Professor Sherrill B. Biggers

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Biography:
Sherrill Biggers joined the Department in 1989 after 11 years with Lockheed-Martin where he was manager of NASA composite programs in Burbank. Prior to that, he was on the faculty at the University of Kentucky for 8 years. He has received teaching awards at both universities. He is a member of ASEE, an Associate Fellow of AIAA, and a Fellow of ASME. He is a registered Professional Engineer.

Education:
PhD, Duke University, 1971
MS, Duke University, 1970
BS, North Carolina State University, 1966

Research Interests:
Computational solid mechanics, instructional methods in mechanics, progressive failure and nonlinear response of composite structures, wheel-soil interaction, and optimum design.

Selected Publications :

Wilson, J. F., Holloway, D. M. & Biggers, S. B, Stability experiments on the strongest columns and circular arches - The stability and practicality of least-weight columns and arches, designed to carry the maximum possible load without buckling, are evaluated, Experimental Mechanics. 11, 7, p. 303-308, July 1971

Wilson, J. F. F. & Biggers, S. B., Responses Of Submerged, Inclined Pipelines Conveying Mass, *J Eng Ind Trans ASME*. 4 ed. Vol. 96 Ser B, p. 1141-1146, Nov 1974

Dickson, J. N., Biggers, S. B. and Wang, J. T. S. (1980). A Preliminary Design Procedure for Composite Panels with Open-section Stiffeners Loaded in the Post-buckling Range, In: Bunshell, A. R. (ed.), Advances in Composite Materials, pp. 812-825, Pergamon Press, Oxford.

J.N. Dickson and S.B. Biggers (NASA Langley Research Center, Hampton, Virginia, USA), "POSTOP: Postbuckled open-stiffener optimum panels-theory and capability" NASA Contractor Report from NASA Contract NAS1 -15949, May 1982.

Wang, J. T. S., Biggers, S. B. & Dickson, J. N., Buckling Of Composite Plates With A Free Edge In Edgewise Bending And Compression, AIAA journal. 22, 3, p. 394-398, Mar 1984

Dickson, J. N., Biggers, S. B., and Starnes, J. H., Jr., "Stiffener Attachment Concepts for Graphite-Epoxy Panels Designed for Postbuckling Strength," AFWAL-TR-85-3094, June 1985, pp. v(a)95-v(a)109

John N. Dickson ; Sherrill B. Biggers, Buckling And Postbuckling Of Composite Aircraft Structure, *Unknown Host Publication Title*. Bethlehem, PA, USA: Structural Stability Research Council, p. 395-406, Dec 1986

Sherrill B. Biggers and Sundar Srinivasan, Improved compression buckling for rectangular composite plates by stiffness tailoring, *American Society of Mechanical Engineers (Publication) NDE.*, Vol. 10, p. 187-195, Dec. 1991

Biggers, S. B. and Srinivasan, S, Compression buckling response of tailored rectangular composite plates, AIAA journal. 31, 3, p. 590-596, Mar 1993

Sherrill B. Biggers and Sundar Srinivasan, Compressive postbuckling response of stiffness tailored composite plates, *American Society of Mechanical Engineers, Applied Mechanics Division, AMD*. Hyer, M. W. (ed.). New York, NY, United States: Publ by ASME, Vol. 159, p. 61-70, Jan 1993

Biggers, S. B. & Srinivasan, S., Postbuckling response of piece-wise uniform tailored composite plates in compression", Journal of Reinforced Plastics and Composites. 13, 9, p. 803-821, Sep. 1994

Biggers, S. B. & Pageau, S. S., Shear buckling response of tailored composite plates, AIAA journal. 32, 5, p. 1100-1103, May 1994

Biggers, S. B. & Browder, T. M., Buckling-load interaction in tailored composite plates, Composites Engineering. 4, 7, p. 745-761, Dec. 1994

Joshi, M. G. & Biggers, S. B., Thickness optimization for maximum buckling loads in composite laminated plates", Composites Part B: Engineering. 27, 2 PART B, p. 105-114, Dec 1996

Baranski, A. T. & Biggers, S. B., Postbuckling analysis of tailored composite plates with progressive damage, Composite Structures. 46, 3, p. 245-255, Nov. 1999

Andrzej T. Baranski ; Sherrill B. Biggers, Postbuckling analysis of delaminated composite plates using zig-zag theory with contact conditions, AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, p. 2014-2020, Jan 2000

Andrzej T. Baranski ; Sherrill B. Biggers, Postbuckling analysis of laminated composite plates using a higher-order zig-zag theory, Mechanics of Composite Materials and Structures. 7, 3, p. 285-314, Dec. 2000

Biggers Jr SB, Xie D. Damage progression analysis in tailored laminated plates and shells with a cutout. In: Proceedings of the American Society for Composites, 16th Annual Technical Conference. ASC Paper 136, Blacksburg, VA, September 2001

Xie, D. & Biggers, S. B., Postbuckling analysis with progressive damage modeling in tailored laminated plates and shells with a cutout, Composite Structures. 59, 2, p. 199-216, Feb. 2003

Xie, De, and Sherrill Biggers, Jr.,"Delamination Growth and Residual Strength of Compressively Loaded Sandwich Panels with Tailored Face Sheets," Journal of Sandwich Structures and Materials, 11: 133-150 (2009).