CHRISTINA L. BLOEBAUM

Professor for Competitive Product and Process Design
Department of Mechanical and Aerospace Engineering

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Getzville, New York 14068
(716) 688-0400
clb@buffalo.edu

Education:

Ph.D.	Aerospace Engineering, University of Florida, 1991	
	Title:	Formal and Heuristic System Decomposition Methods in Multidisciplinary Synthesis
	Advisor:	Dr. Prabhat Hajela
M.S.	Aerospace Engineering, University of Florida, 1987	
	Title:	Implementation of Global Sensitivity Analysis in Dual Structural/Control Optimization
B.S.	Aerospace Engineering, University of Florida, 1986	

Technical Interests:

Multidisciplinary Design Synthesis, Visualization and Visual Design Steering for Large-scale Optimal Design, Visualization of Multidimensional/Multivariate Data, Concurrent Design and Engineering, Structural Analysis and Optimization

Professional Experience:

9/00 - present	UB Professor for Competitive Product and Process Design, funded by the Assembly of the State of New York
8/01 – 5/04	Member, President's Review Board (PRB) for Promotion and Tenure
7/00 - present	Executive Director, New York State Center for Engineering Design and Industrial Innovation (NYSCEDII), partially funded by the Assembly of the State of New York
8/98 - 8/01	Chair, Department of Mechanical and Aerospace Engineering, State University of New York at Buffalo

8/96 - 9/00	Associate Professor, Department of Mechanical and Aerospace Engineering, University at Buffalo

Employment History (continued):

8/96 - 8/98	Undergraduate Studies Director for Aerospace Engineering, Department of Mechanical and Aerospace Engineering, University at Buffalo
8/91 - 7/96	Assistant Professor, Department of Mechanical and Aerospace Engineering, University at Buffalo
Summer '96	Consultant, Institute for Computer Applications in Science and Engineering (ICASE), NASA Langley Research Center
Summer '95	Visiting Scientist, ICASE, NASA Langley Research Center
Summer '92	NASA/ASEE Summer Faculty Fellow, NASA Langley Research Center

Honors and Awards:

Keynote Speaker for Graduate Student Excellence in Teaching Awards Ceremony, March 2004 – "Teaching: Art or Science?"
Honored for Notable Contributions to Teaching and Learning at UB, 2003
Visionary Innovator, STOR, University at Buffalo, 2003
Keynote Speaker, EDC 2002, London, England, July 2002
Excellence in Research Recognition, SUNY Research Foundation, Spring 2001
Named Professor for Competitive Product and Process Design, September 2000
AIAA Associate Fellow, Fall 1999
Buffalo Ambassador, Greater Buffalo Convention & Visitors Bureau, 1999
Business First, 40 Under Forty, 1998
Chancellor's Award for Excellence in Teaching, 1996
Presidential Faculty Fellow (PFF), National Science Foundation, 1995
Riefler Award, State University of New York at Buffalo, 1993
University Teaching Fellow, State University at Buffalo, 1992
NASA/ASEE (American Society of Engineering Educators) Summer Faculty Fellow, 1992
1st Place, Graduate Division Paper Competition, AIAA National Student Conference, Reno, Nevada, 1/89
1st Place, Graduate Div. Paper Comp., AIAA Regional Student Conference, Altamonte Springs, Florida, 4/88
Zonta International Amelia Earhart Fellowship, Fall 1988 - Spring 1991
Langley Aerospace Summer Scholars Fellowship, 1988
Member, Sigma Gamma Tau (National Aerospace Honorary)

Professional Memberships and Activities:

American Institute of Aeronautics and Astronautics (AIAA)

Associate Fellow, 1999-present
Senior Member, 1996-1999

Professional Memberships and Activities (continued):

Member, 1991-1995
Member, Executive Board, Regional Section, 1993-1995
Multidisciplinary Design Optimization (MDO) Technical Committee
Member, 2004 - present
Member, 1992-1997
Education Subcommittee Chair (92-94)
Planning Subcommittee, Member (92-94)
Conference Support Subcommittee, Member (92-94)
MDO Technical Chair for 36th AIAA SDM Conference, 1995
Technical Chair, 6th AIAA/NASA/ISSMO MDO Conference, 1996
Panel Member, "Issues in Engineering Education" Panel Session,
6th AIAA/NASA/ISSMO MDO Conference, 1996
Panel Chair, "Visualization in Multidisciplinary Analysis and Optimization", 9th
AIAA/NASA/ISSMO MDO Conference, 2002
Co-Chair, "What is MDO?" Discussion Session, 6th AIAA/NASA/ISSMO
MDO Conference 1996
Chair, "MDO in Industry - Pitfalls and Promise", Panel Session,
6th AIAA/NASA/ISSMO MDO Conference, 1996
Developed and Taught Short Course, "Reducing Time and Cost in the Design
Process", in conjunction with 6th AIAA/NASA/ISSMO MDO Conference, 1996
Student Member, 1984-1991/Student Chapter President, 1986

American Society for Engineering Education (ASEE)
Member, 1995-2003

American Society of Mechanical Engineers (ASME)
Member, 1996-2003
Associate Member, 1991-1994
Member, Executive Board, Regional Section, 1991-1994
Faculty Advisor, University at Buffalo Student Section, 1991-1994

Applied Artificial Intelligence in Engineering (AAIE) Graduate Group, University at Buffalo
Member, 1992-1994

Center for Computational Research (CCR)
Member, Executive Committee, 1999-2002
Member, Search Committees for Associate Director (F/98), Computational Scientists and
Unix System Administrators (F/98-Sp/99)
Chair, Visualization Support Group, 1999-2002

Design Optimization: International Journal for Product and Process Improvement
Editorial Advisory Board: 1998-2000

Engineering Design Automation
Organizing Committee for 1st International Engineering Design and Automation
Conference, Bangkok, Thailand, March 1997
Organizing Committee for 2nd International Engineering Design and Automation
Conference, Maui, Hawaii, August 1998
Organizing Committee for 3rd International Engineering Design and Automation

Conference, Orlando, Florida, June 2000
Associate Editor for: Journal of Engineering Design and Automation, 1995-1998

Professional Memberships and Activities (continued):

Integrated Design Engineering (IDE) Graduate Group, University at Buffalo,
Chairman and Organizer, 1994-1996
International Society of Structural and Multidisciplinary Optimization (ISSMO)
Member, 1996-present
Member, Executive Committee (Elected, 5/99 – 5/03)
Secretary General, Executive Committee (Elected, 5/99 - 5/01)
General Chair, 3rd World Congress of Structural and Multidisciplinary Optimization (WCSMO-3), Buffalo/Niagara Falls, May 17-21, 1999
Editorial Board: International Journal of Structural Optimization, 1998-present
National Academy of Engineering (NAE) (non-member activities)
Selected participant at NAE's 3rd Annual Symposium on Frontiers of Engineering, Irvine, CA, September 1997
Organizing Committee, Design Methodology Coordinator, 1st German-American Symposium on Frontiers of Engineering, Dresden, Germany, May 1998
Sigma Gamma Tau (National Aerospace Honorary)
Faculty Advisor, University at Buffalo Chapter, 1991-present
Charter President, University of Florida Chapter, 1988-1989
Charter Member, University of Florida, 1988-1991
Society of Automotive Engineers (SAE)
Member, 1991- 1995
Society for Industrial and Applied Mathematics (SIAM)
Member, 1997-2001

Reviewed for:

American Society of Mechanical Engineers - Design Conference, Design Journal
American Institute of Aeronautics and Astronautics - AIAA Journal, Journal of Aircraft, SDM Conference, MDO Conference
Design Automation: International Journal for Product and Process Improvement
Invited Review of the 7th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, St. Louis, MO, September, 1998.
Design Optimization: International Journal for Product and Process Improvement
International Journal of Systems and Automation, Journal of Eng. Design and Automation
EDA Book, Simultaneous Engineering: Methodologies and Applications
NSF Panel Review
Division of Design, Manufacturing, and Industrial Innovation, Career, 2002
Division of Design, Manufacturing, and Industrial Innovation, SBIR,1998
KDI/KN Program, 1998
Division of Design, Manufacturing, and Industrial Innovation, Unsolicited, 1996
Dynamic Systems and Controls, 1996
Division of Undergraduate Education, 1995

Conference Session Chair:

10th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Albany, NY, September 2004
42nd AIAA Aerospace Sciences Meeting, Reno, Nevada, January, 2004.

