-Sobieski, "An Efficiency Study of the Simultaneous Analysis and Design of Structures", **Proceedings, WCSMO-1 The First World Congress of Structural and Multidisciplinary Optimization**, Goslar, Germany, May 1995, pp. 401-406.

A.G. Striz, "Structural Optimization Studies of Wings with Aeroelastic Constraints using ASTROS", **Invited Paper 24-80, Proceedings, Confederation of European Aerospace Societies International Forum on Aeroelasticity and Structural Dynamics, 1995**, Manchester, UK, June 1995.

W.L. Chen, A.G. Striz, and C.W. Bert, "A New Approach for Solving Fourth-Order Equations by the Differential Quadrature Method", **Computational Mechanics '95, Volume 1, Proceedings of ICES '95**, Mauna Lani, Hawaii, July 1995, pp. 660-665.

J.A. Bishop and A.G. Striz, "Design of Vibration Suppression Systems in Space Trusses Using a Genetic Algorithm", **AIAA-96-1537-CP, Proceedings, 37<sup>th</sup> AIAA/ASME/ASCE/ AHS/ASC Structures, Structural Dynamics, and Materials Conference**, Salt Lake City, Utah, April 1996, pp. 1868-1873.

A.G. Striz and J. Sobieszczanski-Sobieski, "Displacement Based Multilevel Structural Optimization", **AIAA-96-4098, 6<sup>th</sup> AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization**, Bellevue, Washington, September 1996.

S. Yan and A.G. Striz, "Comparative Evaluation of Two MDO Codes in Aircraft Wing Analysis and Optimization", **AIAA-96-4032-CP, Proceedings, 6<sup>th</sup> AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization**, Bellevue, Washington, September 1996, pp 459-468.

S. S. Sethi and A.G. Striz, "On Using the Kreisselmeier-Steinhauser Function in Simultaneous Analysis and Design", **AIAA-97-1289-CP, Proceedings, 38<sup>th</sup> AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference**, Kissimmee, Florida, April 7-10, 1997, pp. 1357-1365.

A.G. Striz and V.B. Venkayya, "Issues of Multiobjective Function Optimization in Engineering Design", **AIAA-97-1290-CP, 38<sup>th</sup> AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference**, Kissimmee, Florida, April 7-10, 1997.

P.C. Chen, D. Sarhaddi, D.D. Liu, M. Karpel, A.G. Striz, and S.Y. Jung, "A Unified Unsteady Aerodynamic Module for Aeroelastic, Aeroservoelastic and MDO Applications", **Proceedings, Confederation of European Aerospace Societies International Forum on Aeroelasticity and Structural Dynamics, 1997**, Rome, Italy, June 1997.

A.G. Striz and K. Thakore, "Strength and Stability Analyses of Retaining Structure Models for the Fracturing Fluid Characterization Facility", **1997 International Mechanical Engineering Congress and Exposition**, Dallas, Texas, November 16-21, 1997.

## ADDITIONAL INVITED AND REFEREED CONFERENCE PAPERS

A.G. Striz, T. Srivastava, and J. Sobieszczanski-Sobieski, "An Efficient Methodology for Structural Optimization", in: ***Structural Optimisation, Proceedings of the ACSO'98 - Australasian Conference on Structural Optimisation***, Sidney, Australia, February 11 - 13, 1998, Oxbridge Press, 1998, Victoria, Australia, pp. 259 - 266.

A. G. Striz, S. Sharma, T. Srivastava, and J. Sobieszczanski-Sobieski, "Displacement Based Multilevel Structural Optimization: Beams, Trusses, and Frames", **AIAA-CP-98-4792, 7<sup>th</sup> AIAA/ USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization**, St. Louis, Missouri, September 2-4, 1998.

A.G. Striz, C. Plunkett, and J. Sobieszczanski-Sobieski, "Parallel Processing on a Variant of Displacement Based Multilevel Structural Optimization", **AIAA-99-1301-wip, 40<sup>th</sup> AIAA/ ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference**, St. Louis, Missouri, April 12-15, 1999.

