BIOGRAPHICAL SKETCH

Panos G. Charalambides, Professor, Department of Mechanical Engineering
University of Maryland, Baltimore County (UMBC)
1000 Hilltop Circle, Baltimore, MD 21250
Phone: (410) 455-3346 Fax (410) 455-1052 Email: panos@umbc.edu

Research Interests:
Mechanics of materials and micromechanics modeling, nonlinear material behavior, finite elements and computational mechanics in material research, theoretical and numerical considerations of the failure process in brittle and ductile materials, and fracture mechanics. Fiber composites, thin film decohesion and mechanics of interfaces. Laminated composites and delamination cracking. Biomechanics, Manufacturing processes and Fixturing. Engineering Education.

Professional Preparation
University of Thessaloniki, Greece, Civil Engineering, School of Technology, B. Sc., 1981.
University of Illinois at Urbana-Champaign, IL, Theoretical and Applied Mechanics, M.Sc., 1983.
University of Illinois at Urbana-Champaign, IL, Theoretical and Applied Mechanics, Ph.D. 1986.
The University of California, Santa Barbara, CA, Postdoctoral experience, Materials, 1986-1989.

Main Appointments

2008-*present*	Professor, ME Department, UMBC.
Fall 2009	Visiting Professor, Mechanical and Manufacturing Engineering. The U. of Cyprus.
2002-2008	Professor and Chair, ME Department, UMBC.
1999-2002	Professor, ME Department, UMBC.
1994-1999	Associate Professor, ME Department, UMBC.
1992-1993	Associate Professor, ME-EM Department, MTU.
1989-1992	Assistant Professor, ME-EM Department, MTU.
1986-1989	Visiting Lecturer/Visiting Research Engineer, Materials Department, UCSB.

List of Selected Publications
1. P. G. Charalambides and R. M. McMeeking, "Finite Element Method Simulation of Crack Propagation and R-Curve Phenomena for a Microcracking Solid." *Mech. of Mat. Journal,* 6(1987), 71-87.
2. M. Ruehle, A. G. Evans, R. M. McMeeking, P. G. Charalambides and J. W. Hutchinson, "Microcrack Toughening in Alumina/Zirconia " *Acta Metall.* Vol 35 No. 11 (1987), 2701-2710.
3. P. G. Charalambides, J. Lund, A. G. Evans and R. M. McMeeking, "A Test Specimen for Determining the Fracture Resistance of Bimaterial Interfaces." J. Appl. Mech., **56**, 77-82 (1989).
4. P. G. Charalambides and A. G. Evans, "Debonding Properties of Residually Stressed Brittle Matrix Composites" *J. Am. Ceram. Soc*., **72[**5], 746-753 (1989).
5. P. P. L. Matos, R. M. McMeeking P. G. Charalambides and M. D. Drory, "A Method for Calculating Stress Intensities in Bimaterial Fracture." *Int. Journal of Fracture*, **40**, 235-254 (1989).
6. P. G. Charalambides, H. C. Cao, J. Lund and A. G. Evans, "Development of a Test Method for Measuring the Mixed Mode Fracture Resistance of Bimaterial Interfaces" *Mech. of Mat.* **8**, 269-283 (1990).
7. P.G. Charalambides, "Steady-State Delamination Cracking in Laminated Ceramic Matrix Composites." *J. Am. Ceram. Soc*., **74** [12], 3066-80 (1991).
8. J. L. Kuhn, S.I. Haan and P.G. Charalambides, "A Semi-analytical Method for the Calculation of the Elastic Micro-fields in Plain Weave Fabric Composites Under Remote In-plane Loading." *J. Comp. Materials*, Vol. 33, No. 3, pp 221-266 (1999).
9. M. Jha and P.G. Charalambides, "A Finite Element Analysis on Fracture Initiation in Ductile Brittle Periodically Layered Composites." *Int. J. Fracture.,* **90** [4], pp. 299-323, 1999.
10. M.P. Rao, M. Pantiuk and P.G. Charalambides, "Modeling the Effects of Stress Concentrations on the Initiation of Matrix Cracking in Woven CMCs." *Journal of Composite Materials. Journal of Composite Materials.* Vol. 45, No. 10, pp 1121-1143 (2011).
11. J. Liu, W.D. Zhu, P.G. Charalambides, Y.M. Shao, Y.F. Xu, and K. Wu, "A New Four-beam Model for Vibration Analysis of a Cantilever Beam with an Embedded Horizontal Crack," *International Journal of Mechanical Sciences*, submitted.
12. J. Liu, W.D. Zhu, P.G. Charalambides, Y.M. Shao, Y.F. Xu, and X.M. Fang, "A Dynamic Model of a Cantilever Beam with an Embedded Horizontal Crack Including Local Flexibilities at Crack Tips," *Journal of Vibration and Control*, in revision.