Professional Memberships and Activities (continued):

9th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Atlanta, GA, September 2002
8th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Los Angeles, CA, September 2000
1st ASMO UK/ISSMO Conference on Engineering Design Optimization, Ilkley, UK, July 1999
7th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, St. Louis, MO, September 1998
1st International Conference on Engineering Design and Automation, Bangkok, Thailand, March 1997
1st Optimization in Industry Conference, Palm Coast, Florida, March 1997
5th Pan American Congress of Applied Mechanics, San Juan, Puerto Rico, January 1997
21st ASME Design Automation Conference, Boston, Mass., September 1995
36th AIAA SDM Conference, New Orleans, Louisiana, April 1995
5th AIAA/AF/NASA/OAI Symposium on Multidisciplinary Analysis and Optimization, Panama City, Florida, September 1994
35th AIAA/AHS SDM Conference, Hilton Head, South Carolina, April 1994
19th ASME Design Automation Conference, Albuquerque, New Mexico, Sept. 1993
4th AIAA/AF/NASA/OAI Symposium on Multidisciplinary Analysis and Optimization, Independence, Ohio, September 1992

Workshop Presenter/Participant:

MIT DSM Workshop, MIT, Cambridge, Mass., September 1999, September 2000, September 2001
DARPA MicroAV Contractors Meeting, Quantico, VA, May 1999
ASME DTM Decision-Based Design Workshop, Sacramento, CA, September 1997
NSF Workshop on Engineering Curriculum Revision, Carnegie Mellon University, Pittsburgh, Pennsylvania, Fall 1997
NSF Workshop on Female/Minority Retention, Arlington, Virginia, September, 1995
NSF Design Engineering Workshop, Phoenix, Arizona, May 1995
NSF/NASA Multidisciplinary Aircraft Design Workshop, Blacksburg, Virginia, 5/93

Community:

Big Brothers/Big Sisters, Be-A-Friend Program of Erie County, 1997 to 2002
Habitat for Humanity, 1997 to 2000
Participant in NASA sponsored "Turning Ideas into Reality" program for National Engineers Week, 1991

University:

Search Committee, Vice Provost and Dean of Graduate School, Fall 2004
President's Review Board (PRB), Member, Fall 2001 – Spring 2004
Sigma Xi Research Day, Organizing Committee, Judge and Abstract Reviewer, Spring 2001
Sloan Foundation Graduate Program Committee, Fall 2000 - Spring 2001

Science Exploration Day 2000, Presenter, May 2000
Sigma Xi Research Day, Judge and Abstract Reviewer, April 2000
Provost Search Committee, Spring 1999-Spring 2000

Service (continued):

University (continued):

Provost's Research Support Group, Member, Fall 1999
UB/IBM Planning Session Participant, "Improving UB's Funded Research Performance", August 4-6, 1999
Sigma Xi Research Day, Judge and Abstract Reviewer, Spring 1999
Provost's Scientific Advisory Board, Member, Fall 1998-present
Woodburn/Presidential Fellowship Program Committee, 1998-present
Center for Computational Research (CCR), Search Committee for Associate Director, Fall 1998 and Search Committee for Computational Scientists and Unix System Administrators, Fall 1988/Spring 1999
Graduate School Presentation to Presidential, Woodburn and Moore Fellowship awardees, 'The Fantasies and Realities of Virtual Reality', October, 1998
Candidate for Middle States' Commission on Higher Education evaluation team, 1998
Provost's Periodic Review Committee Member, 1998
Member of the President's Review Panel for Research and Sponsored Programs, 1998
Member of Review Panel for the Evaluation of the Great Lakes Program (GLP), 1998
Member of Review Panel for the Office of the Vice President for Research, Spring 1998
Faculty Mentor to Samuel Baddoo and Ryan Oliver as part of SUNY Alliance for Minority Participation, 1997
Chancellor Award for Excellence in Teaching Review Committee, 1997
Pew Foundation Roundtable, 1996-1997
NSF Sponsored Stresses on Research and Education Research Roundtable, Stakeholders Panel, 1996
Senator from the Faculty of Engineering and Applied Science, University Faculty Senate 1996-1998
Member, Committee on Teaching and Learning, 1996-1998, 1999-2000
Dean's Search Committee, 1995/1996
Council on Research and Sponsored Programs (CSRP) Member, 1995-2000
Provost's Junior Faculty Development Committee, 1994-1996
Alternate Senator from the Faculty of Engineering and Applied Science, University Faculty Senate, '93-'95
Faculty Mentor to Honors Students - Mark Schultz and Jeffrey Parker, 1993-1995

School of Engineering:
Dean's Council Presentation (NYSCEDII Industrial Outreach), Spring 2004
Search Committee, Director, MCEER, 2002/2003
Search Committee, Development Officer, 2001/2002
EAS 140, Lecturer for MAE Department, Fall 2000
Dean's Council Presentation (NYSCEDII), Spring 2000
Faculty Mentor to Nine Engineering ASE Freshmen, 1999
Committee on Research Support and Incentives, Chair, Fall 1999
Dean's Council Presentation/Demo (Visualization and Simulation), Fall 1998

EAS 140 Guest Lecturer, Fall 1998
Faculty Marshal, Commencement, May 1997

Service (continued):

School of Engineering:

Dean's Committee for Response to the "Report of the President's Task Force on Women at UB", Spring 1997
Co-Op Committee Member, 1997-1998
Hosted 'Evening with Faculty' for Engineering Honors Students, 1997
Teacher for MS Program Course at Delphi-Harrison Division of General Motors, Spring 1997
Faculty Mentor to Kemper Lewis and T. Kesavadas, 1996-present
Lectures on Disciplines, EAS 140, Fall 1996
Teacher for MS Program Course at Praxair, Inc., Spring 1996
Presentation, SEAS Dean's Council, November 1995, May 1997
Member of Engineering Computing Search Committee, 1993, 1995
Organized SEAS Assistant Professors Group, 1993
Teacher for MS Program Course at Harrison, Division of GM, Spring 1993
Lecturer for Design course, 1992, 1993, 1994
Faculty Advisor to AIAA/GD Aircraft Design Competition Group, 1992-1993
Faculty Advisor to AIAA LORAL Student Design Competition Group, 1991-1992
Faculty Advisor to SAE Supermileage Vehicle Design Competition Group, 1991-present
Lecturer for Introduction to Engineering course, 1991

Departmental:
Interim Director, Undergraduate Studies for Mechanical Engineering, 2001-2002
Organizer, Design and Systems Group, MAE Department, 2001-present
Co-advisor, Solar Splash Competition, Fall 2000-Spring 2001
Department Chair, 1998-2001
Strategic Planning Committee Member, 1998
Director, Undergraduate Studies for Aerospace Engineering, 1996-1998
Seminar Organizer, 1996-1997 Academic Year
Member, Undergraduate Aerospace Engineering Curriculum Committee, 1992-present
Member, Ph.D. Qualifying Committee, Systems and Design Group, 92, 93, 95-98, 00-01
Design Exam Coordinator, 1997
Faculty Advisor, University at Buffalo ASME Student Section, 1991-1994
Faculty Advisor, University at Buffalo Sigma Gamma Tau Chapter, 1991-present

