

## **D. Joseph Mook**

Professor of Mechanical and Aerospace Engineering  
Assistant Dean for International Education  
School of Engineering and Applied Sciences  
State University of New York at Buffalo, Buffalo, NY 14260  
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### **Personal**

Married (Jayne); Three children (Michael 5/6/78; B.S. Air Force Academy, 2000; 1st Lt. USAF),  
(Jesse 10/26/1983; college student), (Lauren 11/5/1987; high school student)

### **Home Address**

1 Hummingbird Lane, Amherst, NY 14228 phone: 716-689-1915

### **Education**

Virginia Polytechnic Institute and State University (VPI&SU), Blacksburg, VA  
Ph.D., Engineering Mechanics (8/82-1/86)  
M.S., Engineering Mechanics (1/81-7/82)  
B.S., Engineering Science and Mechanics, Cum Laude, (9/75-6/79)  
Mathematics Minor

### **Relevant Employment History**

School of Engineering and Applied Sciences, State University of New York at Buffalo  
2/97-present: Assistant Dean for International Education  
Department of Mechanical and Aerospace Engineering, State University of New York at Buffalo  
8/97-present: Professor  
8/91-8/97: Associate Professor  
1/86-8/91: Assistant Professor  
Department of Electrical and Computer Engineering, State University of New York  
10/94-8/97: Adjunct Associate Professor  
Curt-Risch-Institut, University of Hannover, Hannover, Germany  
3/94-8/94: Visiting Scholar  
Technische Hochschule Darmstadt, Darmstadt, Germany  
6/92-7/92: Visiting Scholar  
Pratt & Whitney Aircraft Company, East Hartford, CT  
8/79-10/80: Analytical Engineer  
Department of Engineering Science and Mechanics, VPI&SU, Blacksburg, VA  
1/81-1/86: Graduate Assistant/Research Associate/Instructor  
6/75-6/79: Undergraduate Research Assistant  
Student Internships  
6/78-9/78: Biomedical Engineering Intern, Veteran's Administration Hospital, Salem, VA  
6/77-9/77: Engineering Intern, Xerox Corporation, Stamford, CT

## **Honors and Awards**

Elected to Executive Committee, Global Engineering Education Exchange (consortium of approximately 40 major US universities), 2001  
Elected Chairman, SEAS Faculty Personnel Committee, 2001-2002  
Milton Plesur Excellence in Teaching Award, Student Association of State University of New York at Buffalo, 2000 (1 of 5 campus-wide; only third engineering professor in 21 years)  
Research Fellow, JSPS (Japanese Society for the Promotion of Science), 2000  
Distinguished Visitor, invited to U.S.N. Aircraft Carrier *Harry S. Truman*, during training operations off the East Coast, May 2000  
Elected by colleagues to SEAS Faculty Personnel Committee Tenure, 1999 (3-year term)  
Elected by colleagues to Faculty Senate 1986-1987; 1998 (declined to serve); 2000-2002  
Research Fellow, Alexander von Humboldt Foundation, Bonn, Germany awarded 1993  
One of "Our Best Professors" in ***Reach***, User's Guide to U.B., published by the University at Buffalo Student Association, Fall 1992  
Elected Chairman of Niagara Frontier Section AIAA, 1992-1993  
University Teaching Fellow, University at Buffalo, 1991  
Ralph R. Teetor Outstanding Educator Award, Society of Automotive Engineers, 1989  
Pratt Presidential Fellow, College of Engineering, VPI&SU, 1981-1983  
Jurist, Graduate Honor Court, VPI&SU, 1983  
Daniel H. Pletta Award, Most Outstanding Senior Project, Department of Engineering Science and Mechanics, VPI&SU, 1979  
B.S. Degree awarded Cum Laude, 1979  
Member, Tau Beta Pi  
Member, Phi Kappa Phi  
Honorary Member, Pi Tau Sigma

## **Academic Courses Taught**

### **at VPI&SU:**

ESM 1000: Statics  
ESM 2000: Mechanics of Particles  
ESM 2020: Dynamics of Rigid Bodies  
ESM 2970: Independent Study (various topics)  
ESM 3060: Materials Testing Laboratory  
ESM 3070: Computational Methods

### **at SUNY/Buffalo:**

ASE/MAE 231: Introduction to Aerospace Engineering (Guest lectures)  
SYS 336 (now MAE 343): Systems Analysis  
SYS 435/535 (now MAE 443/543): Continuous Control Systems  
MAE 459: Capstone Design Course (various topics - see "New Courses Developed")  
MAE 455/565: Vibration and Shock  
MAE 499: Independent Study (various topics)  
SYS 500: System Identification  
MAE 501, 502: Individual Problems (various topics)  
SYS 571: Systems Analysis

SYS 581: Optimal Estimation  
SYS 599: Independent Study (various topics)

### **Special Courses Taught**

EngiNet Instructor (distance learning), MAE 543 - Continuous Control Systems, Fall 2002

EngiNet Instructor, MAE 543 - Continuous Control Systems, Fall 2001

EngiNet Instructor, MAE 455/565 - Vibration and Shock, Spring 1997

"Kalman Filters - Theory and Practice," taught at John Deere Dubuque Works, Dubuque, Iowa, March 1997.

EngiNet Instructor (distance learning), SYS 581 - Optimal Estimation Methods, Jan-May 1995

"Kalman Filters - Theory and Practice," taught at the General Motors Proving Ground, Milford, Michigan, January 1995.

"Special Study--Control," taught at Harrison Radiator Division of General Motors, Lockport, NY, Jan-May 1989.

"Continuous Control Systems," taught at Bell Aerospace, Niagara Falls, NY, Jan-May 1988.

"Sequential Least Squares/Kalman Filtering: Theory and Applications," taught at the Defense Mapping Agency Hydrographic/Topographic Center, Bethesda, MD, October 1985.

### **New Courses Developed**

**MAE 459 - Capstone Design Courses:** Various topics, all at least one semester, including: (1) SAE Supermileage Vehicle (design, construction, and racing of a vehicle in the SAE-sponsored Supermileage competition); (2) SAE Formula Car Vehicle (design, construction, and racing of a vehicle in the SAE-sponsored Formula Car competition); (3) The Predator (construction of a large-scale (20x55 ft.) working model roller coaster - *see Mechanical Engineering*, Sept. 1990; and (4) Electric Vehicle (design and construction of a electric vehicle).

**SYS 500 - System Identification:** Identification methods, time-domain models, frequency-domain models, observers, impulse response methods, frequency response methods, system realization theory, controllability and observability, minimum realizations, eigensystem realization algorithm, Markov parameters, Kalman filter identification, recursive methods.

**SYS 581 - Optimal Estimation Methods:** Review of optimization; linear and nonlinear least squares; statistical interpretation of least squares; minimum variance estimation; maximum likelihood estimation; Kalman filtering; smoothing; system identification; application topics.

### **Graduate Student Research Supervision (reverse chronological order of finish)**

#### **Ph.D.:**

1. Kyoo-Chul Choi, in progress
2. Chii-Chuan Chen, in progress
3. Kolodziej, Jason R., Ph.D., 2001. Dissertation Title: "A Robust Model Determination Algorithm For Nonlinear System Identification." Dr. Kolodziej is currently a Senior Research Engineer at the General Motors Global Alternative Propulsion Center (GAPC), Honeoye Falls, NY.

4. Al-Bassam, Bassam, Ph.D. 1997. Dissertation Title: "Time-Optimal Control Design Synthesis for Nonlinear Systems." Dr. Al-Bassam is currently Assistant Professor, Department of Mechanical Engineering, King Fahd University, Riyadh, Saudi Arabia.
5. Meyer, Thomas J., Ph.D. 1995. Dissertation Title: "A Batch Filter/State Estimator For Poorly-Modeled Distributed Parameter Systems - Application to Finite Element Model Updating." Dr. Meyer was formerly a Research Engineer with Bell Aerospace TEXTRON in Wheatfield, New York, and is currently with Lockheed Systems, Buffalo, New York. In 2001, Dr. Meyer was named "Inventor of the Year 2000" by Lockheed-Martin's Naval Electronics and Surveillance Systems Division.
6. Mason, Paul A.C., Ph.D. 1995. Dissertation Title: "Improved Estimation Via Model Error Quantification." Dr. Mason was formerly Assistant Professor, Department of Mechanical Engineering, University of Florida, Gainesville, Florida. He is currently with NASA Goddard in Greenbelt, MD. He was supported for four years as the recipient of a NASA Graduate Fellows Program fellowship.
7. McPartland, Michael D., Ph.D. 1994. Dissertation Title: "Nonlinear Model Identification of Human Skeletal Muscle and the Least Square Correlation Model Correction Algorithm." Dr. McPartland was a Senior Analytical Engineer with Metron Scientific in Washington, D.C., and is currently a Research Associate, Harvard University, Cambridge, Mass.
8. Crassidis, John L., Ph.D. 1993. Dissertation Title: "Integrated Estimation and Identification For Robust Control Of Multivariable Systems." Dr. Crassidis is currently Associate Professor, Department of Mechanical and Aerospace Engineering, University at Buffalo. He was formerly Assistant Professor, Department of Aerospace Engineering, Texas A&M University, College Station, Texas; and Assistant Professor of Mechanical Engineering at Catholic University in Washington, DC. Prior to this, he was a National Research Council Fellow at the NASA Goddard Space Flight Center. He was the winner of a 1991 Graduate Research Award (one of five nationally), Public-Sector Aviation Issues, Transportation Research Board of the National Research Council - \$5,000 plus presentation/publication of a paper at the Annual Meeting of the TRB in Washington, D.C., January 1992.
9. Stry, Greselda I., Ph.D. 1991. Dissertation Title: "Minimum Model Error Nonlinear Dynamic System Identification." Dr. Stry was supported for four years as the recipient of a NASA Graduate Fellows Program fellowship. She is currently with the Center for Naval Analysis in Arlington, Virginia.
10. Tsen, Fu-Min, Ph.D. 1991. Dissertation Title: "Optimal Design Techniques for H-infinity Control." Dr. Tsen is with the McDonnell Douglas Corporation, Princeton, New Jersey.
11. Roemer, Michael J., Ph.D. 1990. Dissertation Title: "Robust System Realization/Identification Via Optimal State Estimation." Dr. Roemer is currently a Senior Project Engineer with Stress Technology, Inc., in Rochester, New York. Prior to this, he was a Senior Engineer with Lord Corporation, Erie, Pennsylvania, and an adjunct Professor of Mechanical Engineering at Gannon University. Dr. Roemer's graduate research was recognized with two national awards: (i) Graduate Research Award (one of five nationally), Public-Sector Aviation Issues, Transportation Research Board of the National Research Council - \$5,000 plus presentation/publication of a paper at the Annual Meeting in Washington, D.C., January 1990, and (ii) a Jefferson Goblet Award from the 30th Structures, Structural Dynamics, and Materials Conference (one of six nationally) - \$400, an engraved