S.Y. Jung and A.G. Striz, "Optimization Benchmarking and Testing of ASTROS\*, a Seamless Integration of ASTROS with a Unified Aerodynamic Module", Proceedings, **WCSMO-3 The Third World Congress of Structural and Multidisciplinary Optimization**, Amherst, New York, May 1999.

S.Y. Jung and A.G. Striz, "ASTROS\*: Seamless Integration of ASTROS with a Unified Aerodynamic Module: Applications Benchmarking and Testing", Proceedings, **International Forum on Aeroelasticity and Structural Dynamics**, Williamsburg, VA, June 1999, pp. 491-500.

Reaves, G., and Striz, A.G., "A Study in Propeller Aircraft Performance Optimization", **AIAA-2000-0839, 38<sup>th</sup> AIAA Aerospace Sciences Meeting**, Reno, Nevada, January 2000.

Arrieta, A., and Striz, A.G., "Modeling of the Aircraft Fatigue Load Environment", **AIAA-2000-0973, 38<sup>th</sup> AIAA Aerospace Sciences Meeting**, Reno, Nevada, January 2000.

Arrieta, A., Striz, A.G., and Venkayya, V.B., "Automated Optimal Design of Aircraft Structures with Damage Tolerance Requirements", **AIAA-2000-1786, 41<sup>th</sup> AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference**, Atlanta, Georgia, April 2000.

Reaves, G., and Striz, A.G., "Multi-Objective Function Optimization of Jet Transport Aircraft Performance", **AIAA-2000-4744, 8<sup>th</sup> AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimization**, Long Beach, California, September 2000.

Arrieta, A., Striz, A.G., and Venkayya, V.B., "Optimal Design of Aircraft Structures with Damage Tolerance Requirements", **AIAA-2000-4925, 8<sup>th</sup> AIAA/NASA/USAF/ISSMO Symposium on Multidisciplinary Analysis and Optimization**, Long Beach, California, September 2000.

## ADDITIONAL INVITED AND REFEREED CONFERENCE PAPERS

C. Plunkett, A.G. Striz, and J. Sobieszczanski-Sobieski, "Efficiency Improvements for the Displacement Based Multilevel Structural Optimization", **AIAA-2001-1552, 42<sup>nd</sup> AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference**, Seattle, Washington, April 16-19, 2001.

A. Arrieta and A. Striz, "Multidisciplinary Design Optimization with Damage Tolerance Constraints and a Probabilistic Load Environment", **IAA-2001-5216, First AIAA Aircraft Technology, Integration, and Operations Forum: Solution-Oriented Technological Applications and Operational Methodologies**, Los Angeles, California, October 16-18, 2001.

C. Plunkett, A.G. Striz, and J. Sobieszczanski-Sobieski, "Application of MPI in Displacement based Multilevel Structural Optimization", *Lecture Notes in Computer Science, Springer Verlag, Proceedings of the Euro PVM-MPI 2001*, Santorini (Thera) Island, Greece, April 2002.

A.G. Striz, J.L. Davis, S.K. Hopper, K.L. Rogers, B.A. Houshmand, and J. Sobieszczanski-Sobieski, "New Developments in Displacement Based Multilevel Structural Optimization", **43<sup>rd</sup> AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference**, Denver, Colorado, April 2002.

## MAJOR REPORTS

T.Y. Yang, A.G. Striz, and P. Guruswamy, "Flutter Analysis of Two-Dimensional and Two-Degree-of-Freedom Airfoils in Small-Disturbance Unsteady Transonic Flow", **AFFDL-TR-78-202**, AFFDL, Wright-Patterson AFB, Ohio, December 1978.

T.Y. Yang, P. Guruswamy, and A.G. Striz, "Aeroelastic Response Analysis of Two Dimensional, Single and Two Degree of Freedom Airfoils in Low-Frequency, Small-Disturbance Unsteady Transonic Flow", **AFFDL-TR-79-3077**, AFFDL, Wright-Patterson AFB, Ohio, June 1979.