Academic Courses Taught:

ASE 415/MAE 415 Aerospace Structural Analysis I (Course title changed to Analysis of Structures - MAE 415) - text: required - Donaldson, B. K., Analysis of Aircraft Structures (McGraw-Hill, New York, 1993), optional - Megson, T. H. G., Aircraft Structures for Engineering Students (Edward Arnold, England, 1980)

Academic Courses Taught (continued):

ASE 416	Aerospace Structural Analysis II (Course title changed to Aerospace Structural Analysis) - text: required - Donaldson, B. K., Analysis of Aircraft Structures (McGraw-Hill, New York, 1993), optional -Megson, T. H. G., Aircraft Structures for Engineering Students (Edward Arnold, England, 1980)
MAE 311	Machines and Mechanisms I - text: required - Shigley and Mischke , Mechanical Engineering Design, (McGraw-Hill, 6th Edition).
MAE 414	Internship (various companies/student projects)
MAE 459	Design Project (Supermileage vehicle, LORAL, Aircraft Design, Solar Splash, etc.) Coordinator - Fall 1999, Spring 2000, Fall 2000
MAE 499	Independent Study (various topics)
MAE 448/558	Issues in Concurrent Design (taped for Enginet, Spring '97) - text: required - Prasad, B., Concurrent Engineering Fundamentals Volume I (Prentice-Hall, New Jersey, 1996) optional - Kusiak, A., Concurrent Engineering -- Automation, Tools, and Techniques (John Wiley, New York, 1993)
MAE 501	Individual Problems (various topics)
MAE 529	Finite Element Techniques - text: Steele, J. M., Applied Finite Element Modeling (Marcel Dekker, Inc., New York, NY, 1989)
MAE 550	Optimization in Engineering Design - text: required - Vanderplaats, G.N., Numerical Optimization Techniques for Engineering Design: With Applications (McGraw-Hill Book Company, New York, NY, 1984), optional - Reklaitis, G. V., Ravindran, A., and Ragsdell, K. M., Engineering Optimization: Methods and Applications (John Wiley and Sons, New York, NY, 1983)
MAE 552	Heuristic Optimization Methods - no text.

Graduate Student Research Supervision:

Ph.D.

completed:

Serhan, Hassan (1/95)	"Design of New Spinal Implants -- Experimental and Analytical Studies"

Graduate Student Research Supervision (continued):

Ph.D.

completed (continued):

Chi, Hua-Wei (6/96)	"Mixed Variable Optimization Methods for Complex Engineering System Design"
McCulley, Collin (2/99)	"Simulation-Based Comparison and Development of Heuristic Convergence Strategies for Multidisciplinary Analysis"
Winer, Eliot (8/99)	"Development of Visualization Techniques as an Aid in Multidisciplinary Design Optimization"
Hulme, Kevin (1/00)	"The Design of a Simulation-based Framework for the Development of Solution Approaches in Multidisciplinary Design Optimization"
English, Ken (2/01)	"Coupling Suspension in Complex System Optimization"
Abdul-Jalil, Mohamad Kasim (9/01)	"Development of a Virtual Collaborative Environment for Finite Element Simulation"
Huang, Chen-Hung (9/03)	"Development of Multi-Objective Concurrent Subspace Optimization and Visualization Methods for Multidisciplinary Design"

in progress:

Agrawal, Gautam (expected 2006)

Parashar, Sumeet (expected 2006)

Porcari, Richard (expected 2006)

M.S. Thesis

completed:

Serhan, Hassan (8/92)	"Experimental and Analytical Study of Transpedicular Screws"
Ford, Jeffrey (1/93)	"A Non-Hierarchic Decomposition Method for Synthesis of Mixed Discrete/Continuous Systems"

Graduate Student Research Supervision (continued):

M.S. Thesis (continued)

Khalak, Hanif (1/94)	"Solving Crystallographic Molecular Structures: An Investigation of a Simulated Annealing Application within `Shake-And-Bake™'"
Rosner, Alfred (6/94)	"Concurrent Engineering With Manufacturing Considerations"
Muthyala, Ganga (5/94)	"Structural Shape Optimization of Gear Wheels"
Mulubagal, Girish (6/94)	"Multidisciplinary Design With Tolerance Allocation For Maximum Quality"
Chai, Young-Ho (8/94)	"Spline Representation of Optimal Shape To Avoid Stress Concentrations"
Fuessel, Dominik (9/94)	"Optimum Model Size for Complex Design"
McCulley, Collin (5/95)	"A Genetic Tool for Optimally Sequencing the Design of Complex Engineering Systems"
Lasher, Elizabeth (8/95)	"Impact of Sensitivity Analysis Error on Optimal Solution Accuracy"
Miller, Eric (8/95)	"Coupling Suspension and Elimination in Multidisciplinary Design Optimization"
Hulme, Kevin (1/96)	"Development of CASCADE -- a Test Simulator for Modeling Multidisciplinary Design Optimization Problems in Distributed Computing Environments"
Becker, Jan (8/96)	"Distributed Computing for Multidisciplinary Design Optimization Using Java"
English, Ken (1/98)	"Development of Multiple Cycle Coupling Suspension in Multidisciplinary Design Optimization"
Bowerman, Ethan (3/98)	"Response Surface Development for Sensitivity Approximations in Multidisciplinary Design and Optimization"
Rajesh, J. (5/00)	"Automatic Response Surface Generation in Graph Morphing"
Ahmad, Faisal (8/01)	"Development of a Direct Parallel Optimization Method"
Misra, Udayan (8/01)	"Development of a Hybrid Genetic Simulated Annealing Method"

Graduate Student Research Supervision (continued):

M.S. Thesis (continued)

Gosakan, Mala (5/02)	"Development of Heuristic Parallel Convergence Strategies for Multidisciplinary Analysis"
Nozaki, Yuji (8/02)	"Development of a Constrained Direct Parallel Optimization Method"
Jain, Anuj (5/03)	"Gradient Vector Visualization as an Aid for Decision-Making in Engineering Optimization"
Agrawal, Nitin (9/03)	Initial Development of a Medical Data Application Programmers Interface (Co-Advisor, Dr. Eliot Winer, lead Supervisor)
Chiam, Ter Wei (11/03)	"The Development of a Gradient'Augmented Heuristic Optimization Method"
Ang, Eu-Jin (11/03)	"Development of an Automatic Grid-based Driving Simulation Scene Generator for Virtual Reality Exposure Therapy" (Co-Advisor, Dr. Eliot Winer, lead Supervisor)

Desai, Ashwin (12/03) "Parallel Paratrooper Optimization Algorithm"

Phatak, Amit (5/04)	"Derivation of Material Metric Homogenization Parameters for Hyperelastic Materials Using Finite Element-based Design Optimization"
Vase, Aditya (6/04)	Development of a Data Model for Real-time Web-based Visualization of Massive Engineering Analysis" (Co-Advisor with Dr. Eliot Winer, lead Supervisor)
Agarwal, Gautam (8/04)	"Development of a Web-based Visualization Environment for Decision-Making in Multidisciplinary Design Optimization"
Parashar, Sumeet (8/04)	"Decision-Support Tool for Multidisciplinary Design Optimization (MDO) Using Multi-Domain Decomposition"

in progress:

Morankar, Jitendra (exp. 12/04)
Galuski, Jessica (exp. 12/04)
Patwardhan, Sameer (exp. 12/04)

Tyagi, Gaurav (exp. 12/04)

Graduate Student Research Supervision (continued):

M.S. Project

completed:

Song, Jaebin (5/92)	"Application of Wynn's Algorithm to Optimization"
Chi, Hua-Wei (10/92)	"Design of Adaptive Structure for Optimal Deployment Characteristics"
Culpo, Christopher (11/92)	"An Intelligent Decomposition Approach for Coupled Engineering Systems"
Peck, Tony (5/93)	"A Revised Move Limit Strategy for Efficient Optimization"
Crane, Donald (9/93)	"Dynamic Axial Crush of a Thin-Walled Square Tube Using DYNA3D"
Quattrini, Thomas (1/94)	"Rules Based Concurrent Engineering"
Hong, Wein (3/94)	"Efficient Move Limit Assignment for Optimization"
Chang, Chenglin (4/94)	"2-D Airfoil Shape Optimization for Performance in Subsonic, Potential Flow"
Shim, Young-Shik (4/94)	"Application of Neural Networks to Preliminary Airfoil Shape Design"
Reilly, Jean Marie (5/94)	"Intelligent Approximations for Structural Optimization"
Martens, Daryl (1/96)	"Development of a Nonlinear Programming Computational Infrastructure"
Gawve, Warren (9/96)	"Optimization of an Electro-Mechanical Knife for Thin Gage Material"
Zhou, Qihua (8/97)	"Development of Heuristic Optimization Software Package in X-Window Platform"
Chen, Chih-Yi (1/98)	"Comparison of Approximation Methods for Optimal Truss Design"
Huang, Chen-Hung (1/98)	"The Study of Sensitivity Error on Optimization Method"
Singh, Ajit (6/98)	"Tolerance Analysis and Allocation Using a Method of Design of Experiments"

Graduate Student Research Supervision (continued):

M.S. Project (continued)

Samant, Amit (5/00) "Constraint Representation in Graph Morphing"

Shah, Pranay (5/00) "Benchmarking of Design Variable Ranking for Graph Morphing"

Agarwal, Sonu (1/03) "Multiple Response Surface Optimization Method"

Porcari, Richard (1/03) "Web-based Design of a Portable Vertical Impactor Plant"
(Dr. E. Winer primary advisor)

M.Eng. Project

completed:

Gionta, Matthew (12/94) "Conceptual Design of a Composite Sport Plane"

Petrovic, Nicola (5/99) "Optimal Design of Balancing Crankshafts"

M.S. All Course

completed:

Chen, Jyh-Woei (5/92)
Hang, Sho-Hsiang (4/94)
Wang, Shu (4/94)
Shyh-Jye Wey(12/94)
Yunchung Chang (11/94)
Sing-Hua Liaw (12/94)
Yu-Chin Li (2/95)
Chi-Ming Liu (12/95)
Chung-Yu Su (7/96)
Anthony Santarosa (1/97)
Jeffrey LaDelfa (5/98)
Chi-Ming Sun (6/99)
Robert Avar (8/99)
Daryl Hostetler (7/03)

Graduate Student Committee Membership:

Chetan Jadhav	M.S.	7/04
Michael Kulok	M.S.	6/04
Gurnani, Ashwin	M.S.	8/03
Kanukolanu, Deepti	M.S.	4/03
Pinto, Pradeep	M.S.	1/03
Malik, Tabrez	M.S.	6/02
Brauen, Trevor	M.S.	4/01
Halecki, Thomas	M.S.	4/01
Callaghan, Alison	M.S.	11/99
Chen, Shi-Jie	Ph.D.	8/99
Tu, Weizhen	Ph.D.	6/99
Kasprczak, Edward	M.S.	2/99
Ramaswamy, Vasudevan	M.S.	2/99
Wang, Kerwin	M.S.	2/99
Enzer, Marc	M.S.	9/98
Boehly, Greg	M.S.	1/98
Pettitt, Edward	M.S.	1/98
Levy, Sharon	M.S.	1/97
Castillo, Luciano	Ph.D.	12/96
Chien, Chih-Te	M.S.	12/96
Song, Liugen	Ph.D.	7/96
Lo, Chia-Lung	M.S.	12/95
Tsai, Po-Yueh	M.S.	12/95
Chen, Shi-Hie	M.S.	10/95
Lubchenko, Erine	M.S.	10/95
Victor, Gary	M.S.	8/95
Crassidis, Agammemnon	Ph.D.	6/95
Nagaraz, Ashwin	Ph.D.	2/95
Yu, Chen-Hsien	M.S.	12/94
Yeh, Hsin-Fu	M.S.	11/94
VanNostrand, William	Ph.D.	3/94
Lavery, Mark	M.S.	12/93
Thompson, Shawn	M.S.	12/93
Pfister, Jorg	M.S.	7/93
Wentscher, Holger	M.S.	6/93
Branca, Caroline	M.S.	4/93
Crassidis, John L.	Ph.D.	4/93
Krishnaswami, Mukund	M.S.	4/93
Meyer, Thomas	M.S.	10/92
Macaluso, Peter	M.S.	8/92
Nguyen, Son	M.S.	4/92
Song, Dongwoo	M.S.	4/92
Van Nostrand, William	M.S.	4/92

Hamernick, Tami	M.S.	1/92
Mason, Paul	M.S.	11/91

Undergraduate Honor Student Committee Membership:

Scott Ferguson B.S. 5/02

Grants And Contracts:

Under review:

Title: An Intuitive Visualization Tool to Support Decision-Making in Multiobjective Optimization
Participation: PI with Co-PI K. Lewis
Source: NSF
Period: 4/01/05 – 3/30/08
Amount: $552,458

Awarded:

Title: Roll-out and Application of SOLVE – A Coldbox Optimal Design and Visualization Tool
Participation: PI with Co-PIs K. English, T. Kesavadas
Source: Praxair, Inc.
Period: 1/01/03 - 12/31/04
Amount: $70,333 (Grant), $90,000 (Development Contribution)

Title: NYSCEDII: New York State Center for Engineering Design and Industrial Innovation
Participation: PI with Co-PIs Mark Karwan, Andres Soom, and Ken English
Source: New York State, NYSTAR
Period: 7/01/04 – 12/31/05
Amount: $250,000

Title: NYSCEDII: New York State Center for Engineering Design and Industrial Innovation
Participation: PI with Co-PIs Mark Karwan, Andres Soom, and Eliot Winer
Source: New York State, NYSTAR
Period: 1/01/03 - 5/31/04
Amount: $488,000

Title: ITR/AP+IM: Information Processing for Integrated Observation and Simulation-Based Risk Management of Geophysical Mass Flows
Participation: Co-PI with PI Abani Patra, Co-PIs T. Kesavadas, E. Bruce Pitman, and Michael Sheridan, and Senior Personnel Marcus Bursik, Matt Jones, David Mark, and Eliot Winer
Source: National Science Foundation

Period: 9/1/01 - 8/31/05
Amount: 1,924,981

Grants And Contracts (continued):

Title:	Visual Design Steering as a Decision Support Aid in Design and Rapid Virtual Prototyping.
Participation:	Co-PI with PI Kemper Lewis, Co-PIs Aidong Zhang, Ann Bisantz, and Eliot Winer
Source:	National Science Foundation
Period:	9/1/01 - 8/31/05
Amount:	$347,000

Title:	Integration and the Implementation of a Distributed Multi-package Coldbox Optimization and Visualization Design Capability
Participation:	PI with Co-PIs K. English, K. Lewis, T. Kesavadas
Source:	Praxair, Inc.
Period:	1/01/02 – 12/31/02
Amount:	$58,809 (Grant), $45,000 (Development Contribution)