Jefferson cup, plus presentation/publication of a paper at the Conference in Mobile, Alabama, April 1989.

12. Lew, Jiannshiun H., Ph.D. 1989 Dissertation Title: "Application of Two-Point Boundary Value Problem Solution to Optimal Estimation and System Identification." Dr. Lew is currently Associate Professor, Center of Excellence in Information Systems, Tennessee State University, Nashville, Tennessee. Prior to this, he was a Research Scientist at NASA Langley Research Center, Hampton, Virginia.

**M.S.:**

1. Allen, Micah, in progress
2. Kolodziej, Jason R., 1999, "On the Application of the Minimum Model Error Algorithm for Control System Design"
3. Kim, Yun-sik, 1999, "The Investigation of the Covariance Constraint in the Minimum Model Error Algorithm"
4. Choi, Kyoo-Chul, 1999, "On the Robustness of MME for Nonlinear Model Identification"
5. Chen, Chii-Chuan, 1998, "On the Aircraft Automatic Landing System Using GPS"
6. Kelly, Daniel J., 1997, "Applied Techniques of Moisture Absorption from Compressed Air"
7. Roddewig, Axel, 1996, "Nonlinear System Identification for Automotive Durability"
8. Zhang, Chunda, 1996, "On the Robustness of Minimum Model Error Attitude Determination by Multiple Shooting"
9. Noll, Joachim, 1995, "Closed-Loop Time-Optimal Control of a Flexible Structure"
10. Wen, Jung (Peter), 1995, "On Nonlinear Model Correction For SAMPEX"
11. Cheng, Ping-Chin, 1995, "On the Robustness With Respect To Initial Model Accuracy of the Nonlinear Identification of SAMPEX"
12. Trost, Kelly A, 1995, "On Nonlinear Model Correction For SAMPEX"
13. DePena, Juan E., 1994, "Robust Attitude Estimation"
14. Lutz, Stefan, 1993, "On The Design Of Nonlinear Feedback Controllers"
15. Jain, Deepika, 1993, "Machine Vision: Progress and Prospects"
16. Pfister, Joerg, 1993, "Design of A Nonlinear Controller For Attitude Control In Satellite Dynamics"
17. Gordon, Walter O., 1993, "Design and Implementation of An Embedded Training Capability For Automatic Flight Inspection Systems"
18. Wentscher, Holger, 1993, "Longitudinal Motion Of A Supersonic Transport Aircraft"
19. Bailey, Randall E., 1993, "Pilot-Controller Modeling in Flight Handling Qualities Simulation"
20. Meyer, Thomas J., 1992, "Robust Identification of Nonlinear Systems"
21. Niemitz, Lothar, 1992, "Nonlinear System Identification By Minimum Model Error Estimation and Its Application to Astrodynamics"
22. Stibitzky, Erik, 1992, "A Study of Minimum Model Error (MME) Identification of Nonlinear Building Dynamics"
23. Tseng, Yuan-Wei, 1992, "Cruise Performance and Optimization of an Aircraft With Thrust Vectoring"
24. Mason, Paul A.C., 1991, "Scalar Gain Equivalents for Large-Order Multi-Input Multi-Output Filters"

25. Crassidis, John L., 1991, "Tracking And Control In An Automatic Carrier Landing System Utilizing Aircraft Sensor Information"
  26. McGrath, James M., 1991, "Optimal Vertical State Tracking Filters For Automatic Landing Systems"
  27. Gauthier, Peter J., 1990, "Optimal Closed-Loop Control of Nonlinear Systems Via Linear Feedback Estimation"
  28. Reinhold, Daniel G., 1990, "Identification of Nonlinear and Chaotic Systems: Analysis and Experiment"
  29. Swanson, Douglas A., 1990, "Optimization of Control and Filter Gains in an Automatic Carrier Landing System"
  30. Chafekar, Veena, 1990, "Frequency Filtering As A Noise Reduction Technique To Enhance The Accuracy Of ERA"
  31. Ghajar, Fadi, 1989, "Optimal Linear Feedback Control for Nonlinear Systems"
  32. Massaro, Vincent P., 1989, "Estimation of External Excitations for Linear Dynamic Systems"
  33. Rauch, Christopher J., 1989, "Modeling and Analysis of a Linear Force Motor"
  34. Roemer, Michael J., 1989, "An Automatic Carrier Landing System Simulation/Realization With Control Variable Optimization"
  35. Lin, Jih-Cheng, 1988, "Minimum Model Error Estimation of Modal Truncation Errors"
  36. Sanka, Ravi, 1988, "Automatic Generation of APT Code From A Part Drawing Database"
  37. Shyu, In-Ming, 1988, "Enhanced Tracking of Aircraft Utilizing Nonlinear, Force, Moment, and Control Estimation"
  38. Tong, Pao-Hong, 1988, "System Identification of Chaotic Systems"
  39. Sparago, Evan, 1988, "Monte Carlo Investigation of a Covariance Constraint"
  40. Lee, Cheng-Lung, 1988, "Parameter Identification in Nonlinear Dynamic Systems Using a Perturbation Approach"
  41. Lei, Tsenyu, 1988, "Parameter Identification in Time-Variant Linear Systems"
  42. Li, Young-Nien, 1988, "Estimation and Identification in Nonlinear Dynamic Systems Using a Minimum Model Error Approach"
  43. Li, Zheng-Ming, 1988, "Application of the Improved Gauss Constrained Optimization Technique"
  44. Tsai, Chung-Hu, 1988, "Determination of Stability Conditions of Linear Systems Using a Symbolic Manipulator Computer Program"
  45. Tsen, Fu-Min, 1986, "System Identification By A Matrix Exponential Method"
  46. Chang, Sun-Lai, 1986, "System Identification By The Minimum Model Error Estimation Technique"
  47. Ho, Fu-Sheng, 1986, "State Estimation and Parameter Identification By A Minimum Model Error Algorithm"
  48. Liu, Sheng-Ann, 1986, "Recovery of Damping Coefficients By The Minimum Model Error Technique"
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1. Smeader, John, M.S. 2002
  2. Saglime III, Frank J., M.S., 2002
  3. Kehoe IV, John, M.S. 2001
  4. Koeth, Elizabeth, M.S. 2001
  5. Giraud, Gael, M.S. 2001
  6. Lambert, James, M.S. 2001
  7. Kim, Bumsoo, M.S. 2001
  8. Bucklaew. Thomas, Ph.D., 2001