T.Y. Yang, P. Guruswamy, and A.G. Striz, "Flutter Analysis of a Two-Dimensional and Two-Degree-of-Freedom Supercritical Airfoil in Small-Disturbance Unsteady Transonic Flow", **AFWAL-TR-80-3010**, AFWAL, Wright-Patterson AFB, Ohio, March 1980.

T.Y. Yang, A.G. Striz, and P. Guruswamy, "Flutter Analysis of Two-Dimensional and Two-Degree-of-Freedom MBB A-3, CAST 7, and TF-8A Supercritical Airfoils in Small-Disturbance Unsteady Transonic Flow", **AFWAL-TR-81-3004**, AFWAL, Wright-Patterson AFB, Ohio, March 1981.

A.G. Striz. "The Use of Experimental Input in Transonic Aerodynamics", Final Report, 1982 USAF/SCEEE Summer Faculty Research Program, AFATL, Eglin AFB, Florida, September 1982.

## ADDITIONAL MAJOR REPORTS

A.G. Striz and S.K. Jang, "Optimization of Tip Store Modeling", **AFOSR-TR-85-1089**, Air Force Office of Scientific Research, Bolling AFB, D.C., March 1985.

J.B. Peacock, R. Shambaugh, A.G. Striz, and J. Hordinsky, "EVA Suit Glove Design", Final Report to NASA/ASEE, May 1985.

A.G. Striz, "Aeroelasticity Options in ASTROS", Final Report, Visiting Scientist, Summer 1989, Flight Dynamics Lab, WRDC, Wright-Patterson AFB, Ohio, September 1989.

A.G. Striz, "Multibody Dynamics and Structural Optimization", **ASIAC-TR-89-12**, ANAMET Laboratories, November 1989.

A.G. Striz, "Influence of Structural and Aerodynamic Modeling on Flutter Analysis and Structural Optimization", **ASIAC Report 1090.10**, ANAMET Laboratories, February 1991; also: **WL-TR-91-3064**, Wright Laboratory, Wright Patterson AFB, Ohio, June 1991.

A.G. Striz and D.C. Stevens, "ASTRIGS User's Manual", Final Report to McDonnell Douglas Corporation, St. Louis, Missouri, November 1993.

A.G. Striz, Z. Wu, and J. Sobieszczanski-Sobieski, "An Efficiency Study of the Simultaneous Analysis and Design of Structures", **NASA TM-110168**, NASA Langley Research Center, Hampton, Virginia, April 1995.

P.C. Chen, D.D. Liu, D. Sarhaddi, A.G. Striz, D.J. Neill, and M. Karpel, "Enhancement of the Aeroservoelastic Capability in ASTROS", **WL-TR-96-3119**, Wright Laboratory, Wright-Patterson AFB, Ohio, May 1996.

P.C. Chen, D. Sarhaddi, D.D. Liu, and A.G. Striz, "Development of the Aerodynamic/Aero-servoelastic Modules in ASTROS: Volume 3: ZARO Applications Manual (F33615-96-C-3217)", **AFRL-VA-WP-TR-1999-3051**, Air Force Research Laboratory, Wright-Patterson AFB, Ohio, February 1999.

Numerous Internal Reports on Grant and Contract Work.

## MAJOR PRESENTATIONS

"Application of Differential Quadrature to Linear and Nonlinear Problems in Structural Mechanics", **University of California at Davis**, Davis, California, 1988.

"Application of Differential Quadrature to Linear and Nonlinear Problems in Structural Mechanics", **Pennsylvania State University**, State College, Pennsylvania, 1988.

## ADDITIONAL MAJOR PRESENTATIONS

"Anwendungen der Differential-Quadratur in der Technischen Mechanik",  
**Universität Stuttgart**, Stuttgart, West Germany, 1988.