Title:	NYSCEDII: New York State Center for Engineering Design and Industrial Innovation
Participation:	PI with Co-PIs Mark Karwan, Andres Soom, and Eliot Winer
Source:	New York State, NYSTAR
Period:	1/01/02 - 12/31/02
Amount:	$488,000

Title:	NYSCEDII: New York State Center for Engineering Design and Industrial Innovation
Participation:	PI with Co-PIs Mark Karwan, T. Kesavadas, Andres Soom, and Eliot Winer
Source:	New York State, NYSTAR
Period:	6/1/00 - 9/15/01
Amount:	$1,000,000

Title:	NYSCEDII: New York State Center for Engineering Design and Industrial Innovation
Participation:	PI with Co-PIs Mark Karwan, T. Kesavadas, Andres Soom, and Eliot Winer
Source:	New York State, Agency to be determined
Period:	6/1/00 - 12/31/02
Amount:	$1,500,000

Title:	SOLVE - A Multi-package Optimal Design and Visualization Tool
Participation:	PI with Co-PI Kemper Lewis and T. Kesavadas
Source:	Praxair, Inc.
Period:	1/01/01 - 12/31/01
Amount:	$51,655 (Grant), $45,000 (Development Contribution)

Grants And Contracts (continued):

Title:	Development of a Multi-Package Site Optimization Capability
Participation:	PI with Co-PI Kemper Lewis
Source:	Praxair, Inc.
Period:	1/01/00 - 12/31/00
Amount:	$83,394

Title:	Creation of an Interactive Product Development Tool (Phase 3)
Participation:	PI with Co-PIs T. Kesavadas, Kemper Lewis
Source:	Praxair, Inc.
Period:	1/01/99 - 12/31/99
Amount:	$91,000

Title:	Visualization as a Decision Support Tool in Multidisciplinary Design
Participation:	Co-PI with PI Kemper Lewis
Source:	National Science Foundation
Period:	6/1/98 - 9/1/00
Amount:	$185,917

Title:	Conferences in the Disciplines: Support for 3rd World Congress of Structural and Multidisciplinary Optimization
Participation:	PI with Co-PIs Kemper Lewis and Roger Mayne
Source:	University at Buffalo
Period:	7/98 - 6/99
Amount:	$2,500

Title:	An Empirical Investigation of Concurrent Engineering Practices and Their Impact on Firm Performance
Participation:	Co-PI with PI Nallen Suresh and Co-PI Kemper Lewis
Source:	University at Buffalo
Period:	6/98-5/99
Amount:	$20,000

Title:	Establishment of a High Performance Real-Time Visualization Research Laboratory
Participation:	Co-PI with PI T. Kesavadas and Co-PI's Rakesh Nagi, Raj Acharya
Source:	National Science Foundation
Period:	1/98 - 1/01
Amount:	$86,714 (with $32,750 matching from UB)

Title:	Presidential Faculty Fellow (PFF): Development of Methods for MDO
Participation:	PI
Source:	National Science Foundation
Period:	9/95 - 8/00
Amount:	$500,000

Grants And Contracts (continued):

Title: ILI: Improvement of Force Measurement Laboratory
Participation: PI with with Co-PI's Barry Lieber and William Rae
Source: National Science Foundation
Period: 6/97 - 5/99
Amount: $24,238 (with $25,000 matching from UB)

Title: Creation of an Interactive Product Development Tool (Phases 1 & 2)
Participation: PI with Co-PIs T. Kesavadas, Kemper Lewis
Source: Praxair, Inc.
Period: 10/97-12/98
Amount: $118,809

Title: Development of Optimal Convergence Strategies for Distributed Complex Design
Participation: PI
Source: NASA Langley Research Center
Period: 3/96-9/98
Amount: $112,064

Title: Optimal Product Line Development
Participation: PI
Source: Praxair, Inc.
Period: 8/96-9/97
Amount: $17,557

Title: Support for Research with Modeling and Simulation Program at LMTAS
Participation: PI
Source: Lockheed Martin Tactical Aircraft Systems
Period: 1/97-6/97
Amount: $6,394

Title: REG: Development of an ATM-based Cluster Platform for Integrated Design
Participation: PI with Co-PI Patrick W. Dowd
Source: National Science Foundation
Period: 3/96 - 3/97
Amount: $83,719 (with $42,000 matching from UB)

Title: Human - Computer Interfacing in Multisensor Fusion Systems
Participation: Co-PI with PI James Llinas and Co-PI's Colin Drury, Stuart Chen
Source: University at Buffalo
Period: 5/96-1/97
Amount: $17,874

Grants And Contracts (continued):

Title: Upgrade of a High Performance Parallel Computer Platform for SEAS
Participation: PI with Co-PI Charles Brunskill
Source: Sun Microsystems
Period: 3/96-12/96
Amount: $126,930 (with $25,000 matching from UB)

Title: RIA: System Reduction Strategies for Efficient Design Synthesis
Participation: PI
Source: National Science Foundation
Period: 8/93 - 8/96
Amount: $94,797

Title: Graduate Group in Integrated Design Engineering
Participation: PI with Co-PI Rakesh Nagi
Source: University at Buffalo
Period: 7/94 - 6/96
Amount: $5,000

Title: Optimal Networking for Integrated Design Engineering
Participation: PI with Co-PI Patrick Dowd
Source: University at Buffalo
Period: 5/94 - 7/95
Amount: $20,000

Title: Optimal Scheduling for Reduction of Complex Systems
Participation: PI
Source: NASA Langley Research Center
Period: 3/94-3/96
Amount: $91,496

Title: Multidisciplinary Design and Analysis Program
Participation: PI with Co-PI Andres Soom
Source: NASA Headquarters
Period: 11/93 - 5/94
Amount: $50,000

Title: Acquisition of High Performance Parallel Computer for SEAS
Participation: PI with Co-PI's including 15 Assistant Professors from SEAS
Source: University at Buffalo
Period: 1/94 - 12/94
Amount: $228,000

Grants And Contracts (continued):

Title: An Intelligent Synthesis Method for Concurrent Engineering Applications
Participation: PI
Source: Engineering Foundation
Period: 9/92 - 8/93
Amount: $23,000

Title: Summer Faculty Fellowship
Participation: PI
Source: ASEE/NASA Langley Research Center
Period: 5/92 - 8/92
Amount: $11,000

Title: University Teaching Fellowship - Development of In-Class Structures Demonstrations
Participation: PI
Source: University at Buffalo
Period: 1/92 - 12/92
Amount: $1,750

Title: Travel Grant and Advanced Study Institute Grant for NATO ASI
Participation: PI
Source: NSF/NATO
Period: 9/91 - 10/91
Amount: $866 and $870

Consulting:

Jaeckle, Fleischmann, and Mugel, Attorneys at Law, 5/95

Disclosures, Pantent Applications

Technology Disclosures for: Geographic Independent Virtual Environment (GIVE), Visual Dependency Structure Matrix, and Graph Morphing (technology licensed to Visual Design Systems, LLC), 2002

Technology Disclosures for: Hyperspace Diagonal Counting for Multiobjective Pareto Frontier Visualization, Hyperspace Diagonal Counting for Multidimensional Visualization, and Hyperspace Diagonal Counting for Multidimensional Database Visualization and Data Mining, 2004

U.S. Provisional Patent No. 60/601, 421, files 8/13/2004 for Hyperspace Diagonal counting for Multiobjective and Multidimensional Applications

Invited Presentations/Seminars:

"Visual Design Steering (VDS) as a New Paradigm for Engineering Design", Keynote Address, Engineering Design Conference 2002 (EDC2002), King's College London, England, July 2002.