9. Harth, Kai, M.S., 2001
10. Sodtke, Christof, M.S. 2000
11. Rosso, Carole, M.S., 2000
12. Bradford, Paul, Ph.D., 2000
13. Mosher, Michael, M.S., 2000
14. Hindle, Timothy, M.S. 2000
15. Shih, Ta-Ming, Ph.D., 2000
16. Muenchhof, Marco, M.S., 2000
17. Sun, Chih-Ming, M.S., 1999
18. Kuo, Yong-Lin, M.S., 1999
19. Muench, David G., M.S., 1999
20. Chen, Chun-Fu, M.S., 1999
21. Kang, Yoon-Kyoung, M.S., 1999
22. Thurston, Michael G., Ph.D., 1998
23. Tenne, Dirk, M.S., 1998
24. Hayakawa, Tomohisa, M.S., 1998
25. Huang, Yau-Li, M.S., 1998
26. Chen, Tzung-Cheng, M.S., 1998
27. Lin, Li, M.S., 1997
28. Baker, Erik, M.S., 1997
29. Huang, Tsai-Jeon, Ph.D., 1997
30. Moulton, Brian, M.S. 1997
31. Hong, Wien, Ph.D., 1997
32. Alli, Hassan, Ph.D., 1997
33. Fink, Alex, M.S., 1997
34. Ge, Ling, Ph.D., 1996
35. Liu, Shin-War, Ph.D., 1996
36. Kokes, Guy L., M.S., 1995
37. Crassidis, Agememnon, Ph.D., 1995
38. Ducourau, Lazare, M.S., 1995
39. Crowe, Thomas J., M.S., 1995
40. Balakrishnan, Prasad, M.S., 1995
41. Dawes, Clint R., M.S., 1995
42. Call, Robert D., M.S., 1995
43. Lu, W.-F., M.S., 1995
44. Paraskevopolous, I., M.S., 1995
45. Varsos, Eleftherios S., M.S., 1994
46. Slater, Joseph C., Ph.D., 1993
47. Schulz, Mark S., Ph.D., 1993
48. Haghpasand, Khorssand, Ph.D. 1993
49. Lam, Marca, M.S. 1993
50. Halter, Michael J., M.S. 1993
51. Rao, Chikka, M.S. 1993
52. Chopra, Ajay, M.S., 1993
53. Simmermacher, Todd W., M.S. 1993
54. Ford, Jeffrey M., M.S., 1993
55. Golden, Owen, M.S., 1993
56. Delcham, Hendrik D., M.S., 1993
57. Oberle, Christian, M.S. 1992
58. Rietz, Ralph, M.S. 1992
59. Al-Bassam, Bassam A., M.S. 1992
60. Bin, Song Jae, M.S. 1992
61. Monroe, David, M.S. 1991
62. Kress, Andreas, M.S. 1991
63. Lin, Jung-Shan, M.S. 1991
64. Ma, Xincheng, Ph.D. 1991
65. Hess, Daniel, Ph.D. 1991
66. Udani, Ashish, M.S. 1991
67. Remington, Darwin, M.S. 1990
68. Sah, Frank, Ph.D. 1990
69. Missailidis, Petros, M.S. 1990
70. Ross, Alpha, Ph.D. 1990
71. Spumey, Joseph, M.S. 1989
72. Eggert, Rudolph, Ph.D. 1989
73. Garcia, Ephraim, Ph.D. 1989
74. Minas, Constantinos, Ph.D. 1989
75. Johnson, Dexter, M.S. 1989
76. Korpanty, Daniel, M.S. 1989
77. Bellos, John, Ph.D. 1989
78. Su, Echung, M.S. 1989
79. Hess, Daniel, M.S. 1988
80. Sheth, Upendra, M.S. 1988
81. Ren, Aihua, M.S. 1987
82. Judd, Robert, M.S. 1987
83. Bellos, John, M.S. 1987
84. Garcia, Ephraim, M.S. 1987
85. Zimmerman, David, Ph.D. 1987
86. Lochocki, Ronald, M.S. 1987
87. Liang, Zhong, Ph.D. 1987
88. Lai, Shy-Wen, M.S. 1987
89. Cook, Pauline, M.S. 1987
90. Kodali, Rajanagaprasad, M.S. 1986
91. Angeli, Andreas, M.S. 1986
92. Sadlon, Richard, M.S. 1986
93. Cudney, Harley, M.S. 1986
94. Lew, Jiannshiun, M.S. 1986

**Grants and Contracts Received**

<b>TITLE</b>	<b>SOURCE</b>	<b>PERIOD</b>	<b>AMOUNT</b>
Establishment of the Indo-American Institute of Technology	SSF	Indefinite (start delay)	Approx. \$6M / year
Student Transatlantic Mobility in Automotive Engineering (consortium)	FIPSE	10/98-pres	\$8,600
Nonlinear Identification Tool for Model Predictive Control	Praxair	6/1/00- 8/31/00	\$5,500
JSPS Short-Term Invitation Fellowship for Research in Japan	JSPS	1/00	\$8,500
Real-Time Model Updating and Optimization of Set-point to the Model Predictive Control (50% resp.)	Praxair	4/96-5/2000	\$32,000
Alexander von Humboldt Research Fellow Award	A.v.H.	1/94-8/94	\$22,000
Robust Attitude Determination	NASA	7/93-6/96	\$66,000
A Minimum Model Error Approach To Attitude Determination	NASA	1/93-7/95	\$93,344
Theoretical Constraints in the Design of Multivariable Control Systems (50% resp.)	NASA	4/92-10/92	\$40,000
Identification of Space Structures	NASA	7/89-7/93	\$82,000
Aerospace Control Systems	CUBRC	1/92-4/92	\$5,380
Control of ACLS Radar Pedestal Drive	Bell Aero.	1/91-12/91	\$32,000
Solar Electric Vehicle Design	OTE	1/91-5/91	\$2,850
Linear and Nonlinear System Identification for Space Structures	NASA	2/89-10/91	\$103,000
Nonlinear Identification	NASA	8/89-8/91	\$40,000
Experienced Faculty Travel Award	NYS/UUP	6/90-8/90	\$500
Development and Evaluation of Flight Dynamics Based Tracking Filters	Bell Aerospace	1/90-12/90	\$30,000
Tracking and Control Laws for the Automatic Carrier Landing System	Bell Aerospace	1/89-12/89	\$29,000
Vertical State Filters for Automatic Carrier Landing Systems	Bell Aerospace	1/89-12/89	\$27,000□
Performance Enhancement of a Direct-Drive Servovalve	Moog, Inc	9/88-6/89	\$20,969
Evaluation of Tracking and Control Laws for Automatic Landing	Bell Aerospace	1/88-12/88	\$28,000
Analytical and Experimental Modeling and Control of Flexible Structures (33% resp.)	AFOSR	12/87-12/90	\$558,000□
Modeling of a Direct-Drive Servovalve	Moog	9/87-9/88	\$22,990
New Faculty Development Award	NYS/UUP	6/87-6/88	\$750
Sponsored Programs Development Grant	U. Buffalo	5/87-6/88	\$3,000
Travel Grant	U.S. Army	10/86	\$250
Faculty Development Workshop Grant	U. Buffalo	8/86	\$400

Enhanced Attitude Estimation

NSWC

10/85-1/86

\$25,000

**Consulting Activities**

1. James Giambrone, Atty, 2002
2. John Deere, 1997
3. Ford Motor Company, 1993-1997
4. General Motors, 1995
5. Steven W. Shaw and Associates, 1993-1994
6. Alpha Engineering, 1993
7. Philip Rimler, Atty, 1991
8. Joseph Lupo, Inc., 1987
9. Sigma Scientific, 1986

**Invited Papers, Presentations, and Seminars (reverse chronological order)**

1. Several dozen presentations related to International Education opportunities to UB students, parents, faculty, and administrators, Spring 1997 - present.
2. "Minimum Model Error Estimation for Nonlinear System Identification," Tohoku University, Sendai, Japan, January 2000.
3. "Life, Liberty, Engineering, and the Pursuit of Happiness," after-dinner talk at the induction ceremony of Pi Tau Sigma, Mechanical Engineering Honor Society, May 1996.
4. "Nonlinear Model Correction for SAMPEX Attitude Estimation," 19th Annual AAS Rocky Mountain Guidance and Control Conference, Breckenridge, CO, February 1996.
5. "Minimum Model Error Estimation - Theory and Applications," Curt-Risch Institut, University of Hannover, Hannover, Germany, April 1994.
6. "Spacecraft Controls Research at the University at Buffalo," Second Annual Northeast Space Development Conference, Center for Tomorrow, Buffalo, NY October 1993.
7. "Identification of Nonlinear Dynamic Systems," Ford Motor Company, Dearborn, MI, September 1993.
8. "Minimum Model Error Theory and Applications," Technical University of Munich, Munich, Germany, July 1992.
9. "Minimum Model Error Theory and Applications," Deutsche Forschungsanstalt fur Luft- und Raumfahrt e.V., Oberpfaffenhofen, Germany, July 1992.
10. "Minimum Model Error Theory and Applications," Universitat Hannover, Hannover, Germany, July 1992.
11. "Minimum Model Error Theory and Applications," Technische Hochschule Darmstadt, Darmstadt, Germany, June 1992.
12. "Electric Vehicle Design," Solar Electric System Festival, Gowanda, NY, June 1992.
13. "Automatic Aircraft Carrier Landing Systems," Patuxent River Naval Surface Warfare Center, Patuxent River, MD, March 1992.
14. "Automatic Aircraft Carrier Landing Systems," Rensselaer Polytechnic Institute, Department of Mechanical, Nuclear, and Aerospace Engineering, Troy, NY June 1991.
15. "Minimum Model Error (MME) Estimation - Theory and Applications," University of Texas, Department of Aerospace Engineering and Engineering Mechanics, Austin, TX, April 1991.
16. "Automatic Aircraft Carrier Landing Systems," George Washington University, Department of Aerospace Engineering and Engineering Mechanics, Washington, DC, April 1991.