Departmental and Faculty Accomplishments while Department Chair (2002-2008)
--Increased undergraduate enrollments from approximately 200 majors in 2002 to 515 during fall 2008 while also increasing graduate enrollments from approximately 50 in over 80 over same period. --Increased research funding

expenditures from approximately $500,000 in 2002 to over $4,000,000 during AY 2006, 07 & 08. Expenditures include STEM grant activities. --Secured over 10 graduate fellowships (GAANN, TEPP, LSAMP, Meyerhoff, NSF) -- Diversified faculty by recruiting 3 women on tenure track faculty positions. New women faculty included an African American, an Asian and a Caucasian. Recognized by the UMBC ADVANCE program through the 2004 ADVANCE ACHIEVEMENT AWARD. --Expanded the undergraduate course offerings from 42 to close to 60. --Renovated curriculum by introducing design realization through 3D RP printing. --Introduced Industry sponsored capstone design projects in the ENME444, ENME471, ENME489L and ENME489S courses. Team projects have been supported by Northrop Grumman, Lockheed Martin, BP Solar and Pratt and Whitney corporations. --Supported extracurricular students projects such as the SAE Mini Baja and ASME sponsored Solar splash. --Organized bi-annual research poster competition events in mechanical Engineering. --Helped transformed the departmental culture to a more research oriented while maintaining commitment to undergraduates. --Received full ABET 2000 accreditation during the on-campus 2005 visit. --Was invited to give a talk on "How to Transform a Department." at the 2007 ASME Department Heads Educational Conference held in Dorado, Puerto Rico. --Spearheaded the delivery of the last two years of our Mechanical Engineering undergraduate program at the Shady Grove campus. –Helped bring the Project Lead The Way initiative to Mechanical Engineering at UMBC. Through this initiative, over 150 high school teachers received summer training at UMBC preparing them to deliver a series of four to five pre-engineering courses in high schools. –While a chair, the department faculty secured three NSF CAREER awards, one NIH R01 award, a major NSF STEM grant, multiple single PI and other collaborative awards, two NSF MRI grants as well as the acquisition of a major SEM microscope from NASA.

Published over 40 peer reviewed articles a few of which are highly cited with over 2000 citations. Reviewer for *Journal of American Ceramic Society, Journal of Composite Materials, Journal of Applied Mechanics, Acta Metallurgica et Meterialia, International Journal of Solids and Structures, International Journal of Fracture*, *Journal of Engineering for Industry, Mechanics of Materials Journal, National Science Foundation*. Collaborated with faculty at Johns Hopkins University, University of Washington, Case Western Reserved University, The University of California, Santa Barbara, Harvard University as well as with researchers and scientist from government laboratories and Industry.

Developed a new course on Finite Elements Based Design for both undergraduate and graduate students. Wrote a textbook and lab manual for above courses. Introduced the homegrown FE software DENDRO to students in above courses while also introducing students to commercially available packages such as ABAQUS and I-DEAS. Taught undergraduate Statics, Mechanics of Materials, Finite Elements, Fracture Mechanics and Macro-mechanics of Composites and graduate Theory of Elasticity, Continuum Mechanics, Fracture Mechanics, Finite Elements and Macro-mechanics of Composites.

Evidence of Teaching Excellence

While at Michigan Technological University, received two teaching awards, was honored by the Michigan Association of Governing Boards of State Universities, received the PYI award and was nominated by MTU President Dr. Curtis J. Tompkins for the NSF sponsored Presidential Faculty Fellows (PFF) Award. While at UMBC, have been consistently rated by his students well above average in overall teaching effectiveness with highly favorable student reviews and evaluations.

Recognitions and Awards

1976-1980: University of Thessaloniki, School of Technology. Internal scholarship. 1976: Technical Chamber of Civil Engineers Award. 1990: MTU Distinguished Teacher of the Year Award. 1991: State of Michigan Teaching Excellence Award. 1991: Honored by the M.A.G.B. of State Universities. 1991: Presidential Young Investigator Award (PYI), Awarded by NSF. 1991: Nominated for the NSF sponsored Presidential Faculty Fellows Award. 2004: Received the UMBC ADVANCE Achievement award. 2008: Received the UMBC NSBE Faculty of the Year award. 2009: Nominated by UMBC for the Jefferson Science Fellowship award.

Other Affiliations

(i) Ph.D. Advisor: Robert M. McMeeking, Professor, Department of Mechanical and Environmental Engineering, University of California, Santa Barbara.

(ii) Post Doctoral Advisor: Anthony G. Evans, Professor, Materials Department, Univ. of California, Santa Barbara.

(iii) Graduate Students Advised: Ph.Ds: Wenbin Zhang, Mahendra Jha, Jonathan L. Kuhn, Khaled Wardak, Seung-Ill Haan, Madhwapati Prabhakar Rao, Yong Zhao, Liwei Lu, Michael Pantiuk, Fenqui Luo, Xiaomin Fang, Yangling Zhou, Valery Aladzyeu, Jun Ding, Kourosh M. Kalayeh. M.S. Thesis option: Mark Fancher, Santosh Patil, Sridhar Srikartan, Mukhtader M. Ansari, Anand Rao, Nikos Nikolaou, Young Hwang, Garrett McCormick, Aleksey Kashtelyan, Oscar Serna, . M.S. Report Option: Wenbin Zhang, Tina M. Mueller. Course Option: Jonathan Kuhn, Liwei Lu, Fengqi Luo.

(iv) Postdoctoral Scholars Sponsored: Wenbin Zhang, Seung-Ill Haan, M.P. Rao.