"The New York State Center for Engineering Design and Industrial Innovation (NYSCEDII)", Special Presentation for UB Open House, See UB in 3-D, April 2002.

"The New York State Center for Engineering Design and Industrial Innovation (NYSCEDII)", Service Excellence Task Force, University at Buffalo, October 2001.

"Visual Design Steering for Complex Systems", Seminar, Department of Aeronautics, Mechanics, and Mechanical Engineering, Rensselaer Polytechnic Institute, April 2001.

"Visualization as a Tool for Steering Complex Design", Seminar, Department of Industrial Engineering, University at Buffalo, April 2001.

"Visualization as an Aid in Complex Analysis and Design: An Overview of NYSCEDII Activities", Seminar, Center for Computational Research (CCR), University at Buffalo, May 5, 2000.

"Visual Design Steering in Multidisciplinary Design Optimization", Invited Seminar, Department of Mechanical Engineering, Iowa State University, October 28, 1999.

"Using a Virtual DSM to improve Coupling Selection for Suspension in Multidisciplinary Design Optimization", LFM/LAI/CIPD/FORD MIT Design Structure Matrix (DSM) Workshop, MIT, Cambridge, Mass., September 1999.

"Managing Efficiency versus Accuracy Decisions in Multidisciplinary Design Optimization", Seminar, Department of Aerospace Engineering, Mechanics, and Engineering Science, University of Florida, May 1998.

"Reducing Time and Cost in the Design Process", Short Course developed and taught in conjunction with 6th AIAA/NASA/ISSMO MDO Conference, Bellevue, WA, September 1996.

"Multidisciplinary Design Optimization - Applications to Systems and Controls", NSF Underrepresented/Minority Workshop, Washington, D.C., September 1995.

"Decomposition in Aircraft Design", Presentation, NSF/NASA Multidisciplinary Aircraft Design Workshop, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, May 1993.

"A Non-Hierarchic Decomposition Method for Synthesis of Mixed Discrete/Continuous Systems", Seminar, NASA Langley Research Center, February 1993.

"Concurrent Optimal Design", Presentation, Zonta International - Geneva Chapter, January 1993.

Invited Presentations/Seminars (continued):

"Heuristics-Based Coupling Strengths in Complex Engineering Systems", Seminar, State University at Buffalo, Department of Mechanical and Aerospace Engineering, Applied Artificial Intelligence in Engineering Graduate Group, September 1992.

"An Intelligent Decomposition Approach for Efficient Design of Non-Hierarchic Systems", Seminar, NASA Langley Research Center, August 1992.

"Non-Hierarchic System Decomposition for Multidisciplinary Synthesis", Seminar, Pennsylvania State University, Department of Mechanical Engineering, March 1991.

"Non-Hierarchic System Decomposition for Multidisciplinary Synthesis", Seminar, Iowa State University, Department of Aerospace Engineering and Engineering Mechanics, March 1991.

"Non-Hierarchic System Decomposition for Multidisciplinary Synthesis", Seminar, Modeling & Computing Services, Freemont, California, February 1991.

"Non-Hierarchic System Decomposition for Multidisciplinary Synthesis", Seminar, State University of New York at Buffalo, Department of Mechanical and Aerospace Engineering, February 1991.

"Non-Hierarchic System Decomposition for Multidisciplinary Synthesis", Seminar, Virginia Technical Institute and State University, Department of Aerospace and Ocean Engineering, December 1990.

"Non-Hierarchic System Decomposition for Multidisciplinary Synthesis", Seminar, University of Texas at Arlington, Department of Aerospace Engineering, November 1990.

Publications – Books:

Hajela, P., Sobieski, J., and Bloebaum, C. L., Optimal Design in Multidisciplinary Systems, (in preparation).

Publications - Book Chapters:

Bloebaum, C.L., Hajela, P., and Sobieski-Sobieszczanski, J., "Decomposition Methods for Multidisciplinary Synthesis", Chapter for the Volume *Multidisciplinary Engineering Systems: Design and Optimization Techniques and Their Applications* for the series Control and Dynamic Systems, Academic Press, Vol. 57, pp. 1-23, 1993.

Publications – Invited Journal Contributions:

Bloebaum, C. L., "The Promise of Visualization for Computational Design Steering", *Design Optimization: International Journal for Product and Process Improvement*, Vol. 2, March 1999.

Publications – Invited Journal Contributions (continued):

Bloebaum, C. L., Review of the 7th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization – an Academic Perspecitve, *Design Optimization: International Journal for Product and Process Improvement*, Vol. 1, January 1999.

Publications - Archived Journals:

In preparation for submission:

Huang, C. H., Bloebaum, C. L., "Multiobjective Pareto Concurrent Subspace Optimization for Multidisciplinary Design", to be submitted to AIAA Journal.

English, K., Bloebaum, C. L., "Visualizing Trade-offs in Complex System Optimization", to be submitted to AIAA Journal.

Huang, C.-H., Bloebaum, C. L., "Visualization as a Solution Aid for Multiobjective Concurrent Subspace Optimization in a Multidisciplinary Design Environment", to be submitted to AIAA Journal of Aerospace Computing, Information, and Communication.

Huang, C.-H., Bloebaum, C. L., "Incorporation of Preferences in Multiobjective Concurrent Subspace Optimization", to be submitted to ASME Journal of Mechanical Design.

A.C. Bauer, C. L. Bloebaum, M. Bursik, A. Chanda, K. Dalbey, L.M. Namikawa, V. Kalivarapu, T. Kesavadas, C.C. Nichita, A.K. Patra, E.B. Pitman, C.S. Renschler, B. Rupp, M.F. Sheridan, A. Sorokine, A.J. Stinton, A. Vaze, A. Webber, E. Winer, "Integrated Simulation and Visualization Tools for Geophysical Mass Flow Hazard Risk Analysis – the TITAN Toolset", to be submitted to Journal of Computational Geosciences.

Appeared:

Winer, E.H., Bloebaum, C.L., "Development of Visual Design Steering as an Aid in Large Scale Multidisciplinary Design Optimization – Part I: Method Development, *Structural and Multidisciplinary Optimization*, Vol. 23, No. 6, July 2002, pp. 412-424.

Winer, E.H., Bloebaum, C.L., "Development of Visual Design Steering as an Aid in Large Scale Multidisciplinary Design Optimization – Part II: Method Validation, *Structural and Multidisciplinary Optimization*, Vol. 23, No. 6, July 2002, pp. 425-435.

K. English , C.L. Bloebaum , E. Miller, "Development of multiple cycle coupling suspension in the optimization of complex systems", *Structural and Multidisciplinary Optimization* , Vol. 22, No. 4, pp 268-283, 2001.

E.H. Winer , C.L. Bloebaum, "Visual design steering for optimization solution improvement", *Structural and Multidisciplinary Optimization,* Vol. 22, No. 3, pp 219-229, 2001.

Publications - Archived Journals (continued):

Hulme, K. F., Bloebaum, C. L., "A Simulation-based Comparison of Multidisciplinary Solution Strategies using CASCADE", *Structural Optimization*, Vol. 19, No. 1, March 2000, pp17-35.

Rogers, J. L., McCulley, C., Bloebaum, C. L., "Optimizing the Process Flow for Complex Design Projects", *Design Optimization: International Journal for Product and Process Improvement*, Number 3, 1999, pp. 281-292.

Becker, J.C., Bloebaum, C.L., "Distributed Computing for Multidisciplinary Design Optimization Using Java", *Structural Optimization*, Volume 14, Number 4, December 1997, pp. 203-218.