17. "Minimum Model Error (MME) Estimation - Theory and Applications," University of Wisconsin, Department of Engineering Mechanics, Madison, WI, March 1991.
18. "Automatic Aircraft Carrier Landing Systems," University of Texas, Department of Aerospace Engineering and Engineering Mechanics, Austin, TX, February 1991.
19. "Robust Realization/Identification for Control of Large Space Structures", invited to the 1991 American Control Conference, Boston, MA, May 1991 (Full paper in proceedings).
20. "Automatic Aircraft Carrier Landing Systems", invited presentation, AIAA Buffalo Section Meeting, Buffalo, NY, March 1991.
21. "Identification of Nonlinear Aerodynamic Ground/Effects From Flight Test Data", invited presentation, CUBRC Board of Directors Meeting, Buffalo, NY, February 1991.
22. "Identification of Nonlinear and Chaotic Systems: Analysis and Experiment", Seminar, Naval Surface Warfare Center, Silver Springs, MD, May 1990.
23. "Minimum Model Error (MME) Estimation with Applications to Optimal Estimation and System Identification", Seminar, Rutgers University, Department of Mechanical and Aerospace Engineering, Rutgers, NJ, April 1990.
24. "Proposal Preparation in Science and Engineering", Workshop, Graduate Student Association, State University of New York at Buffalo, Buffalo, NY, April 1990.
25. "Minimum Model Error (MME) Estimation with Applications to Optimal Estimation and System Identification", Seminar, Michigan State University, Department of Mechanical Engineering, East Lansing, MI, March 1990.
26. "An Optimal Estimation Approach for Enhanced Identification of Large Space Structures", invited to the Southeastern Conference on Theoretical and Applied Mechanics (SECTAM XV), Atlanta, GA, March 1990 (Full paper in proceedings).
27. "Minimum Model Error Estimation with Applications to Optimal Control, Optimal Estimation, and System Identification", Seminar, University of Michigan, Department of Mechanical Engineering and Applied Mechanics, Ann Arbor, MI, March 1989.
28. "Parameter Identification in Chaotic Systems", invited to the AFOSR/ARO Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures and Mechanisms, Blacksburg, VA, June 1988.
29. "Minimum Model Error Estimation and Some Applications", Seminar, NASA Langley Research Center, June 1988
30. "Numerical and Experimental Robustness Investigation of Time-Domain Realization/Identification Techniques", invited to the International Conference on Computational Engineering Science (ICES-88), Atlanta, GA, April 1988 (Full paper in proceedings).
31. "Life, Liberty, Engineering, and the Pursuit of Happiness", ASME University at Buffalo Student Section, Buffalo, NY, February 1988.
32. "Minimum Model Error Estimation of Modal Truncation Effects", invited to the 1987 Spring Meeting of the Society of Experimental Mechanics, Houston, TX, June 1987 (Full paper in proceedings).

### **Other Presentations**

1. "On The Robustness of MME-Based Attitude Dynamics Identification," Midwestern Mechanics Conference, Ames, IA, October 1995.
2. "Robust Attitude and Attitude Rate Estimation for SAMPEX," AAS/AIAA Spaceflight Mechanics Meeting, Cocoa Beach, FL, February 1994.
3. "Dynamics-Based Robust Attitude Estimation", AAS/AIAA Astrodynamics Specialist Conference, Victoria, BC, August 1993.
4. "Robust Attitude Estimation Without Rate Gyros," Proceedings of the AAS/GSFC International Symposium on Space Flight Dynamics, Greenbelt, MD, April 1993.
5. "Capabilities Review in Advanced Estimation, Filtering, Guidance, Control, and Identification", Eglin Air Force Base, FL, November 1991.
6. "Robust Realization/Identification for Control of Large Space Structures", 1991 American Control Conference, Boston, MA, May 1991.
7. "Correlation Techniques to Determine Model Form in Robust Nonlinear System Realization/Identification", NASA Goddard Space Flight Center, Greenbelt, MD, May 1991.
8. "Robust Identification of Nonlinear Structural Damping," Damping '91, San Diego, CA, February 1991.
9. "Correlation Techniques In Robust Nonlinear System Realization/Identification", AAS/AIAA Space Flight Mechanics Conference, NASA Johnson Space Flight Center, Houston, TX, February 1991.
10. "Nonlinear Aircraft Tracking Filter Utilizing Control Variable Estimation", AIAA Guidance, Navigation, and Control Conference, Portland, OR, August 1990.
11. "Improved Noise Rejection in the AN/SPN- 46A Automatic Carrier Landing System", AIAA Guidance, Navigation, and Control Conference, Portland, OR, August 1990.
12. "Identification of Nonlinear Dynamic Systems", Third Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures and Mechanisms, Blacksburg, VA, June 1990.
13. "Robust Identification of Nonlinear Dynamic Systems", Flight Mechanics/Estimation Theory Symposium, NASA/Goddard Space Flight Center, Greenbelt, MD, May 1990.
14. "Nonlinear System Identification", 26th Annual Meeting of the Society for Engineering Science, Ann Arbor, MI, September 1989.
15. "Identification of Nonlinear Dynamic Systems", 20th Pittsburgh Modeling and Simulation Conference, Pittsburgh, PA, May 1989.
16. "Optimal Post-Experiment Estimation of Poorly Modeled Dynamic Systems", Seventh NASA Flight Mechanics/Estimation Theory Conference, Goddard Space Flight Center, May 1988.
17. "Estimation and Identification of Nonlinear Dynamic Systems", 29th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics, and Materials Conference, Williamsburg, VA, April 1988.
18. "Reduced Noise Sensitivity of the Eigensystem Realization Algorithm", 29th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics, and Materials Conference, Williamsburg, VA, April 1988.
19. "Numerical and Experimental Robustness Investigation of Time-Domain Realization/Identification Techniques", AFOSR Workshop on Control of Flexible Structures, Atlanta, GA, April 1988.

20. "Damping Determination From Noisy State Measurements", ASME Vibrations Conference, Boston, MA, September 1987.
21. "Linear System Identification Using Matrix Exponential Sensitivities", Sixth VPI&SU/AIAA Symposium on Dynamics and Control of Large Structures, Blacksburg, VA, June 1987.
22. "Estimation of External Forces From Noisy State Measurements", 1987 American Control Conference, Minneapolis, MN, June 1987.
23. "Force Estimation Using State Measurements", 11th Canadian Congress of Applied Mechanics, Edmonton, Alberta, Canada, June 1987.
24. "Optimal Parameter Estimation From Minimum Model Error Estimation", Eighteenth Pittsburgh Modeling and Simulation Conference, Pittsburgh, PA, April 1987.
25. "Force Estimation in Nonlinear Dynamic Models", AFOSR/ARO Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures and Mechanisms, Blacksburg, VA, March 1987.
26. "Measurement Covariance Constrained Estimation for Poorly Modeled Dynamic Systems", 25th AIAA Aerospace Sciences Meeting, Reno, NV, January, 1987.
27. "Estimation in the Presence of Model Errors", 23rd Annual Meeting, Society of Engineering Science (SES), Buffalo, NY, August 1986.
28. "A Measurement Covariance Constrained Estimator", 23rd Annual Meeting, Society of Engineering Science (SES), Buffalo, NY, August 1986.
29. "Resolution of Inconsistent Least Squares Solutions", 22nd Annual Meeting, Society of Engineering Science, State College, PA, October 1985.
30. "Enhanced Spacecraft Attitude Estimation", Defense Mapping Agency Hydrographic/Topographic Center, Bethesda, MD, August, 1985.
31. "Inconsistent Least Squares Reductions". Mountain Lake Dynamics and Control Institute, Mountain Lake, VA, June 1985.
32. "Inconsistent Least Squares Solutions", Dynamics Group Seminar, VPI & SU, Blacksburg, VA, April 1985.
33. "Summary of Methods for the Resolution of Inconsistent Least Squares Reductions", Naval Surface Weapons Center, Dahlgren, VA, February 1985.
34. "True Orbit Position and Attitude Determination with Associated Temporal Covariance Matrices", Naval Surface Weapons Center, Dahlgren, VA, February 1985.
35. "A Method for the Resolution of Inconsistent Least Squares Reductions", Dynamics Group Seminar, VPI & SU, Blacksburg, VA, October 1984.
36. "A Minimum Model Error Approach to Covariance Constrained Estimation", Dynamics Group Seminar, VPI & SU, Blacksburg, VA, May 1984.
37. "Status Report on Implementation of a Minimum Model Error Approach to Covariance Constrained Estimation", Defense Mapping Agency, Hydrographic/Topographic Center, Bethesda, MD, April 1984.
38. "Development of a Truth Model and Measurement Simulation Program for Enhanced Spacecraft Attitude Estimation", Defense Mapping Agency Hydrographic/Topographic Center, Bethesda, MD, April 1984.

