John Miller

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Seeking roles at the boundaries of science, computing, and education.

Research Interests

Microscopy · Spectroscopy · Materials science · Linux scientific software · Physics of bicycles and music · Science history · Low-cost home experiments · Public outreach · Science makerspaces · Integrated math/science curricula

Technical Skills

Deep knowledge of the Linux operating system, TCP/IP, and managing systems at scale. Electronics knowledge from classes and self-study. Teaching and tutoring in classroom and one-on-one settings.

- <u>Computer:</u> Linux (both Red Hat and Debian variants), Python, Bash, PHP, Perl, C, HTML/CSS, SQL (MySQL, PostgreSQL, SQLite), Javascript, Jenkins, Docker, Kubernetes, Ansible, Puppet.
- <u>Scientific:</u> Visual and photographic astronomy, UV/VIS/IR spectroscopy, NMR, GCMS, general chemistry lab techniques, light microscopy.
- <u>Technical:</u> Soldering (manual, SMT pick/place robots, reflow), computer interfacing, general shop skills.
- <u>Education:</u> High school substitute (including long-term), University lab/teaching assistant, private tutor.
- <u>Languages:</u> English (native), Spanish (advanced)

Career History

Penmac Education · *Kansas City, MO*

Kelly Education · *Shawnee Mission, KS*   *Substitute Teacher*   *November 2025—Present*

Substitute teacher for the North Kansas City and Shawnee Mission School Districts, specializing in math/science courses. Long-term Earth Science role at Shawnee Mission East; regular Algebra/Geometry role at Shawnee Mission Northwest.

- <u>Courses:</u> Physical Science, Space Science, Earth Science, Chemistry, Algebra, Geometry, Chemistry, Spanish, Jazz Band.
- <u>Schools:</u> Oak Park, Staley, Winnetonka, North Kansas City, Shawnee Mission East, Shawnee Mission Northwest, Shawnee Mission North, Shawnee Mission South High Schools, Antioch Topping Elementary.

816 Bicycle Collective · *Kansas City, MO*   *Bicycle Mechanic*   *March 2025—Present*

Volunteer for the 816 Bicycle Collective, a local non-profit bicycle shop. I teach people how to fix their bicycles and act as roaming shop mechanic, stepping in to provide repairs and advice as needed. It has been an immense eye-opener about what it means to be homeless and in how to run a non-profit organization.

Johnson County Community College · *Overland Park, KS*   *January 2024—May 2024*

After leaving Garmin, I did something I'd wanted to do for a decade: took Organic Chemistry at Johnson County Community College. An unexpected benefit of the class was spending tens of hours in the Science Resource Center. Being around students and seeing how COVID affected them has really inspired me to teach at the community college level. Community college students *want* to learn in ways that others do not.

Garmin International · *Olathe, KS*   *Senior Linux System Administrator*   *April 2021—January 2024*

Linux administrator for Garmin Aviation and Fitness divisions. Migrated $40M/year fly.garmin.com website to Kubernetes. Responsible for managing OpenStack-based Kubernetes clusters, Jenkins build environments, and Rocky 9/Rocky 8/CentOS 7 Docker hosts.

Berkshire Grey · *Bedford, MA*   *DevOps Engineer*   *January 2019—August 2020*

Lead DevOps engineer for startup robotics company. Led $10M+ project at Walmart distribution center in Beaver Dam, WI. Under a tight timeline, designed, purchased, built, and supported Ubuntu/CentOS robotics systems. Also acted as supporting DevOps engineer for Target distribution center in Perth Amboy, NJ. Supported developers in several internal test sites.

Brandeis University · *Waltham, MA*   *Senior Systems Engineer*   *October 2008—November 2018*

Managed Linux servers, enterprise networking, and storage hardware for Brandeis University in Waltham, MA. Supported 6000+ faculty, students, and staff, including many 2 am support calls and 5 am maintenance windows. Over time, projects became more and more advanced, and led several projects before leaving.

CompTIA · *Oak Brook, IL*   *Linux+ Subject Matter Expert*   *July 2008*

Designed objectives for the Linux+ certification exam.

Harvard Law School · *Cambridge, MA*   *Application Developer (contract)*   *January 2008—June 2008*

Contract web developer (PHP, Perl, Bash, HTML/CSS) for Harvard Law School. Made major updates to Pro bono clinics website. Updated main website as needed; managed LDAP-based identity management.

Community Software Lab · *Lowell, MA*   *System Administrator/Developer*   *August 2005—November 2007*

AmeriCorps VISTA volunteer for small non-profit in Lowell, MA, using my computer skills to help others. Extensive Linux administration and programming (PHP, Perl, Bash, HTML/CSS). Taught web design classes and mentored university and high school students in web design and programming.

KCnet · *North Kansas City, MO*   *Customer Support*   *December 2003—April 2005*

Phone tech support for KCnet, a local a ISP and web hosting company. Obtained A+, Network+, and Linux+ certifications.

Kansas State University · *Manhattan, KS*   *August 2000—May 2003*

After using my high school calculus and physics classes to help my dorm-mates, I found that as a physics major, I could stargaze until dawn, shatter oranges with liquid nitrogen, and let people smash bricks on me while lying on a bed of nails! I also:
- Researched wide bandgap semiconductors with professors.
- Research Experience for Undergraduates (REU): created educational videos with Adobe Premiere and Apple Quicktime VR.
- Taught and graded algebra-based physics laboratory class.
- Assisted in teaching two calculus-based physics laboratory classes.
- Led evening physics help sessions for undergraduates.
- Tutored students one on one as a private tutor recommended by the Physics department.
- President of the Society of Physics Students, gave hands-on physics demonstrations to schools and to the general public.
- Astronomy Club member.

Education

Kansas State University · *Manhattan, KS*   *Bachelor of Science: General Physics*

Physics Degree with many additional math courses: Partial Differential Equations, Real Analysis, Abstract Algebra, Statistics. President of Society of Physics Students chapter.

University of Massachusetts · *Lowell, MA*   · *Discrete Math, Number Theory*
Brandeis University · *Waltham, MA*   · *TCP/IP, Linguistics, Cloud Computing*
Johnson County Community College · *Overland Park, KS*   · *Organic Chemistry*
University of Missouri—Kansas City · *Kansas City, MO*   · *Mathematical Methods in Physics*