## Biographical Sketch: Barton C. Prorok


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### A. Professional Preparation:

| | | | |
|---|---|---|---|
| Northwestern University | Post-Doctoral Research | Post-Doc | 2000-02 |
| University of Illinois at Chicago | Materials Science and Engineering | Ph.D. | 2000 |
| University of Pittsburgh | Materials Science and Engineering | M.S. | 1996 |
| University of Illinois at Chicago | Metallurgy | M.S. | 1993 |
| Pennsylvania State University | Ceramic Science and Engineering | B.S. | 1991 |

### B. Appointments:

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|---|---|
| 8/12 – pres. | Professor of Materials Science & Engineering, Auburn University |
| 8/07 – 8/12 | Associate Professor of Materials Science & Engineering, Auburn University |
| 8/02 - 8/07 | Assistant Professor of Materials Science & Engineering, Auburn University |
| 8/00 - 8/02 | Post-doc, Mech. Engr. Dept., Northwestern University, Evanston, IL |
| 5/91 - 8/00 | Research Assistant in Energy Technology Div., Argonne National Laboratory |

### C. Noteworthy Publications:


1. M. Sullivan, Y. Chen, and B.C. Prorok, “New Strengthening Mechansims of Nacre in the Abalone Shell,” International Journal of Experimental and Computational Biomechanics 3(3), pp. 236-249 (2015).
2. M. Sullivan and B.C. Prorok “Evaluating indent pile-up with metallic films on ceramic-like substrates,” Journal of Materials Research 30(13), pp.2046-2054 (2015).
3. M. Sullivan, D. Slater, and B.C. Prorok, “A Biosensor Based on Magnetic Resonance Relaxation,” ECS Transactions 58(23), pp.19-24 (2013).
4. M. Sullivan, M. Ramasamy, and B.C. Prorok, “Magneto-Mechanical MEMS Sensors for Bio-Detection,” ECS Transactions 58(23), pp. 25-34 (2013).
5. C. Liang, J. Hu, B.C. Prorok, C. Gooneratne, and J. Kosel, “Annealing Effect on the Performance of Sputtering Deposited Metglas Thin Films,” Materials Science Forum 667-669, 1207-1212 (2011).
6. B. Zhou and **B.C. Prorok**, “A New Paradigm in Thin Film Indentation,” *Journal of Materials Research* **25(9)**, 1671-1678 (2010).
7. **B.C. Prorok**, Y. Zhu, H.D. Espinosa, Z. Bazant, et al., Micro and Nanomechanics, *Encycl. Nanosci. Nanotech.* **8**, pp. 555-600, American Scientific Publishers (2004)
8. H. D. Espinosa, B. Peng, **B. C. Prorok**, N. Moldovan, O. Auciello, J. A. Carlisle, D. M. Gruen and D. C. Mancini, “Fracture strength of ultrananocrystalline diamond thin films—identification of Weibull parameters,” *J. Appl. Phys.* **94(9)**, pp. 6076-6084 (2003).
9. S. Morshed, K. Baldwin, B. Zhou, and **B.C. Prorok**, “Modifying Geometry to Enhance the Performance of Microcantilever-Based Acoustic Sensors,” *Sens. Letters* **7(1)**, 38-41 (2009)
10. **B.C. Prorok,** et al., “Effects of Nanometer Thick Passivation Layers on the Mechanical Response of Thin Gold Films,” *J. Nanosci. Nanotech.* **2**, 1-7 (2002).

## D. Synergistic Activities

Associate Editor – Applied Mechanics Reviews
Associate Editor – Experimental Techniques
Chair – MEMS/Nanotechnology Tech. Div. in the Society for Experimental Mechanics
Review Board Member - Metallurgical and Materials Transactions (2002-pres)
Review Board Member - Sensor Letters (2005-pres)
Director – Analytical Microscopy Cost Center at Auburn University (2006 – present)

## E. Collaborators & Other Affiliations:

### (i) Professional Collaborations:

Professor William Nazaroff from the University of California, Berkeley
Professor Marc Myers from the University of California, San Diego
Professor Byron Jones from Kansas State University
Dr. Richard Cernosek from Sandia National Laboratory
Dr. William Fisk from Lawrence Berkeley National Laboratory
Dr. Ali Erdimer from Energy Technology Division, Argonne National Lab
Dr. Orlando Auciello from Materials Science Division, Argonne National Lab
Dr. Derek Mancini from Experimental Facilities Division, Argonne National Lab
Dr. Richard Fox from Honeywell Aerospace
Dr. John Ginn from Goodrich Sensor Systems
Dr. Shawn Park from Boeing Commercial Airplanes
Dr. Jenny Yu from Boeing Commercial Airplanes

### (ii) Graduate and Professional Advisors:

Post-doc - Professor Horacio Espinosa, Mechanical Engineering, Northwestern University
Ph.D. - Professor Michael McNallan, Materials Engineering, University of Illinois at Chicago
M.S. - Professor Nicholas Eror, Materials Science and Engineering, University of Pittsburgh
M.S. - Professor Steven Danyluk, Materials Engineering, University of Illinois at Chicago
B.S. - Professor Altaf Carim, Ceramic Science and Engineering, Pennsylvania State University
Research Advisor - Dr. Roger Poeppel, Energy Technology Division, Argonne National Lab
Research Advisor - Dr. Rölf Steinbrech, Materials Division, Forschungzentrum Jülich

### (iii) Thesis Advisor and Postgraduate-Scholar Sponsor:

Dr. Marianne Sullivan, PhD, Exponent Engineering & Scientific Consulting, Philadelphia, PA
Dr. Naved Siddiqui, PhD, Global Foundries (IBM) - Fishkill
Dr. Liwei Wang, PhD, Employed at Intel - Arizona
Dr. Shakib Morshed, PhD, Employed at Nanostructures, Inc. - Silicon Valley
Nikhil Mehta, MS, Employed at Intel - Portland, Oregon
Dr. Cai Liang, PhD, Employed at Kind Abdullah Univ. of Science and Technology - Saudi Arabia
Dr. Nicole Harris, PhD, Employed at ThyssenKrupp Steel - Mobile, Alabama
Dr. Bo Zhou, PhD, Vice President, CSM Nanoinstruments - Boston, Massachusetts
Feng Qain, MS, Employed at Intel - Arizona
Steven Melosky, MS, Employed at NASA Marshall - Huntsville, Alabama
Kevin Schwieker, MS, Employed at Intel - Melbourne, Australia
Madhumidha Ramasamy, MS, Employed at Corning - New York
Dong Liu, MS, PhD student at the University of Texas
Brandon Durham, MS, Employed at Caterpillar - Peoria, Illinois
Daniel Slater, MS, Employed at NASA, Kennedy Space Flight Center - Cape Canaveral, Florida