### **Journal Publications**

1. Crassidis, J.L., and Mook, D.J., "Integrated Estimation/Identification Using Second-Order Dynamic Models," ASME Journal of Vibration and Acoustics, Vol. 119, No. 1, pp. 1-8, January 1997.
2. McPartland, M.J., and Mook, D.J., "A Robust Transcutaneous Electro-Muscle Stimulator (RTES): A Multi-Modality Tool," Journal of Medical Engineering and Physics, Vol. 17, No. 4, pp. 314-318, April 1995.
3. Crassidis, J.L., Leo, D.J., Inman, D.J., and Mook, D.J., "Robust Identification and Vibration Suppression of a Flexible Structure," AIAA Journal of Guidance, Control and Dynamics, Vol. 17, No. 5, pp. 921-928, Sep.-Oct. 1994.
4. Mook, D.J., "Robust Attitude Estimation Without Rate Gyros," Advances in the Astronautical Sciences, Vol. 84, Part 1, pp. 713-727, 1993.
5. Crassidis, J.L., Mason, P.A.C., and Mook, D.J., "A Riccati Solution for the Minimum Model Error Algorithm," AIAA Journal of Guidance, Control, and Dynamics, Vol. 16, No. 6, pp. 1181-1183, Nov.-Dec. 1993.
6. Crassidis, J.L., Mook, D.J., and McGrath, J., "An Automatic Carrier Landing System Utilizing Aircraft Sensors," AIAA Journal of Guidance, Control, and Dynamics, Vol. 16, No. 5, pp. 914-921, Sept.-Oct. 1993.
7. Roemer, M.J., and Mook, D.J., "Mass, Stiffness, and Damping Matrix Identification: An Integrated Approach," ASME Journal of Vibration, Acoustics, Stress, and Reliability in Design, Vol. 114, No. 3, pp. 358-363, July 1992.
8. Roemer, M.J., and Mook, D.J., "Robust Modal Identification/Estimation of the Minimast Testbed," AIAA Journal of Guidance, Control, and Dynamics, Vol. 15, No. 3, pp. 642-647, May-June 1992.
9. Mook, D.J., and Stry, G.I., "An Analog Experimental Study of Nonlinear Identification," Nonlinear Dynamics, Vol. 3, No. 1, pp. 1-11, 1992.
10. Mook, D.J., Swanson, D.A., Roemer, M.J., and Noury, R., "Improved Noise Rejection in Automatic Carrier Landing Systems," AIAA Journal of Guidance, Control, and Dynamics, Vol. 15, No. 2, pp. 509-519, March-April 1992.
11. Mook, D.J., Shyu, I.-M., "A Nonlinear Aircraft Tracking Filter Utilizing Control Variable Estimation," AIAA Journal of Guidance, Control, and Dynamics, Vol. 15, No. 1, pp. 228-237, Jan.-Feb. 1992.
12. Stry, G. I., and Mook, D. J., "Correlation Techniques In Robust Nonlinear System Realization/Identification," Advances in the Astronautical Sciences, Vol. 75, Part 1, pp. 453-470, 1991.
13. Mook, D.J., and Lew, J.-H., "An Existence and Uniqueness Proof for the Minimum Model Error Estimation Algorithm," AIAA Journal of Guidance, Control, and Dynamics, Vol. 14, No.5, pp. 1064-1067, Sept.-Oct. 1991.
14. Mook, D.J., and Lew, J.-H., "Multiple Shooting Algorithms for Jump-Discontinuous Problems in Optimal Control and Estimation," IEEE Transactions on Automatic Control, Vol. 36, No. 8, pp. 979-983, August 1991.
15. Roemer, M.J., Schlonski, S.T., and Mook, D.J., "Robust Time-Domain Modal Identification On Microcomputers," Experimental Techniques (Society for Experimental Mechanics), Vol. 14, No. 6, pp. 44-46, Nov.-Dec. 1990.

16. Mook, D.J. and Lew, J.H., "A Robust Algorithm for System Realization/Identification," AAS Journal of the Astronautical Sciences , Vol. 38, No. 2, pp. 229-243, April-June 1990.
17. Roemer, M.J., and Mook, D.J., "Enhanced Realization/Identification of Physical Modes," ASCE Journal of Aerospace Engineering, Vol. 3, No. 2, pp. 122-136, April 1990.
18. Mook, D.J., "Estimation and Identification of Nonlinear Dynamic Systems," AIAA Journal, Vol. 27, No. 7, pp. 968-974, July 1989.
19. Meidenbauer, Janet, and Mook, D.J., "Identification of Nonlinear Dynamic Systems," Modeling and Simulation, Vol. 20, No. 5, pp. 2111-2115, May 1989.
20. Mook, D.J., and Junkins, J.L., "Minimum Model Error Estimation for Poorly Modeled Dynamic Systems," AIAA Journal of Guidance, Control and Dynamics, Vol. 11, No. 3, pp. 256-261, May-June 1988.
21. Mook, D.J., Liu, S.-A., and Ho, F.-S., "Optimal Parameter Estimation From Minimum Model Error Estimation," Modeling and Simulation, Vol. 18, No. 4, pp. 1481-1486, April 1987.

### **Book Chapters/Sections**

1. Ge. L., Meyer, T.J., Mook, D.J., and Soong, T.T., "Damage Assessment Through Nonlinear Structural Identification," pp. 238-254 in Safety Evaluation Based on Identification Approaches, ed. by H.G. Natke, G.R. Tomlinson, and J.T.P. Yao, Friedr. Vieweg & Sohn Verlagsgesellschaft mbH, Braunschweig/Weisbaden, 1993.

### **Conference Proceedings - Published Full Papers**

1. Al-Bassam, B., and Mook, D.J., "Simultaneous Control of Orbit and Attitude Maneuvers for the GRO Satellite," AAS/AIAA Astrodynamics Conference, Sun Valley, Idaho, August 1997.
2. Al-Bassam, B., and Mook, D.J., "Feedback Time-Optimal Control Synthesis for Flexible Structures With Damping," AAS 97-194, AAS/AIAA Space Flight Mechanics Meeting, Huntsville, AL, February 1997.
3. Al-Bassam, B., and Mook, D.J., "Feedback Time-Optimal Control Synthesis for Flexible-Link Manipulators," 1997 International Conference on Mobile Planetary Robots and Rover Roundup, Santa Monica, CA, January 1997.
4. Mason, P.A.C., and Mook, D.J., "A Model Uncertainty Compensation Filter," Proceedings of the 1995 AIAA Guidance, Navigation, and Control Conference, Baltimore, MD, August 1995
5. Meyer, T. J., and Mook, D. J., "A Batch Filter and State Estimator for Poorly Modeled Distributed Parameter Systems," AIAA paper #95-3217, Proceedings of the 1995 AIAA Guidance, Navigation, and Control Conference, August 1995.
6. Mook, D.J., et. al., "Use of Nonlinear System Identification in Robust Attitude and Attitude Rate Determination," Proceedings of the 1995 AIAA Guidance, Navigation, and Control Conference, Baltimore, MD, August 1995.
7. Mason, P.A.C., Crassidis, A.J., Mook, D.J., and Mayne, R.L., "Development of an Accurate Observer for Slewing Systems," 1995 American Control Conference, Seattle, WA, June 1995.
8. Wen, J., Trost, K.L., and Mook, D.J., "On Nonlinear Identification in Robust Attitude and Attitude Rate Determination for SAMPEX," 1995 Flight Mechanics/Estimation Theory Symposium, NASA/Goddard Space Flight Center, May 1995.

9. Mason, P.A.C., Mook, D.J., "A Method for Tuning an Attitude Estimator," Proceedings of the 1995 Flight Mechanics Estimation Theory Symposium, NASA/Goddard Space Flight Center, Vol. 1, pp. 127-135, 1995.
10. Crassidis, J.L., Mook, D.J., "A Real-Time Model Error Filter and State Estimator," Proceedings of the AIAA Guidance, Navigation, and Control Conference, Scottsdale, AZ, August 1994.
11. Mason, P.A.C., Mook, D.J., "A Process Noise Covariance Estimator," Proceedings of the AIAA Guidance, Navigation, and Control Conference, Vol. 1, pp. 103-112, Scottsdale, AZ, August 1994.
12. Meyer, T.J., and Mook, D.J., "Realization of Closed-Loop Specific Optimal Control," Proceedings of the 1994 American Control Conference, Chicago, IL, June 1994.
13. DePena, J.E., Crassidis, J.C., McPartland, M.D., Meyer, T.J., Mook, D.J., "MME-Based Attitude Dynamics Identification and Estimation for SAMPEX," Proceedings of the Flight Mechanics/Estimation Theory Symposium, NASA Goddard Spaceflight Center, pp. 497-511, May 1994.
14. Meyer, T.J., Crassidis, A.L., Mook, D.J., and Mayne, R.E., "Application of Suboptimal Control to a Flexible Manipulator," AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Hilton Head, SC, AIAA-94-1563, April 1994.
15. Crassidis, J.L., Meyer, T.J., Mook, D.J., and DePena, J., "Robust Attitude and Attitude Rate Estimation for SAMPEX," AAS/AIAA Spaceflight Mechanics Meeting, Cocoa Beach, FL, AAS Paper 94-153, February 1994.
16. Mook, D.J., DePena, J., Crassidis, J.L., and Meyer, T.J., "Dynamics-Based Robust Attitude Estimation", AAS/AIAA Astrodynamics Specialist Conference, Victoria, BC, AAS Paper 93-554, August 1993.
17. Crassidis, J.L., Leo, D.J., Mook, D.J., and Inman, D.J., "Robust Identification and Vibration Suppression of a Flexible Structure," AIAA Guidance, Navigation, and Control Conference, Monterey, CA, AIAA-93-3874, August 1993.
18. Crassidis, J.L., Mason, P.A.C., and Mook, D.J., "A Sweep Method Solution for the Minimum Model Error Algorithm", Proceedings of the 14th Canadian Congress of Applied Mechanics, Kingston, Ontario, Canada, June 1993.
19. Crassidis, J.L., and Mook, D.J., "Integrated Identification/Estimation Using Second-Order Dynamic Models," 9th Symposium on Dynamics and Control of Large Structures, Blacksburg, VA, May 1993.
20. Mook, D.J., "Robust Attitude Estimation Without Rate Gyros," Proceedings of the AAS/GSFC International Symposium on Space Flight Dynamics, Greenbelt, MD, April 1993.
21. Ge, L., Meyer, T.J., Mook, D.J., and Soong, T.T., "Damage Assessment Through Nonlinear Structural Identification," Proceedings of the Identification Workshop, Lambrecht, Germany, September 1992.
22. Bailey, R.E., and Mook, D.J., "Pilot Control Identification Using Minimum Model Error Estimation," Proceedings of the 1992 AIAA Atmospheric Flight Mechanics Conference, Hilton Head, SC, August 1992.
23. Meyer, T.J., and Mook, D.J., "Robust Identification of Nonlinear Aerodynamic Model Structure", Proceedings of the 1992 AIAA Atmospheric Flight Mechanics Conference, Hilton Head, SC, pp. 458-467, August 1992.

