

James Earthman - Curriculum Vitae

James C. Earthman

Office Address: 644F Engineering Tower; Telephone: (949) 824 5018

Current Position: Associate Professor

Date of Birth: 27 November, 1957

Place of Birth: Tulsa, Oklahoma

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Education

- Stanford University; Ph.D., Materials Science and Engineering, November 1985.
Thesis Title: "High Temperature Intergranular Crack Growth Processes in Copper and Copper with 1 Weight Percent Antimony;" Advisor: W. D. Nix
- Stanford University; M.S., Materials Science and Engineering, June 1982.
- Rice University; B.S., Materials Science, June 1980.

Professional Interests

- High temperature fracture.
- Cavitation processes in superplastic materials.
- Novel damage monitoring techniques.
- Automated materials testing and analysis.
- Numerical modeling of deformation and damage processes.
- Mechanical behavior and damage mechanisms in biomedical materials.
- Biological control of corrosion.

Academic Appointments

Professor Step I

July 2000 - present

Department of Chemical and Biochemical

Engineering and Materials Science University of California, Irvine

Associate Professor Step III

July 1998 - June
2000

Department of Chemical Engineering and Materials Science
University of California, Irvine

Associate Professor Step II

July 1996 - June
1998

Materials Section
Department of Chemical Engineering
University of California, Irvine

Associate Professor Step I

July 1994 - June
1996

Materials Section
Department of Chemical Engineering
University of California, Irvine

Assistant Professor Step IV

July 1992 - July
1994

Materials Section
Department of Mechanical and Aerospace Engineering
University of California, Irvine

Assistant Professor Step III

July 1990 - June
1992

Materials Section
Department of Mechanical and Aerospace Engineering
University of California, Irvine

Assistant Professor Step II

July 1988 - June
1990

Materials Section
Department of Mechanical and Aerospace Engineering
University of California, Irvine

Research Associate

Dec. 1985 - June
1988

Mechanical Metallurgy Laboratory
Swiss Federal Institute of Technology, Lausanne

Research Assistant

Sept. 1981 - Nov.
1985

Materials Science and Engineering Department.
Stanford University

Honors and Awards

1980 Rice Alumni Scholar in Materials Science, Rice University Augmentation Award for Science and Engineering Research Training, US Air Force Office of Scientific Research (1992)

Excellence in Teaching Award, Division of Undergraduate Education, Academic Senate Committee on Teaching, and Instructional Resources Center, University of California, Irvine, 1999

Engineering Faculty of the Year, UCI Engineering Student Council, 1999-2000

Listed in: Who's Who in American Education, Who's Who in Science and Engineering, Who's Who in the West, Dictionary of International Biography

Professional Association Memberships

ASM International (ASM); The Materials Research Society (MRS); The Minerals, Metals & Materials Society of the American Institute of Mining, Metallurgical and Petroleum Engineers (TMS-AIME); The American Society for Testing and Materials (ASTM); American Society for Non-Destructive Testing (ASNT); Materials Engineering and Sciences Division of the American Institute of Chemical Engineers (AICE); National Association of Corrosion Engineers (NACE).

Professional Service And Activities

Member of the Metallurgical and Materials Transactions Joint Commission. This six-member Commission deals with editorial direction and oversight. Findings are forwarded to the ASM and TMS boards of directors for action/approval. The term is for three years (January 2000 - December 2003).

Liaison to the TMS Programming Board, ASM International Materials Science Critical Technology Sector Executive Committee, (October 1998 - present).

Co-Organizer for the *Symposium on Miniature Structures and Components under Cyclic Loading* held at the TMS Annual Meeting, San Diego, on March 2-3, 1999.

Programming Grid Vice-Chair for the Fall ASM/TMS Meeting, Cincinnati, October 31-November 4, 1999.

Chair of the Editorial Review Board of *Metallurgical and Materials Transactions* (October 1998 - March 2000).

Chief Organizer of the *Seventh International Conference on Creep and Fracture of Engineering Materials and Structures* held at the University of California, Irvine on August 11-14, 1997.

Chair of the ASM/MSCTS Flow and Fracture Committee of TMS (October 1996 - September 1998).

Vice-Chair of the ASM/MSD Flow and Fracture Committee of TMS (October 1995 - September 1996).

Member of the ASM/MSD Flow and Fracture Committee of TMS (October, 1991 - present).

Member of the Editorial Review Board of *Metallurgical and Materials Transactions A* (October 1994 - present).

Vice-Chair of the Editorial Review Board of *Metallurgical and Materials Transactions A* (November 1997 - October 1998).

Chair of the Editorial Review Board of *Metallurgical and Materials Transactions A* (November 1998 - October 1999).

Member of the Joint Commission of *Metallurgical and Materials Transactions* (January 2000 - present).