McCulley, C., Hulme, K., and Bloebaum, C.L., "Simulation-Based Development of Heuristic Strategies for Complex System Convergence", *Applied Mechanics Reviews*, Vol. 50 (11), November 1997, pp. 117-124.

Hulme, K.F., Bloebaum, C.L., "Development of a Multidisciplinary Design Optimization Test Simulator", *Structural Optimization*, Volume 14, Number 2-3, October 1997, pp. 129-137.

McCulley, C., Bloebaum, C. L., "A Genetic Tool for Optimal Design Sequencing in Complex Engineering Systems", *Structural Optimization*, Volume 12, Number 2-3, October 1996, pp. 186-201.

Chi, H. -W., Bloebaum, C. L., "Mixed Variable Optimization Using Taguchi's Orthogonal Arrays", *Structural Optimization*, Volume 12, Number 2/3, October 1996, pp. 147-152.

Serhan, H., Bloebaum, C. L., Bennett, G., "Multidisciplinary Design Optimization of Lumbar Transpedicular Screws", *Structural Optimization*, Volume 10, Number 3/4, December 1995, pp. 222-230.

Bloebaum, C. L. "Coupling Strength-based System Reduction for Complex Engineering Design", *Structural Optimization*, Volume 10, Number 2, October 1995, pp. 113-121.

Bloebaum, C. L., Hajela, P., and Sobieski, J., "Non-Hierarchic System Decomposition in Structural Optimization", *Engineering Optimization*, Volume 19, 1992, pp. 171-186.

Sobieski, J., Bloebaum, C. L., and Hajela, P., "Sensitivity of Control-Augmented Structure Obtained by a System Decomposition Method", *AIAA Journal*, Volume 29, Number 2, 1991, pp. 264-270.

Hajela, P., Bloebaum, C .L., and Sobieski, J., "Application of Global Sensitivity Equations in Multidisciplinary Aircraft Synthesis", *Journal of Aircraft*, Volume 27, Number 12, 1990, pp. 1002-1010.

Bloebaum, C. L., "Global Sensitivity Analysis in Control-Augmented Structural Synthesis", *AIAA Student Journal*, Summer issue, 1989.

Publications - Peer Reviewed Conference Proceedings (Full Papers):

Parashar, S., Bloebaum, C.L., "Decision Support Tool for Multidisciplinary Design Optimization (MDO) using Multi -Domain Decomposition", accepted for 1st AIAA Multidisciplinary Design Optimization Specialist Conference, Austin, Texas, April 18-21, 2005.

Agrawal, G., Chugh, K., Bloebaum, C.L., "A New Intuitive Approach to Visualize Multi-dimensional Functional Relationships for Optimization Applications", accepted for 1st AIAA Multidisciplinary Design Optimization Specialist Conference, Austin, Texas, April 18-21, 2005.

Chiam, T.-W., Bloebaum, C. L., "Developement of a Pseudo- Gradient Augmented Heuristic Optimization Method", proceedings of 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Albany, NY, September 2004.

Agrawal, G., Lewis, K. E., Chugh, K., Huang, C.-H., Parashar, S., and Bloebaum, C. L., "Intuitive Visualization of Pareto Frontier for Multi-Objective Optimization in n-Dimensional Performance Space", proceedings of 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Albany, NY, September 2004.

Huang, C.-H., Bloebaum, C. L., "Visualization as a Solution Aid for Multi-Objective Concurrent Subspace Optimization in a Multidisciplinary Design Environment", proceedings of 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Albany, NY, September 2004.

Huang, C.-H., Bloebaum, C. L., "Incorporation of Preferences in Multi-Objective Concurrent Subspace Optimization", proceedings of 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Albany, NY, September 2004.

Morankar, J., Bloebaum, C. L., "Application of Multidisciplinary Design Optimization for a Diesel Engine Cooling System" proceedings of 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Albany, NY, September 2004.

Agrawal, G., Bloebaum, C. L., English, K., Bisantz, A., "Web-based Visualization Environment for Decision-making in Multidisciplinary Design Optimization", Proceedings of 45th AIAA/ASME/ASCE/ASC Structures, Structural Dynamics, and Materials Conference, April 2004, Palm Springs, California.

Huang, C. H., Bloebaum, C. L., "Multi-Objective Pareto Concurrent Subspace Optimization for Multidisciplinary Design", Proceedings of 41st AIAA Aerospace Sciences Meeting and Exhibit, January 2004, Reno, Nevada.

Parashar, S., English, K., Bloebaum, C. L., "Data Transmission in Multidisciplinary Design Optimization using Platform-Independent Data Structures", Proceedings of 41st AIAA Aerospace Sciences Meeting and Exhibit, January 2004, Reno, Nevada.

Publications - Peer Reviewed Conference Proceedings (Full Papers – continued):

Bhandewale, A., Kesavadas, T., English, K., Bloebaum, C.L., Lewis, K.E., and Chugh, K., "Interactive Design and Visualization of a Chemical Plant", Proceedings of 2003 ASME International Mechanical Engineering Congress and R&D Expo, Washington, D.C., November 2003.

Abdul-Jalil, M.K., Bloebaum, C.L., "Collaborative Virtual Engineering Design Environment", CoGRAMM'02, National Conference on Computer Graphics and Multimedia, October 2002, Melaka, Malaysia.

Sheridan, M.F., Bloebaum, C.L., Kesavadas, T., Patra, A.K., and Winer, E., "Visualization and Communication in Risk Management of Landslides", Proceedings of Risk Analysis 2002 (the Third International Conference on Computer Simulation in Risk Analysis and Hazard Mitigation), June 2002, Sintra, Portugal

Ahmad, F., Bloebaum, C., "A Scalable Parallel Direct Optimization Method for Large-Scale Design", Proceedings of 9th AIAA/ISSMO MDO Conference, Atlanta, Georgia, September, 2002.

Misra, U., Bloebaum, C., "A Parallel Hybrid Genetic Simulated Annealing Algorithm for Large- Scale Constrained Optimization", Proceedings of 9th AIAA/ISSMO MDO Conference, Atlanta, Georgia, September, 2002.

Bloebaum, C., English, K., Winer, E., "Visual Design Steering (VDS) as a New Paradigm for Engineering Design", Keynote Address, Engineering Design Conference 2002 (EDC2002), London, England, July 2002.

English, K., Bloebaum, C. L., "Subsystem and Coupling Cost Considerations Using a Visual Dependency Structure Matrix", proceedings of 40th AIAA Aerospace Sciences Meeting, Reno, Nevada, January, 2002.

English, K., Winer, E., Bloebaum, C. L., "A Visualization-based Framework for Trade-offs in Complex Engineering Design", proceedings of the 5th International Conference on Engineering Design and Automation, Las Vegas, Nevada, August 2001.

Abdul-Jalil, M.K., Bloebaum, C.L., "Development of a Collaborative Environment for Finite Element Simulation", proceedings of the 9th International Conference on Human Computer Interaction, New Orleans, Louisiana, August 2001.

English, K., Bloebaum, C. L., "Enhanced Total Derivative-based Coupling Suspension in Complex System Optimization", proceedings of 39th AIAA Aerospace Sciences Meeting, Reno, Nevada, January, 2001.

Winer, E.H., Bloebaum, C.L., "Visual Design Steering For Optimization Solution Improvement", proceedings of 8th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Long Beach, CA, September 2000.

Publications - Peer Reviewed Conference Proceedings (Full Papers – continued):

Hulme, K., Bloebaum, C.L., "A Performance-based Investigation of Parallel and Serial Approaches to Multidisciplinary Analysis Convergence", proceedings of 8th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Long Beach, CA, September 2000.