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25. Crassidis, J.L., and Mook, D.J., "Robust Control Design of an Automatic Carrier Landing System from Time-Domain Data," Proceedings of the 1992 AIAA Guidance, Navigation, and Control Conference, Hilton Head, SC, pp. 1471-1481, August 1992.
26. Lew, J.-H., and Mook, D.J., "Multiple Shooting Algorithms for Jump-Discontinuous Problems in Optimal Control and Estimation", Proceedings of the 1992 American Control Conference, Chicago, IL, June 1992.
27. Mason, P.A.C., and Mook, D.J., "Scalar Gain Interpretation of Large Order Filters," Flight Mechanics/Estimation Theory Symposium, NASA Goddard Space Flight Center, Greenbelt, MD, pp. 135-144, May 1992.
28. Mason, P.A.C., and Mook, D.J., "Gain Design and Scalar Representation for a Kalman Filter", Proceedings of the 1991 AIAA Guidance, Navigation, and Control Conference, New Orleans, LA, August 1991.
29. Crassidis, J.L., and Mook, D.J., "Tracking and Control Utilizing On-Board Aircraft Sensor Information in an Automatic Carrier Landing System", Proceedings of the 1991 AIAA Guidance, Navigation, and Control Conference, New Orleans, LA, August 1991.
30. Crassidis, J.L., and Mook, D.J., "Modeling an Autopilot and a Thrust Compensator in an Automatic Carrier Landing System", Proceedings of the 1991 AIAA Flight Simulation Technologies Conference, New Orleans, LA, August 1991.
31. Stry, G.I., Mook, D.J., and Rae, W.J., "Experimental Identification of Ground Effects During Airplane Landings", Proceedings of the 1991 AIAA Atmospheric Flight Mechanics Conference, New Orleans, LA, August 1991.
32. Mook, D.J., "Robust Realization/Identification for Control of Large Space Structures", Proceedings of the 1991 American Control Conference, Boston, MA, June 1991.
33. Stry, G.I., and Mook, D.J., "Correlation Techniques to Determine Model Form in Robust Nonlinear System Realization/Identification", Flight Mechanics/Estimation Theory Symposium, NASA Goddard Space Flight Center, Greenbelt, MD, May 1991.
34. Mook, D. J., and Stry, G. I., "Robust Identification of Nonlinear Structural Damping," Proceedings of Damping '91, San Diego, CA, February 1991.
35. Stry, G. I., and Mook, D. J., "Correlation Techniques In Robust Nonlinear System Realization/Identification", AAS Paper 91-126, Proceedings of the AAS/AIAA Space Flight Mechanics Conference, NASA Johnson Space Flight Center, Houston, TX, February 1991.
36. Mook, D.J., Shyu, I.-M., and Coye, K.B., "Nonlinear Aircraft Tracking Filter Utilizing Control Variable Estimation", Proceedings of the AIAA Guidance, Navigation, and Control Conference, Portland, OR, pp. 771-781, August 1990.
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38. Stry, G.I., and Mook, D.J., "Identification of Nonlinear Dynamic Systems", Fourth Workshop on Computational Control of Flexible Aerospace Systems, Williamsburg, VA, July 1990.
39. Roemer, M.J., and Mook, D.J., "A Robust Time-Domain Identification Algorithm for Mass, Stiffness, and Damping Matrices", Fourth Workshop on Computational Control of Flexible Aerospace Systems, Williamsburg, VA, July 1990.

40. Stry, G.I., and Mook, D.J., "An Experimental Study of Nonlinear Dynamic System Identification", Proceedings of the Flight Mechanics/Estimation Symposium, NASA Goddard Space Flight Center, Greenbelt, MD, pp. 231-246, May 1990.
41. Roemer, M.J., and Mook, D.J., "Experimental Modal Identification of the Mini-Mast CSI Testbed", Proceedings of the AIAA Dynamics Specialists Conference, Long Beach, CA, pp. 255-260, April 1990.
42. Mook, D.J., "An Optimal Estimation Approach for Enhanced Identification of Large Space Structures", Southeastern Conference on Theoretical and Applied Mechanics, Atlanta, GA, March 1990.
43. Roemer, M.J., Mook, D.J., and Schlonski, S., "An Experimental Modal Testing/Identification Procedure for Personal Computers", Proceedings of the International Modal Analysis Conference, Kissimmee, FL, pp. 95-101, January 1990.
44. Roemer, M.J., and Mook, D.J., "Robust Time Domain Identification of Mass, Stiffness, and Damping Matrices", Proceedings of the International Modal Analysis Conference, Kissimmee, FL, pp. 1271-1277, January 1990.
45. Roemer, M.J. and Mook, D.J., "An Enhanced Mode Shape Identification Algorithm for Robust System Realization/Identification", Proceedings of the 30th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics, and Materials Conference, Mobile, AL, April 1989.
46. Roemer, M.J. and Mook, D.J., "Robust Realization/Identification of Damped Structures", Proceedings of Damping 89, West Palm Beach, FL, February 1989.
47. Mook, D.J., "Optimal Post-Experiment Estimation of Poorly Modeled Dynamic Systems", Proceedings of the Seventh NASA Flight Mechanics/Estimation Theory Symposium, pp. 1311-1312, Goddard Space Flight Center, May 1988.
48. Mook, D.J., "Estimation and Identification of Nonlinear Dynamic Systems", Proceedings of the 29th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics, and Materials Conference, Part 1, pp. 470-478, Williamsburg, VA, April 1988.
49. Lew, J.-H., and Mook, D.J., "Reduced Noise Sensitivity of the Eigensystem Realization Algorithm", Proceedings of the 29th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics, and Materials Conference, Part 3, pp. 1556-1564, Williamsburg, VA, April 1988.
50. Mook, D.J., "Damping Determination From Noisy State Measurements", Proceedings of the ASME Vibration Conference, Boston, MA, September 1987.
51. Mook, D.J., and Tsen, F.-M., "Time-Domain Linear System Identification Using Matrix Exponentials", Proceedings of the Fifth International Conference on Systems Engineering, Dayton, OH, September 1987.
52. Tsen, F.-M., and Mook, D.J., "Linear Systems Identification Using Matrix Exponential Sensitivities", Proceedings of the Sixth VPI&SU/AIAA Symposium on Dynamics and Control of Large Structures, Blacksburg, VA, June 1987.
53. Mook, D.J., and Lin, J.C., "Minimum Model Error Estimation of Modal Truncation Effects", Proceedings of the 1987 Spring Meeting of the Society of Experimental Mechanics, Houston, TX, June 1987.
54. Mook, D.J., "Estimation of External Forces From Noisy State Measurements", Proceedings of the 1987 American Control Conference, Vol. 1, pp. 401-405, Minneapolis, MN, June 1987.

55. Mook, D.J., "Force Estimation Using State Measurements", Proceedings of the 11th Canadian Congress of Applied Mechanics, Vol. 1, pp. A-98 - A-99, Edmonton, Alberta, Canada, June 1987.
56. Mook, D.J., and Junkins, J.L., "Measurement Covariance Constrained Estimation for Poorly Modeled Dynamic Systems", AIAA Paper No. AIAA-87-0173, presented at the 25th AIAA Aerospace Sciences Meeting, Reno, NV, January 1987.
57. Mook, D.J., "Resolution of Inconsistent Least Squares Solutions", Pre-prints-22, paper ESP22/85034, 22nd Annual Meeting, Society of Engineering Science (SES), State College, PA, October 7-9, 1985.
58. Mook, D.J., "Inconsistent Least Squares Reductions", Dynamics and Control, Proceedings of the Mountain Lake Dynamics and Control Institute, Mountain Lake, VA, June 10-11, 1985, pp. 48-57.
59. Reddy, J.N., and Mook, D.J., "Transient Analysis of Layered Composite Plates Using a Shear Deformation Theory", International Conference on Computational Methods and Experimental Measurements, Washington, D.C., June 30 - July 2, 1982.
60. Mook, D.J., and Mook, D.T., "Resonant Interactions of Harmonic Axial and Transverse Loads", 16th Midwestern Mechanics Conference, Kansas State University, Manhattan, KS, September 1979.