Member of the Board of Directors of the Newport Coast Oral-Facial Institute (October 1995-present).

Chair of a session entitled "Deformation and Fracture: Composite Materials," at the 1995 *TMS Fall Meeting*, Cleveland, Oct. 30.

Chair of the Organizing Committee for a symposium entitled "High Temperature Fracture Mechanisms in Advanced Materials" to be held on October 2-6, 1994 at the TMS Fall Meeting in Rosemont, Illinois.

Member of the organizing committee for a workshop entitled "Advances in Non-Destructive Testing" at the University of California, Irvine on August 24-26, 1993.

Chair of a session entitled "Progress in Advanced Mechanical Testing" on February 5, 1993 in the *Golden Gate Materials Technology Conference* sponsored by ASM International, American Welding Society, American Society for Nondestructive Testing and the National Association for Corrosion Engineers.

Chair of a session entitled "Novel Approaches for Automated Materials Testing" on November 11, 1991 in the *International Symposium for Testing and Failure Analysis* sponsored by ASM International.

Chair of the Organizing Committee for a symposium entitled "High Temperature Fracture Mechanisms in Advanced Materials" to be held on October 2-6, 1994 at the TMS Fall Meeting in Rosemont, Illinois.

Reviewer for the following journals: *Materials Science and Engineering, Metallurgical and Materials Transactions, Scripta Metallurgica et Materialia, Journal of Heat Transfer, Acta Stereologica, Journal of Biomedical Optics* and *International Journal of Fracture*.

Peer Reviewer for the following federal agencies: National Science Foundation, Department of Energy, Air Force Office of Scientific Research.

Post Doctors

D. -H. Kim (10/90-9/91)
Kh. M. Ismail (10/96-11/98)
Fabrice Tardif (1/99 - 1/00)
Severino Urtiga-Filho (10/99 - present)

Students

Ph.D. Advisees:

H. K. Kim (graduated 8/92), N. L. Johnson (graduated 6/97), K. J. C. Chou (graduated 3/98), A. Chakraborty (graduated 6/97), Mariah Coleno (9/95 - present), Soheil Eshraghi (9/00 - present).

M.S. Advisees:

J. Fukishima (graduated 6/91), R. Ramsaur (graduated 6/91), J. Buerkle (co-advisee, graduated 6/91), I. Ahmed (graduated 12/92), P. Schmidt (graduated 6/93), N. L. Johnson (graduated 6/94), William Churley (graduated 6/96), Ted Gehrig (graduated 6/96), Julie Perkins (graduated 6/96), Micheal Hagen (graduated 6/96), David Stanley (graduated 6/96), Terence Savas (graduated 6/98), Kirsten Trandem (graduated 6/00), Ian Nieves 4/98 - present, Jessica Li (1/01 - present).

Undergraduate Advisees:

ME199 Individual Study:

K. Bowo (graduated 6/91), D. Hang (graduated 6/91), L. Diep (graduated 6/92), O. Wang (graduated 6/92), V. Vucovic (graduated 6/92), S. Patel (graduated 6/92), J. Lee (graduated 12/92), M. Becker (graduated 6/93), D. Brenner (graduated 6/94), S. Horton-King (graduated 6/94), T. Kim (graduated 6/94), D. Sung (graduated 6/94), S. Yu (graduated 6/94), David Stanley (graduated 6/94);

CBE199 Individual Study:

Shawn Noh (graduated 6/95), Yael Bar-Zion (biology major graduated 6/95), Julie Perkins (graduated 6/95), Shawn Noh (graduated 6/95), Eric Noji (graduated 6/96), Linh

Le (graduated 6/98), Nelson Li, Ari Kay, Maryam Hosseini (graduated 6/99), Catherine Mescher, Mohsen Gomaroni, Behrooz Entezam, Hai Le, John Abdenour, Ahn Nguyen, Joel Angeles, Chungche Wu.

ME151P Senior Design Project

G. Davis, K. Gentile, C. Hunt, J. Kamentser, 1989-1990; G. Arboleda, Q. Duong, C. Elizondo, H. Sandegren, 1990-1991; B. Feher, M. Guiliana, E. Lee, Q. Nguyen, T. Niesar, G. Wintersheid, 1991-1992; D. Brenner, S. Horton-King, Daniel Mayers, 1993-1994.

Summer Undergraduate Research Fellows:

Leticia Bustamante (1994), Catherine Mescher (1999).