English, K., Bloebaum, C.L., "A Comparison of Optimization Techniques for Solving the Coupling Suspension Problem", proceedings of 8th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Long Beach, CA, September 2000.

Abdul-Jalil, M.K., Bloebaum, C.L., "Development Of A Distributed Collaborative Virtual Environment For Engineering Design Application", proceedings of 8th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Long Beach, CA, September 2000.

Hulme, K., Bloebaum, C.L., "Development of a Simulation-based Framework for Exploiting New Tools and Techniques in Multidisciplinary Design Optimization", proceedings of 1st ASMO UK/ISSMO Conference on Engineering Design Optimization, West Yorkshire, England, July 8-9, 1999.

Bloebaum, C.L., et. al, "The Development of a Robust Layout Optimization Tool and its Application in the Air Separation Industry", proceedings of Optimization in Industry 2, Banff, Canada, June 6-11, 1999.

English, K., Bloebaum, C.L., "Complex System Solution Management Using Visualization", proceedings of 3rd ISSMO/UBCAD/UB/AIAA World Congress of Structural and Multidisciplinary Optimization, Niagara Falls/Amherst, NY, May 1999.

Hulme, K.F., Bloebaum, C.L., "A Comparison of Formal and Heuristic Strategies for Iterative Convergence of a Coupled Multidisciplinary Analysis", proceedings of 3rd ISSMO/UBCAD/UB/AIAA World Congress of Structural and Multidisciplinary Optimization, Niagara Falls/Amherst, NY, May 1999.

Winer, E., Bloebaum, C.L., "Using the World Wide Web to Employ Concurrent Design Methodologies", proceedings of 3rd ISSMO/UBCAD/UB/AIAA World Congress of Structural and Multidisciplinary Optimization, Niagara Falls/Amherst, NY, May 1999.

English, K., Bloebaum, C.L., "Development of Multiple Cycle Coupling Suspension in Complex System Optimization", proceedings of the 7th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, St. Louis, MO, September 1998.

Hulme, K.F., Bloebaum, C.L., "A Comparison of Solution Strategies for Simulation-based Multidisciplinary Design Optimization", proceedings of the 7th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, St. Louis, MO, September 1998.

Publications - Peer Reviewed Conference Proceedings (Full Papers – continued):

McCulley, C., Bloebaum, C.L., "Comparison of Heuristic Convergence Strategies for Multidisciplinary Analysis", proceedings of the 7th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, St. Louis, MO, September 1998.

Winer, E.H., Abdul-Jalil, M.K., Bloebaum, C.L., "Development of a Geographic Independent Virtual Design Environment for Large-Scale Design", proceedings of the 7th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, St. Louis, MO, September 1998.

English, K., Nair, A.R., Bloebaum, C.L., Lewis, K., "Layout Optimization for Component Packing", proceedings of the 2nd International Conference on Engineering Design and Automation, Maui, Hawaii, August 1998.

Winer, E., Bloebaum, C.L., "Interactive 3-D Visualization for Large-Scale Multidisciplinary Design Optimization", proceedings of the 2nd International Conference on Engineering Design and Automation, Maui, Hawaii, August 1998.

Abdul-Jalil, M.K., Winer, E.H., Bloebaum, C.L., "Development of a Virtual Visualization Environment for Large-Scale Design", proceedings of the 39th AIAA/ASME/ASCE/AHS/ASC SDM Conference, Long Beach, CA, April 1998 (Invited Paper).

Winer, E., Bloebaum, C.L., "N-Dimensional Design Visualization via Graph Morphing for Large Scale Optimization", proceedings of the 2nd World Congress of Structural and Multidisciplinary Optimization, Zakopane, Poland, May 1997.

Winer, E., Bloebaum, C.L., "Design Visualization by Graph Morphing for Multidisciplinary Design Optimization", proceedings of the 1st International Conference of Engineering Design and Automation, Bangkok, Thailand, March 1997.

Bloebaum, C.L., McCulley, C., "Genetic Algorithm-Based Optimal Sequencing for Reduction of Design Cycle Time and Cost", proceedings of the 5th Pan American Congress of Applied Mechanics, San Juan, Puerto Rico, January 1997.

Becker, J. C., Bloebaum, C.L., "Distributed Computing for Multidisciplinary Design Optimization Using JAVA as a Web Interface", proceedings of the 6th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Bellevue, WA, September 1996.

Chi, H. -W., Bloebaum, C.L., "Concurrent Subspace Optimization for Mixed Variable Coupled Engineering Systems", proceedings of the 6th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Bellevue, WA, September 1996.

English, K., Miller, E., Bloebaum, C.L., "Total Derivative-Based Coupling Suspension for System Reduction in Complex Design", proceedings of the 6th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Bellevue, WA, September 1996.

Publications - Peer Reviewed Conference Proceedings (Full Papers – continued):

Hulme, K., Bloebaum, C.L., "Development of CASCADE: A Multidisciplinary Design Test Simulator", proceedings of the 6th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Bellevue, WA, September 1996.

McCulley, C., Bloebaum, C.L., "Complex System Design Task Sequencing for Cost and Time Considerations", proceedings of the 6th AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Bellevue, WA, September 1996.

Rogers, J., McCulley, C., Bloebaum, C. L., "Integrating a Genetic Algorithm into a Knowledge-based System for Ordering Complex Design Processes", proceedings of Fourth International Conference on AI in Design, Stanford, CA, June 1996.

Chi, H. -W., Bloebaum, C. L., "Mixed Variable Optimization Using Taguchi's Orthogonal Arrays", proceedings of 21st ASME Design Automation Conference, Boston, Mass., September, 1995.

Lasher, E. J., Bloebaum, C. L., "Impact of Sensitivity Analysis Error on Optimal Solution Accuracy", proceedings of 36th AIAA/ASME/ASCE/AHS/ASE SDM Conference, New Orleans, LA, April 1995.

Fuessel, D., Singh, T., Bloebaum, C. L., "Optimum Model Size for Minimum Residual Vibration", proceedings of 36th AIAA/ASME/ASCE/AHS/ASE SDM Conference, New Orleans, LA, April 1995.

Rogers, J., Bloebaum, C. L., "Organization of Tasks for Complex Design", proceedings of the Fifth AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Panama City, Florida, September 1994.

Fuessel, D., Bloebaum, C. L., "Optimal System Model Accuracy for Complex Design", proceedings of the Fifth AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Panama City, Florida, September 1994.

McCulley, C., Bloebaum, C. L., "Optimal Scheduling for Complex Engineering Systems Using Genetic Algorithms", proceedings of the Fifth AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Panama City, Florida, September 1994.

Bloebaum, C. L., Hong, W., Peck, A., "Improved Move Limit Strategy for Approximate Optimization", proceedings of the Fifth AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Panama City, Florida, September 1994.

Khalak, H., Miller, R., Weeks, C., Bloebaum, C. L., "Simulated Annealing Applied to Molecular Structure Determination", proceedings of the Fifth AIAA/USAF/NASA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Panama City, Florida, September 1994.

Publications - Peer Reviewed Conference Proceedings (Full Papers – continued):

Bloebaum, C. L., Chi, H. -W., "A Concurrent Decomposition Approach for Mixed Discrete/Continuous Variables", proceedings of 35th AIAA/ASME/ASCE/AHS/ASE SDM Conference, 1994.

Bloebaum, C. L., Mulubagal, G., Rosner, A., 'Multidisciplinary Design with Tolerance Allocation for Maximum Quality", proceedings of 35th AIAA/ASME/ASCE/AHS/ASE SDM Conference, 1994.

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