

## KATHLEEN A. STAIR

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### Professional Preparation

Northwestern University, Evanston, IL B.S. 1981  
Northwestern University, Evanston, IL (Materials Science and Engineering) Ph.D. 1986

### Appointments/Professional Appointments

2016-present Professor of Instruction, Materials Science and Engineering, Northwestern University  
2013-present Education and Outreach Director, Materials Research Center, Northwestern University  
2008-present Assistant Chair, Materials Science and Engineering, Northwestern University  
2008-present Director, Materials Research Center (MRSEC) REU program, Northwestern University  
2007-2013 Industry Liaison, Materials Research Center (MRSEC), Northwestern University  
2006 Co-Director, Materials Research Center (MRSEC) REU program, Northwestern University  
1996-2016 Senior Lecturer, Materials Science and Engineering, Northwestern University  
1996-2008 Manager, Optical Microscopy and Metallography Facility, Materials Research Center, Northwestern University  
1994-1996 Associate Research Professor, Materials Research Center, Northwestern University  
1987-1994 Staff Research Engineer, Amoco Technology Company, Naperville, IL  
1986-1987 Postdoctoral Research Associate, Center for Engineering Tribology, Northwestern University

### Expertise

Undergraduate materials education; laboratory instruction; undergraduate advising; materials education and outreach; materials characterization; molecular beam epitaxy

### Selected Presentations and Publications

1. "Using Experimentation, Simulation and Visualization to Engage Students: Turning a Case-study into a Lab," presented at the Materials Research Society Fall 2015 Symposium A5.06, December 1, 2015.
2. "REU and RET Programs and Undergraduate Materials Research at Northwestern University," presented at the Materials Research Society Fall 2014 Symposium AAA3.05, December 1, 2014.
3. "Discovering Ultra-capacitors in a Sophomore-level Lab," presented at the 5th North American Materials Education Symposium, University of Illinois, Urbana-Champaign, March 20-21, 2014.
4. Stair, K. and Crist, B., "Using Hands-on Laboratory Experiences to Underscore Concepts and to Create Excitement about Materials," *Proceedings of the 2006 American Society of Engineering Education Conference and Exposition*, 2006-2264 (2006).

5. Stair, K., Liu, J.Z. and Asta, M., "Ultra-sonic Measurement and Computation of Elastic Constants," *Proceedings of the 2006 American Society of Engineering Education Conference and Exposition*, 2006-2275 (2006).

*Other significant publications:*

6. Zhao, Y., Devane, G., Sun, Z., Stair, K. A., Liu, Y., Du, G., and Chang, R. P. H., "The embryonic form of the integrated superluminescent diode," *Semiconductor Science and Technology*, **12**(5), 576-579 (1997).
7. Du, G., Stair, K. A., Devane, G., Zhang, J., Chang, R. P. H., White, C. W., Li, X, Wang, Z, Liu, Y., "Vertical-cavity surface-emitting laser with a thin metal mirror fabricated by double implantation using a tungsten wire mask," *Semiconductor Science and Technology*, **11**(11), 1734-1736 (1996).
8. Stair, K., Zajac, G., Chambers, F., Engelhardt, M.A. and Höchst, H., "Growth of Ca<sub>0.43</sub>Sr<sub>0.57</sub>F<sub>2</sub> molecular beam epitaxy films on GaAs(100) at 560 °C studied by photoemission spectroscopy," *Journal of Vacuum Science & Technology B*, **8**, 805-809 (1990).
9. Stair, K. A., and Chung, Y. W., (1986), "Fermi-level pinning and growth characteristics of Au on InP(111)," *Applied Surface Science*, **26**(4), 381-391 (1986).
10. Stair, K. A., and Chung, Y. W. (1985), "Composition and electronic properties of P-enriched InP (111)-Au interfaces," *Physical Review B*, **32**(6), 3904-3909 (1985).

### **Synergistic Activities**

- (1) Undergraduate program coordinator, Materials Science and Engineering, 2008-present
- (2) McCormick Engineering Undergraduate Curriculum Committee, 2008-present
- (3) Senior project course instructor, Materials Science and Engineering, 2003-present
- (4) Laboratory instructor Materials Science and Engineering, 1996-present
- (5) Material Advantage Chapter Advisor, 2011-present

### **Selected Honors and Awards**

Charles Deering McCormick Distinguished University Lecturer, Northwestern University (2003);  
Northwestern University Associated Student Government Faculty Honor Roll (2007 & 2014);  
Materials Science and Engineering Teacher of the Year (2002 & 2005)