#### **Conference Proceedings - Published abstract only**

1. Mook, D.J., "Nonlinear Model Correction for SAMPEX Attitude Estimation," 19th AAS Rocky Mountain Guidance and Control Conference, Breckenridge, CO, February 1996.
2. Mook, D.J., "On The Robustness of MME-Based Attitude Dynamics Identification," Midwestern Mechanics Conference, Ames, IA, October 1995.
3. Meyer, T.J., and Mook, D.J., "Nonlinear Identification Without Model Form Assumptions", Fourth Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures and Mechanisms, Blacksburg, VA, June 1992.
4. Stry, G.I., and Mook, D.J., "Identification of Nonlinear Dynamic Systems", Third Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures and Mechanisms, Blacksburg, VA, June 1990.
5. Meidenbauer, Janet, and Mook, D.J., "Nonlinear System Identification", 26th Annual Meeting of the Society of Engineering Science, Ann Arbor, MI, September 1989.
6. Mook, D.J., "Dynamic Model Error Estimation", 1987 ASCE Engineering Mechanics Division Specialty Conference, Buffalo, NY, May 1987.
7. Mook, D.J., "Error Estimation in Nonlinear Dynamic Models", AFOSR/ARO Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures and Mechanisms, Blacksburg, VA, March 1987.
8. Mook, D.J., "Estimation in the Presence of Model Errors", 23rd Annual Meeting, Society of Engineering Science (SES), Buffalo, NY August 1986.
9. Mook, D.J., "A Measurement Covariance Constrained Estimator", 23rd Annual Meeting, Society of Engineering Science (SES), Buffalo, NY, August 1986.

#### **Final Reports (reverse chronological order of release date)**

1. Mook, D.J., "Enhanced Linear System Identification," Final Report, NASA Grant NGT70142, June 1996, 200 pages.

2. Mook, D.J., "Robust Attitude Determination," Final Report, NASA Grant NGT70333, June 1996, 120 pages.
3. Rynaski, E.G., and Mook, D.J., "Theoretical Constraints In The Design Of Multivariable Control Systems," Final Report, NASA Contract NAG-1-1361, performed for NASA Langley Research Center, Hampton, VA, January 1993, 42 pages.
4. Mook, D.J., Crassidis, J.L., "Digital Control of a Radar Pedestal Drive", Final Report, U.B.F. Research Agreement 9103-280425, performed for Bell Aerospace Textron, Niagara Falls, NY, January 1992, 95 pages.
5. Mook, D.J., Crassidis, J.L., and McGrath, J.M., "Tracking and Control in an ACLS Utilizing Aircraft Sensor Information", Final Report, U.B.F. Research Agreement 9103-246725, performed for Bell Aerospace Textron, Niagara Falls, NY, January 1991, 121 pages.
6. Mook, D.J., and McGrath, J.M., "Vertical State Filters for ACLS Utilizing Airplane Force Models and On-Board Sensors", Final Report, U.B.F. Research Agreement 9103- 225125, performed for Bell Aerospace Textron, Niagara Falls, NY, January 1990, 123 pages.
7. Swanson, D.A., and Mook, D.J., "Optimization of Control and Filter Gains in the Automatic Carrier Landing System", Final Report, U.B.F. Research Agreement 9103- 228025, performed for Bell Aerospace Textron, Niagara Falls, NY, January 1990, 158 pages.
8. Rauch, C., and Mook, D.J., "Modeling and Analysis of a Linear Force Motor", Final Report, U.B.F. Research Agreement 9103-218825, performed for Moog, Inc., East Aurora, NY, August 1989, 340 pages.
9. Roemer, M.J. and Mook, D.J., "An Automatic Carrier Landing System Simulation/Realization with Control Variable Optimization", Final Report, U.B.F. Research Agreement 9103-209025, performed for Bell Aerospace Textron, Niagara Falls, NY, February 1989, 153 pages.
10. Rauch, C., and Mook, D.J., "Force Motor Modeling and Analysis: Statics", Final Report, U.B.F. Research Agreement, 9103-201425, performed for Moog, Inc., East Aurora, NY, September 1988, 140 pages.
11. Mook, D.J., "Enhanced Attitude Estimation", Final Report, Contract #N60921-83-G-9-A165, B002, performed for the Naval Surface Weapons Center, Dahlgren, VA, February 1986, 40 pages.
12. Junkins, J.L., and Mook, D.J., "Enhanced Spacecraft Attitude Estimation", Final Report, Contract #60921-83-G-9-A165, performed for the Naval Surface Weapons Center, Dahlgren, VA, November 1985, 124 pages.

### **Professional Memberships and Activities**

AAM, American Academy of Mechanics 0 Member, 1989-present

AIAA, American Institute of Aeronautics and Astronautics

- Student member, 1985-1986; Member, 1986-1990; Senior Member, 1990-present
- Associate Editor, Journal of Guidance, Control, and Dynamics, Jan 1994 - Dec 1995.
- Chairman, Niagara Frontier Section, 1992-1993
- Council Member, Niagara Frontier Section, 1991-1994

ASEE, American Society of Engineering Educators

- Member, 1990-present

ASME, American Society of Mechanical Engineers

- Member, 1986-present
- Member, ASME Buffalo Section Executive Committee, 1987-1992
- Chairman, ASME Buffalo Section Technical Activities Committee, 1987-1992
- Chairman, ASME Buffalo Section College Relations Committee, 1987-1989
- Faculty Advisor, University at Buffalo ASME Student Section, 1989-1991
- Member, Technical Panel on *Modeling and Identification*, Dynamic Systems and Control Division, 1990-1993

Global Engineering Education Exchange, Institute of International Education

Faculty Advisor, University at Buffalo, 1997-present

Member of the Executive Committee, 2001-present

NAFSA, National Association of Foreign Student Advisors

- Member, 1997-present

Pi Tau Sigma, Mechanical Engineering Honor Society

- Faculty Advisor, University at Buffalo Student Section, 1991-present

SAE, Society of Automotive Engineers

- Member, 1986-present
- Instructor, SAE Professional Engineering Education, "Kalman Filtering: Theory and Applications," Warren, MI, January 1996
- Winner, Ralph R. Teetor Outstanding Educator Award, 1989
- Member, Readers Committee in Structures, 1987-present
- Member, Readers Committee in Spacecraft, 1987-present
- Member, Readers Committee in Control and Guidance, 1987-present
- Faculty Advisor, University at Buffalo SAE Formula Car, 1989-present
- Faculty Advisor, University at Buffalo SAE Supermileage Car, 1988-89

SES, Society of Engineering Science

- Member, 1986-present
- Student Member (ESM Society), VPI&SU, 1976-1979
- Secretary, ESM Society, 1978-1979

Biomedical Engineering Society, VPI & SU, Charter Member, Secretary 1978

Engineer-In-Training (E.I.T.) Certification, April 1979

Member, National Audubon Society

Member, National Air and Space Museum

### **Reviewer Work**

AAS Journal of the Astronautical Sciences

AIAA Journal

AIAA Journal of Guidance, Control, and Dynamics

AIAA Journal of Spacecraft and Rockets

ASME Journal of Dynamic Systems and Control

ASME Journal of Mechanical Design

ASME Journal of Vibration and Acoustics (also for the former journal, ASME Journal of Vibration, Acoustics, Stress, and Reliability in Design)

IEEE Transactions on Acoustics, Speech, and Signal Processing

IEEE Transactions on Automatic Control

Journal of Optimization Theory and Applications

Journal of the Acoustical Society of America  
SAE Transactions  
SIAM Journal on Control and Optimization  
Nonlinear Dynamics  
Army Research Office  
John Wiley & Sons, Inc., Publishers

**Research Conference Sessions Chaired (reverse chronological order of meeting)**

Co-chaired session, "Dynamics and Control", Fourth Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures and Mechanisms, Blacksburg, VA, June 1992.  
Co-chaired session, "Satellites and Control", Third Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures and Mechanisms, Blacksburg, VA, June 1990.  
Co-chaired session, "Miscellaneous HI", Third Conference on Nonlinear Vibrations, Stability, and Dynamics of Structures and Mechanisms, Blacksburg, VA, June 1990.  
Chaired session, "Structural Control and Isolation 9", ASME Fall Design Conference, Boston, MA, September 27-30, 1987.  
Chaired session, "Numerical Methods", 23rd Annual Meeting, Society of Engineering Science (SES), Buffalo, NY, August 25-27, 1986.  
Co-chaired session, "Mechanics of Wind Turbine Generators and Solar Collectors", 21st Annual Meeting, Society of Engineering Science (SES), Blacksburg, VA, October 15-17, 1984.  
Co-chaired session, First Mid-Atlantic Conference on Biofluid Mechanics, Blacksburg, VA, August, 1978.

