

Brent W. Barker

me@brentwbarker.net

PROFILE

Seeking a position in laboratory management to help empower science and engineering students and deliver quality science instruction in the context of higher education. Possessing a strong foundation of physics instruction, research, and higher education experience, and is experienced in data analysis and computer programming.

CORE COMPETENCIES

- Teaching physics and experimental techniques with clarity and precision.
 - Student teaching assistant training, supervision, professional mentoring, and leadership development
 - Scientific project management including project planning and small group task coordination and accountability
 - Physics laboratory management; curriculum development; equipment inventory, troubleshooting, and purchasing.
 - Office suite, HTML, web hosting, Google Docs, Fortran, C++, Python, bash, Linux system administration, Labview, Vernier LoggerPro.
 - Quantitative analysis including data analysis and visualization, computer programming, modeling, and statistics.
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PROFESSIONAL EXPERIENCE

Roosevelt University - Chicago, Illinois

Assistant Professor of Physics

Aug 2014 - Present

- Taught physics and astronomy laboratory and lecture classes with a focus on developing interdependent, life-long learners using a research-based, guided inquiry approach, focusing on developing students' capacity to engage in the scientific process.
- Hired, trained, and supervised student teaching and research assistants one-on-one and in small groups to become engaging teachers and resilient, creative researchers using science education curriculum from the Learning Assistant Alliance.
- Managed all aspects of physics instructional laboratory and lecture demonstration apparatus, including facility management, equipment purchasing, inventory, and maintenance.
- Developed innovative lab manual for introductory physics, featuring guided inquiry labs and using the research-based Investigative Science Learning Environment.
- Managed multiple overlapping time-sensitive projects including curriculum development and delivery, research presentations and articles, and committee work in support of the department and university.
- Collaborated across departments to develop courses that met criteria from diverse stakeholders.

Visiting Assistant Professor of Physics**Aug 2013 - Aug 2014**

- Developed new curriculum and taught 9 introductory physics and astronomy classes across 2 campuses.
- Initiated and independently managed \$25,000 upgrade of physics instructional laboratory, including a suite of Vernier LabQuest computer interface equipment.

*Michigan State University - East Lansing, Michigan***Research Assistant and Teaching Assistant****Jul 2007 - Aug 2013**

- Conducted independent research on transport properties of many-particle quantum systems at the National Superconducting Cyclotron Laboratory.
- Assisted students with completing laboratory work and assessing their performance.
- Developed computer software for numerical modeling.
- Collaborated with researchers in 8 countries across 3 continents.
- Presented research at national and international conferences.

*Lansing Community College - Lansing, Michigan***Adjunct Faculty****Jan 2012 - May 2013**

- Prepared and delivered lecture, lab, and active learning activities for 20 conceptual physics students in a combined lecture/lab course, as well as 12 students in a second-semester non-calculus introductory physics course.

EDUCATION**Doctor of Philosophy in Physics****2007 - 2014***Michigan State University - East Lansing, Michigan*

- Served as vice president of graduate student organization “Women & Minorities in the Physical Sciences” to learn how to level the playing field for all STEM professionals.
- Elective coursework included Project Management for Scientists and Teaching College Science

Bachelor of Science in Physics (magna cum laude)**2003 - 2007***Indiana University of Pennsylvania - Indiana, Pennsylvania*

- Minored in Mathematics, Computer Science, including a course in computer interface programming with C++ and LabView.
- Graduated from Robert E. Cook Honors College

PROFESSIONAL MEMBERSHIP

- American Association of Physics Teachers (President, Chicago Section, 2017-Present; Vice President, Chicago Section, 2016-2017)
- Physics Instructional Resource Association
- American Physical Society
- Illinois Association of Physics Teachers
- American Association for the Advancement of Science