Courses

1. "Non-Destructive Evaluation of Materials Lab," (in French) Swiss Federal Institute of Technology, Lausanne, 1986 - 1988.
2. ME 151B: "Mechanical Engineering Design II -- Failure Prevention in Engineering Design," University of California, Irvine, required undergraduate course held every Winter Quarter 1992-1995.
3. MSE 153: "Design Failure Investigation," University of California, Irvine, undergraduate elective held every year in the Spring Quarter.
4. ME 156: "Mechanical Properties of Materials," University of California, Irvine, Spring Quarter 1989 (taught in the absence of Prof. F. A. Mohamed on sabbatical leave).
5. MSE 256A: "Fracture of Engineering Materials," University of California, Irvine, held every two years (new graduate course which was first held in the Winter Quarter 1989).
6. MSE 256B: "Fatigue of Engineering Materials," University of California, Irvine, held every two years (new graduate course that began in the Winter Quarter 1990).
7. MSE/CBE 258: "Computer Techniques in Experimental Research," University of California, Irvine, held every two years (new graduate course that began in the Fall Quarter 1989).
8. "Data Acquisition and Instrumentation," University of California, Irvine, new course held for the first time in the Winter Quarter 1995. Taught to displaced engineers in the Biomedical Engineering Track of the Accelerated Engineering Technology Reinvestment Program at UCI.
9. E 54: "Principles of Materials Science and Engineering," University of California, Irvine, required undergraduate course held in Spring Quarter 1998, Fall 1998, and Spring 1999.
10. E 5: "Exploring the Engineering Mind -- Bicycles to Biomaterials," University of California, Irvine, undergraduate breadth course for non-engineering majors, held in Spring Quarter 1998 and 1999.

Extramural Instructional Support

1. Automated Testing Electronics for ME258

- September 30, 1991, National Instruments, \$2,045 in equipment.
2. MVision Materials Database Software for ME151B, November, 1991, PDA Engineering, \$15,000 in software for the DEC 5000 workstation.
 3. MVision Materials Database Software Upgrade for ME151B, November, 1992, PDA Engineering, \$10,000 in software for the DEC 5000 workstation.

University Service

Facilities Committee Member Department of Mechanical and Aerospace Engineering	11/89 - 8/91
Facilities Committee Chair Department of Mechanical and Aerospace Engineering	9/91 - 6/93
Senior Design Project Committee Member Department of Mechanical and Aerospace Engineering	8/91 - 6/93
TEM Research Committee Member Department of Chemical Engineering and Materials Science	7/91 - present
Computer Committee Member Department of Mechanical and Aerospace Engineering	7/91 - 6/93
Seminar Coordinator Department of Mechanical and Aerospace Engineering	7/89 - 6/93
One of 9 faculty associates on Irvine Research Unit Proposal entitled: Center for Risk and Reliability Studies	3/89 - 6/93
Member of the Representative Assembly of the Academic Senate	9/89 - 8/90
Participant in the Cross-Cultural Mentorship Program Mentees: Jerome Davis (91-92), Alicia Ibarra (92-93), and Felicia Bixler (94-95)	9/91 - 6/95
Invited presentation at the LINC/UCI Technology Showcase in the Special Session: A Sampling of Leading Edge Medical Device Technology From UC Irvine.	9/14/95
Biomedical Engineering Academic Planning Committee Member	5/93 - 2/98
Member of the Organizing Committee for the Advanced Nondestructive Testing Workshop held at UCI	6/93 - 9/93
Co-Director of the Biomedical Engineering Program at UCI (with Prof. Steve George)	3/96 - 2/98

Associate Chair for the Department of Chemical and Biochemical Engineering and Materials Science	3/98 - present
Academic Plan Advisory Committee for the School of Engineering	3/99 - present
Committee for Biomedical Engineering for the School of Engineering	4/99 - present
Biomedical Engineering Steering Committee	4/99 - present
Biomedical Engineering Graduate Admissions Committee	4/99 - present
Invited presentation at the UCI NSF Program on Science, Mathematics, Engineering, & Technology in the Special Session: E5 Exploring the Engineering Mind -- A New Course for Non-Engineering Majors for increased Science and Engineering Literacy and a Greater Appreciation of Engineering Challenges.	4/6/99
Biomedical Engineering Internship Committee	10/99 - present
Member of the Irvine Division Planning and Budget Council	
Academic Senate	10/99 - 12/00
Vice Chair of the Irvine Division Planning and Budget Council	
Academic Senate	1/01 - present
University-Wide Planning and Budget Committee	10/99 - present
Academic Senate	

Patents

A System and Method for Quantitative Measurements of Energy Damping Capacity, Patent No. 6,120,466

Inhibition of Sulfate-Reducing-Bacteria-Mediated Degradation using Bacteria which Secrete Antimicrobials, Application No. 09/282,277

Community Service

Assistant Coach (AYSO Soccer Division 7)	Fall '95, '96
Assistant Coach (Irvine Little League)	Spring '96, '97
Head Coach (AYSO Soccer Division 6)	Fall '97
Cubmaster (Cub Scout Pack 607)	12/97 - present