**Activities Related to International Education**

Member, CISP, the Council for International Students and Programs, University at Buffalo, 1997-present  
Member, NAFSA: Association of International Educators, 1997-present  
Representative of UB, Linden Educational Tour of Asia, Sept-Oct 1997  
Negotiated and signed new exchange agreement, Osmania University, Hyderabad, India, 1999  
Negotiated and signed new exchange agreement, EUDIL, Lille, France, 2002  
Negotiated and signed new exchange agreement, UTT, Troyes, France, 2002  
Global Engineering Education Exchange:  
Faculty Advisor, University at Buffalo, 1997-present  
Member of the Executive Committee, 2001-present  
US National Faculty Advisor, "I-SEE-IT" Tour (15 US students, 2 week tour of French and German universities and industries), July-August 1998  
Participation in Annual Meetings:  
Washington, DC, March 1997  
Copenhagen, Denmark, April 1998  
Daytona Beach, FL, March 1999  
Panel member, "Successful Models of Program Promotion"  
Presenter, "Report on the 1998 I-SEE-IT Tour"  
Madrid, Spain, April 2000  
Lake George, NY, June 2001  
Presenter, "How to Help Your International Students Get Internships/Co-ops"

Session Chairman, "International Academic Programs"  
Munich, Germany, June 2002  
Presenter, "Outcome Assessments and Credit Transfer"  
Co-organizer, "3rd European University in Automotive Engineering", Belfort, France, June 20-  
July 28, 2000  
Participant, "Engineering Education for Global Practice in the 21st Century - Accreditation and  
Assessment", Barga, Italy, April 2000  
Participant, "3rd Annual International Colloquium on International Engineering Education,"  
Kingston, Rhode Island, October 2000  
Panel Member, "Educational Opportunities for US Students Abroad: How to Institutionalize and  
Diversify Your University," 2001 ASEE/IEEE Frontiers in Education Conference: The Future  
- Impact on Engineering and Science Education, Reno, NV, October 2001  
Paper/presentation, "ABET Accreditation Issues in International Education," at the 2002 ASEE  
Annual Conference and Exposition, Paper 2002-2085, Montreal, Canada, June 2002  
Paper/presentation, "Double-Degree Programs in International Education," at the 2002 ASEE  
Annual Conference and Exposition, Paper 2002-2045, Montreal, Canada, June 2002  
Speaker, SCORE (Service Core of Retired Executives) branch of the Small Business Association  
(SBA), "International Education Activities of the School of Engineering and Applied  
Sciences at the University at Buffalo," January 2000  
"Report on the International Activities of the School of Engineering and Applied Sciences," in  
**UB International**, Volume VIII, No. 1, 1999, pp. 13-16.  
"Issues in International Education," presented to the Administrative Council, School of  
Engineering and Applied Sciences, April 1999.  
"International Enrollment," presented to the Administrative Council, School of Engineering and  
Applied Sciences, November 2000.  
Faculty host for Dr. Pu Wang, visiting scholar, Beijing Polytechnic University, 2000-2001.  
Panelist, "How to Succeed at an American University," part of International Student Orientation  
Week, 1999-present.  
Moderator, Panel discussion, "Terrorist Attacks on the U.S. - Root Causes and U.S. Response,"  
State University of New York at Buffalo (open to public; substantial public attendance and  
media coverage), November 1, 2001.  
Dozens of presentations about Study Abroad opportunities to UB engineering students, clubs,  
parents, and potential students, at events such as "Discover UB," "Open House," "Preview  
Day," etc., at club meetings, in selected engineering courses, and in small group meetings.

### **Service to University**

Member, SEAS Decanal Review Committee for UB Provost's Office, 2002  
Member, CISP, the Council for International Students and Programs, University at Buffalo,  
1997-present  
Volunteer, NCAA Division I Men's and Women's Track and Field Championships, held at the  
University at Buffalo, June 1998  
Representative, Linden Educational Tour of Asia, Sept-Oct 1997  
Chair, Student Life Committee, University Faculty Senate, University at Buffalo, 1994-1996.  
Member, ex-officio, University Council, Student Life Committee, University at Buffalo, 1996-  
1997.

Senator from the Faculty of Engineering and Applied Science, University Faculty Senate, University at Buffalo, 1986-1987; 1999-2001.  
Alternate Senator from the Faculty of Engineering and Applied Science, University Faculty Senate, University at Buffalo, 1987-1988; 1988-1989; 1996-1997; 1997-1998.  
Faculty Mentor for Hanif Khalak, University Honors Program, University at Buffalo, 1986-1990.  
Faculty Mentor for Kenneth Pizzuco, University Honors Program, 1986-1989.  
Faculty Mentor for Michael Linhardt, University Honors Program, 1989-1991.  
Faculty Mentor for Matthew McGlincy, University Honors Program, 1989-1992.  
Faculty Mentor for Richard Carlmark, University Honors Program, 1990-1993.  
Faculty Mentor for Samuel Ogie, University Honors Program, 1992-1994.  
Faculty Mentor for Charles Cassety, University Honors Program, 2000-2001.  
Faculty Mentor for Theresa Moehle, University Honors Program, 2001-present.  
Faculty Mentor for Jonathan Leahy, University Honors Program, 1999-present.  
Faculty Mentor for John Dietl, University Honors Program, 2000-present.  
Faculty Mentor for Brian Bradford, University Honors Program, 2001-present.  
Faculty Mentor for Lindsay Pratt, University Honors Program, 2001-present.  
Faculty Supervisor, Collegiate Science and Technology Entry Program (C-STEP), 1990-1992.

### **Service to School of Engineering**

Chair, Faculty Personnel Committee (advises Dean on hiring, tenure, promotion, etc) 2001-2002  
Member, Faculty Personnel Committee, 1999-present  
Mentor, School of Engineering and Applied Science Junior Faculty Mentoring Program, for Dr. Tarunraj Singh, 1996-2001  
EngiNet Instructor, SYS 581 - Optimal Estimation Methods, Spring 1995.  
EngiNet Instructor, MAE 455/565 - Vibration and Shock, Spring 1997.  
Member, Ph.D. Qualifying Examination Committee, Department of Electrical and Computer Engineering, University at Buffalo, 1994-1995; 95-96; 96-97; 97-98; 98-99; 99-00.  
Department Representative, Computer Advisory Committee, 1992-93.  
Preceptor in BEAM (Buffalo Engineering Awareness for Minorities) Supervised summer project for Brendon Hamilton, minority high school honors student, summer 1986.  
Faculty Advisor, University at Buffalo ASME Student Section, 1989-1990, 1990-1991.  
Faculty Advisor, University at Buffalo SAE Formula Car, 1989-1997.  
Faculty Advisor, University at Buffalo SAE Supermileage Car, 1988-1989  
Marshall, College of Engineering Commencement, 1988; 1989; 1990; 1991; 1992.

### **Service to Department**

Organizer, Department Seminar Series, 1990-1991.  
Chair, Faculty Search Committee in Dynamics and Control, Department of Mechanical and Aerospace Engineering, 1991-1992.  
Chair, Faculty Search Committee in Dynamics and Control, Department of Mechanical and Aerospace Engineering, 1998-1999.  
Member, Graduate Studies Committee, Department of Mechanical and Aerospace Engineering, 1991-1997.  
Member, Undergraduate Studies Committee for Mechanical Engineering, University at Buffalo, 1986-1989.

Member, Ph.D. Qualifying Examination Committee, Department of Mechanical and Aerospace Engineering, University at Buffalo, 1987; 1988-1992; 1995-present.  
Research advisor for Douglas Swanson, Zimmer Memorial Scholarship Award winner, Summer 1987  
Research advisor for Peter Mucci, Zimmer Memorial Scholarship Award winner, Summer 1992  
Research advisor for Christopher O'Hare, Zimmer Memorial Scholarship Award winner, Summer 1998  
Research advisor for Joseph DeAngelis, Zimmer Memorial Scholarship Award winner, Fall 2001  
Research advisor for Ellis King, Zimmer Memorial Scholarship Award winner, Spring 2001  
Research advisor for Rajaev Kasad, Zimmer Memorial Scholarship Award winner, Spring 2001  
Co-Department Advisor, Mechanical Engineering Undergraduate Program, Spring 2001

### **Service to Community**

Volunteer, Friends of the Night People (free meals for needy people) Buffalo, NY.

Volunteer, Habitat for Humanity, Buffalo, NY.

Umpire, Amherst Girls Softball League, 1997.

Cub Scout Pack 268, Amherst, NY:

- Outings Director, 1990-1992
- Assistant Den Leader, 1991-1992, 1992-1993

University Presbyterian Church, Buffalo, NY:

- Church and Community Committee, 1989-1990
- Nominating Committee, 1990-1991
- Stewardship Committee, 1991-1992
- Deacon, 1991
- Elder, 1992-1994

Lou Gehrig Youth Baseball:

- Coach, Instructional League "Cubs", Summer 1990
- Coach, AA League "Twins", Summer 1992

Volunteer, Audubon Day, Amherst, NY, September 1989, 1990, 1992.

Volunteer, 1988 Summer Special Olympics, Buffalo, NY, June 1988.