"Influence of Aerodynamic and Structural Modeling on Flutter Analysis and Structural Optimization with Flutter Constraints of Fully Built-Up Wings", **Aerospace Flutter and Dynamics Council**, San Antonio, Texas, November 1990.

"Influence of Static and Dynamic Aeroelastic Constraints on Structural Optimization",  
**Aerospace Flutter and Dynamics Council**, Savannah, Georgia, May 1991.

"Influence of Sweep on the Structural Optimization of a Metal/Composite Fighter Wing",  
**Aerospace Flutter and Dynamics Council**, Williamsburg, Virginia, April 1992.

"An Interactive Model Generator/Preprocessor for ASTROS", **Aerospace Flutter and Dynamics Council**, Lancaster, California, May 1993.

"Multidisciplinary Optimization of a Metal Versus a Composite Transport Aircraft Wing",  
**Aerospace Flutter and Dynamics Council**, Scottsdale, Arizona, May 1994.

"Comparison of MDO Results from ASTROS and MSC/NASTRAN", **Aerospace Flutter and Dynamics Council**, St. Louis, Missouri, May 1996.

"Aeroelastic Wing Models for Analysis and Optimization", **Aerospace Flutter and Dynamics Council**, Savannah, Georgia, October 1997.

34 Presentations at Oklahoma AIAA/ASME Symposia and Academy of Sciences Meetings.  
Presentations in National and Local Academic, Government, and Industry Environments.

## **SPONSORED RESEARCH**

### **SINGLE INVESTIGATOR**

"Finite Element Modeling and Analysis of High Pressure Valve Body"

Sponsor: DEMCO, Subsidiary of Cooper Industries, 1982 (\$ 7,927)

"Optimization of Wing Tip Store Modeling"

Sponsor: US Air Force Office of Scientific Research, 1983-84 (\$ 12,000)

"Finite Element Modeling and Analysis of a Casinghead Body"

Sponsor: GULFCO, 1984 (\$ 4,574)

"Alternate Materials and New Processes for Use in Chassis Components"

Sponsor: CPC-Engineering, General Motors Corporation, 1985-86 (\$ 41,290)

"Finite Element Modeling and Analysis of a Jet Engine Starter Breech Chamber Connecting Ring"

Sponsor: US Air Force, OC-ALC/MMIRAE, Tinker AFB, 1987 (\$ 7,200)

"Alternate Materials and Manufacturing Processes for Use in Chassis Components"

Sponsor: CPC-Engineering, General Motors Corporation, 1987-88 (\$ 55,963)

"Detailed Linear and Nonlinear Finite Element Analyses of Sundstrand Breech Chamber Locking Lugs and Connector Ring"

Sponsor: US Air Force, OC-ALC/MMIRAE, Tinker AFB, 1988 (\$ 9,732)

"Review of 'Seat Occupant Model - Light Aircraft' (SOM-LA) for Possible Adaptation to PC Systems"

Sponsor: CAMI, Federal Aviation Administration, 1988 (\$ 8,494)

"Detailed Stress Analyses of Sundstrand Starter Turbine Rotors"

Sponsor: Support Systems Associates, 1991-93 (\$ 22,959)

"Adaptation of Computer Code 'Seat Occupant Model - Light Aircraft' (SOM-LA) to PC Systems under Extended DOS and UNIX"

Sponsor: CAMI, Federal Aviation Administration, 1991-92 (\$ 9,374)

"Interactive Preprocessor for the Creation of Fully Built-Up Finite Element Wing and Aircraft Models Including Body Panels and Lifting Surfaces for Integration with the Multidisciplinary Optimization Code ASTROS"

Sponsor: McDonnell Aircraft Company, 1992-93 (\$ 22,514)

"Efficient Structural Optimization"

Sponsor: NASA Langley Research Center, 1996-97 (\$ 7,443)

## **SINGLE INVESTIGATOR, Continued**

"Displacement Based Multilevel Structural Optimization"

Single Investigator Project in 1996 Oklahoma NASA EPSCoR Award

Sponsors: NASA (\$ 104,892), Oklahoma State Regents (\$ 89,527), 1996-1999

"An Analytic Study of the CAMI Sled Wire Brake Mechanism and the Development of a Wire Brake Simulation Model"

Sponsor: CAMI, Federal Aviation Administration, 1997-98 (\$ 14,000)

"Displacement Based Multilevel Structural Optimization"

Single Investigator Project in 1999 Oklahoma NASA EPSCoR Award

Sponsors: NASA (\$ 76,956), 1999-2000

"Displacement Based Multilevel Structural Optimization"

Single Investigator Project in 2000 Oklahoma NASA EPSCoR Award

Sponsors: NASA (\$ 86,026), 2000-2001

Curriculum Development Grant

Sponsor: Boeing Aerospace (\$ 5000), 2001

Student Research Support Grant

Sponsor: Oklahoma Space Grant Consortium (\$ 4,000), 2001

## **JOINT RESEARCH AS PI/CO-PI**

"A Comprehensive Stress and Life Cycle Analysis of B-52D Starter Breech Chambers", Co-PI with PI D.M. Egle and Co-PIs A.S. Khan, R.R. Daniels

Sponsor: US Air Force, OC-ALC/MMIRAE, Tinker AFB, 1983-85 (\$ 25,000 / 145,000)

"A Multidisciplinary Approach to Space Suit Glove Design", Co-PI

with Co-PIs J.B. Peacock, R. Shambaugh, J. Hordinsky

Sponsor: NASA/ASEE, 1984-85 (\$ 10,000 / 30,000)

"Nondestructive Characterization of Carbon-Carbon Composites", Co-PI, with PI R.A. Kline

Sponsor: NASA, 1989-94 (\$ 59,920 / 119,840)

"Real-Time Finite Element Analysis of NDE-Inspected Parts in Quality Control and In-Service Testing", PI, with Co-PI R.A. Kline

Sponsor: OCAST, State of Oklahoma, 1989-91 (\$ 29,850 / 29,850)

"Fracturing Fluid Characterization Facility", Research Associate

with PI J.C. Roegiers, Co-PIs R. Evans and J. Fagan, and Research Associates in various Schools

Sponsor: GRI/DOE, 1991-92 (\$ 81,343 / 17,000,000)

## **JOINT RESEARCH AS PI/CO-PI, Continued**

"Hypersonic Vehicle Technology Development", Co-PI  
with Co-PIs R. Cox, C.W. Bert, G. Emanuel, R.A. Kline, and M. Rasmussen  
Sponsor: Rockwell, 1992 (\$ 4,600 / 19,905)

"Aeroelastic Improvements to ASTROS - Phase I", Co-PI  
STTR to ZONA Technology, Inc., UAI, Inc., and the University of Oklahoma  
with PI P.C. Chen, Co-PI D. Neill, and consultant M. Karpel of Technion, Israel  
Sponsor: US Air Force, Wright-Patterson AFB, 1995-96 (\$ 29,191 / 100,000)

"Aeroelastic Improvements to ASTROS - Phase II", OU-PI  
STTR Phase II to ZONA Technology, Inc., UAI, Inc., and the University of Oklahoma  
with PI P.C. Chen, Co-PI D. Neill, and subcontractor M. Karpel of Technion, Israel  
Sponsor: US Air Force, Wright-Patterson AFB, 1996-98 (\$ 175,000 / 500,000)

Travel Grant with S. Gutman, Department of Mathematics, Co-PI  
Sponsor: NASA EPSCoR Prep Grant Round 1, 1999 (\$ 750 / 1,500)

Support Grant for Student Research with S. Gutman, Department of Mathematics, Co-PI  
Sponsor: NASA EPSCoR Prep Grant Round 1, 2000 (\$ 4,200 / 12,000)

"Launch Vehicle Design", Education Grant with D. Miller, Co-PI,  
Sponsor: OSIDA, Oklahoma City, 2001-02 (\$ 14,232 / 28,464)

## **INTERNAL MATCHING FUNDING**

Contributed Indirect Cost on Various Projects (\$ 69,000)

## **INDUSTRIAL IN-KIND FUNDING**

Equipment and Supercomputer Time (\$ 100,000)

## **INTERNAL DIRECT FUNDING**

Matching Funding, Equipment Funding, Center Funding (\$ 36,000)

## **GRADUATE STUDENT FUNDING**

NSF Graduate Student Fellowship, RDL/AFOSR Summer Graduate Student Fellowships,  
Bill Gates Fellowship, AIAA Graduate Student Fellowship for Various Students

## **SUMMER RESEARCH AND DEVELOPMENT**

- 1982 AFOSR Summer Faculty Research Program Fellow, Aircraft Compatibility Branch,  
Air Force Armament Lab, Eglin AFB, Florida
- 1985 Senior Project Engineer, Advanced Chassis Systems, CPC-Engineering,  
1986 General Motors Corporation, Warren, Michigan
- 1988 USAF Research and Engineering Scholar, Air Force Institute of Technology,  
Wright-Patterson AFB, Ohio
- 1989 Visiting Scientist, Flight Dynamics Laboratory, Wright Research and  
1990 Development Center, Wright-Patterson Air Force Base, Ohio
- 1994 ASEE Summer Faculty Fellow, Structures Division, NASA Langley Research  
1995 Center, Hampton, Virginia
- 1996 RDL/AFOSR Summer Faculty Research Fellow, Flight Dynamics Laboratory,  
Wright Laboratory, Wright-Patterson Air Force Base, Ohio

## SERVICE

### ACADEMIC SERVICE (Select Assignments)

<i>University:</i>	Faculty Senate Executive Committee	2002 - present
	Faculty Senate	1989 - 92, 2002 - present
	Campus Planning Council	1989 - 92
	Academic Programs Council	1999 - 2002
	Information Technology (IT) Council	1998 - 2001
	High Performance Computing (HPC) Committee	2001 - present
	Advisory Board Member, OU HPC Center	2001 - 2002
	Committee on Compensation	2000 - present
	Faculty Appeals Board	1988 - 91
<i>College:</i>	Associate Director, Center for Engineering Optimization	1997 - present
	Facilities Committee	1988 - 89
	Member of various curriculum, computer, and other ad-hoc committees	
<i>Department:</i>	Committee A	1995 - 97, 99 - 2001
	Graduate Liaison	1994 - 96, 2001 - 02
	ABET 2000 Committee Member, responsible for AE	1998 - 99
	Director Search Committee Chair	1994 - 95
	Director Search Committee Member	1989 - 90, 2000 - 01
	Intelligent Systems AE Search Committee Member	2000 - present
	Director, Computational Mechanics Research Lab	1996 - present
	AE Undergraduate Committee Chair	1998 - 2001
	AE Intelligent Systems Curriculum Committee Member	2000 - present
	Graduate Studies Committee Chair	1990 - 94, 96
	International Program Coordinator	1993 - 96
	Honors Program Coordinator	1988 - 94
	Chair and member of various search committees	
	Chair and member of various curriculum, computer, and other ad-hoc committees	

### PROFESSIONAL SERVICE

*Publications and Proposal Review:* Paper Reviewer for Journal of Aircraft, AIAA Journal, Journal of Sound and Vibration, International Journal of Solids and Structures, Mechanics Research Communications, International Journal for Numerical Methods in Engineering, Structural and Multidisciplinary Optimization, etc.;

Proposal Reviewer for the U.S. Civilian Research and Development Foundation (CRDF)

*Conference Organization:* Superchair, Session Organizer, Session Chairman, and Paper Reviewer for various Conferences, including the annual AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference and the biannual AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization.

## PROFESSIONAL SERVICE, Continued

### *Oklahoma NASA Space Grant Consortium (since 1993):*

Representative on the NASA Aeronautics Working Group	1996 - present
Representative on NASA SATS Panel	2000 - present
Associate Director of Research for OU	2000 - present

### *American Institute of Aeronautics and Astronautics (since 1976, Associate Fellow since 1992):*

#### Technical Committees (TCs):

Structural Dynamics (SD) Technical Committee	1993 - 96		
Subcommittee on Awards, Subcommittee on Publications, Liaison to MDO TC			
Multidisciplinary Design Optimization (MDO) Technical Committee	1993 - present		
Subcommittee on Publication, Chairman	2001 - present		
Vice Chair for Communications	1998 - 00		
Subcommittee on Benchmarking, Chairman	1995 - 98		
Subcommittee on Applications, Liaison to SD TC			
MDO Representative to 2001 SDM Conference	2000 - 01		
Oklahoma Section:			
Vice Chairman	1991 - 92	Chairman	1992 - 93
RAC Representative	1993 - 94	(1st Place: Outstanding Small Section)	
Region IV: Member, Associate Fellow Review Committee			2000, 01

### *International Society for Structural and Multidisciplinary Optimization (since 1994):*

Technical Committee on Benchmarking - US Coordinator	1994 - 99
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### *American Society of Mechanical Engineers (1981-1988, Senior Member):*

Central Oklahoma Section:	Member of the Executive Committee	1981 - 88	
Treasurer	1983 - 84	Program Chairman	1984 - 85
Vice Chairman	1985 - 86	Chairman	1986 - 87

## CONSULTING

Magnetic Peripherals, Inc., Oklahoma City, Oklahoma	1982 - 83
Byers Corporaion, Oklahoma City, Oklahoma	1984
Appl Engineering, Norman, Oklahoma	1984
Club Car, Inc., Augusta, Georgia	1988
Balon Corporation, Oklahoma City, Oklahoma	1992
Moricoli, Harris, Cottingham, and Hurst, Oklahoma City	1996 - 97
Governair, Oklahoma City	1997
Cooley-Godward, Los Angeles	1998
CMI, Inc., Oklahoma City	2000

## **PUBLIC SERVICE**

Knights of Columbus, Norman Council	Member and Officer	1983 - 92
St. Thomas More University Parish	Finance Committee	1996 - 97
Flaming Oaks Homeowners Association	Vice-President	1993 - 94
	President	1994 - 95, 2001 - 02
Washington Elementary PTA	Member	1990 - 95
Sea Scout Ship 5790, BSA	Adult Leader	1998 - present
USA Stars, Norman/Moore	Assistant Karate Instructor	1996 - 97, 99 - 2000
(Level: Nidan)	Karate Head Instructor	2001 - present
Norman Parks and Recreation	Assistant Karate Instructor	1997 - 99
OU Choirs	Member	1990 - 99, 2001, 2002
Academy of Model Aeronautics	Member	1997 - present

## **PROFESSIONAL AND HONOR SOCIETY MEMBERSHIPS**

American Institute of Aeronautics and Astronautics (AIAA)  
International Society for Structural and Multidisciplinary Optimization (ISSMO)  
American Society for Engineering Education (ASEE)  
American Association of University Professors (AAUP)

Sigma Gamma Tau, Aerospace Honor Society  
Sigma Xi, Scientific Research Honor Society  
Tau Beta Pi, Engineering Honor Society

## **AWARDS**

Fulbright Scholarship	1975, 1976
David Ross Fellowship, Purdue University	1977, 1978
Ralph R. Teetor Award, Society of Automotive Engineers	1984
Junior Faculty Development Award, University of Oklahoma	1984, 1985
Associates Distinguished Lecturer, University of Oklahoma	1986, 1987, 1988
L.A. Comp Outstanding Professor	2002
Finalist, Clarence E. Page Professorship in Aviation	1995/96
L.A. Comp Chair in Aerospace Engineering	2002 - present

Jane's Who's Who in Aviation and Aerospace: U.S. Edition  
Who's Who in Frontiers of Science and Technology  
American Men and Women of Science