Christalee Bieber

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Experience

Workshop School — Philadelphia, PA

Technology Coordinator — 9/13–6/16

- Administered and repaired 200+ Chromebooks, 50+ iMacs, and 25 Windows desktops for students in a project-based interdisciplinary CTE (Engineering & Automotive) high school.
- Spearheaded CS/tech education by teaching programming & web design; designing curriculum and teacher PD; mentoring student projects; advising the Computer Club; and organizing career exploration.
- Trained and supervised students & staff using the fabrication shop. Example projects: building a recording studio; laminating & decorating skateboard decks; designing & constructing solar battery chargers.

The Hacktory — Philadelphia, PA

Organizer/Instructor — 4/12–6/16

- Designed and taught STEM workshops on: circuits (analog, squishy, and sewable); analog sensors; equity in STEM communities; duct tape costuming; soldering; multimeters; recycled electronic jewelry.
- Lead working groups on website maintenance/design, fundraising, drafting a new mission and policies, and project/task management during relocation to University City Science Center (2013).

MIT OpenCourseWare — Cambridge, MA

Department Liaison — 7/07–4/13

- Published 75+ courses under a Creative Commons license, producing multimedia, copyright-cleared material, sample student work, transcribed notes, custom site architecture, and other features as needed.
- Supervised HTML/document authoring contractors and coordinated with IP and Production teams to meet the diverse needs of OCW users, individual faculty, and MIT as an institution.
- Wrote tools to address unique content situations, e.g. LaTeX template for transcribed notes; JavaScript expandable nested list for forum discussions; Python scripts to convert HTML to UTF-8 & new page layouts.

MIT-SUTD Collaboration — Cambridge, MA

Production Liaison — 9/10–8/11

- Designed and documented procedures to produce teaching materials for 87 classes, to be delivered over 4 years to faculty at the Singapore University of Technology & Design (SUTD), opening April 2012.
- Trained faculty and project staff in intellectual property assessment, file editing and formatting, and delivery of rich course materials on an internal Learning Management System (LMS).

Education

Massachusetts Institute of Technology — Cambridge, MA

Bachelor of Science, Physics — June 2007

Thesis: Self-Assembly of Conformal Polymer Electrolyte Film for Lithium Ion Microbatteries

- Non-physics coursework included electronics & computer science (4 courses) and properties & fabrication of solid-state materials (Minor in Materials Science).

Research

Prof. Yet-Min Chiang, Chiang Group — **MIT**
Undergraduate Researcher (thesis project) — 10/06–6/07

- Focus: self-assembling rechargeable lithium ion microbatteries for use with MEMS devices.
- Tested and modeled candidate solvent-electrolyte systems for reliable thin-film deposition on a micro-machined electrode substrate.

Prof. Isaac Chuang, Quanta Group — **MIT**
Undergraduate Researcher — 1/06–8/06

- Focus: quantum computation operations using planar ion traps.
- Soldered ion trap components; helped design and install optics for ion observation.
- Designed and assembled a high-precision diode laser frequency stabilization system.

Dr. Robert O'Handley, Magnetic Materials Group — **MIT**
Undergraduate Researcher — 6/05–12/05

- Focus: piezoelectric actuation of ferromagnetic shape-memory alloys for large-strain transducers.
- Measured the change in threshold field over a range of piezo crystal frequencies.

Skills

General	Project management, written/oral technical communication, proofreading/copyediting
Publishing	HTML/CSS, G Suite, Office, LaTeX, Acrobat, Audacity, Inkscape, GIMP, FinalCut Pro
Software	Python, Scratch, App Inventor, JavaScript, SketchUp, MATLAB, Mathematica
Electronics	Soldering, breadboarding, Arduino, Raspberry Pi, analog & digital circuit design/testing
Fabrication	3D printing, laser, waterjet, and plasma cutting, CNC woodworking, TIG welding
Lab	Semiconductor fabrication, atomic force microscopy, scanning electron microscopy, x-ray diffraction, diode lasers & optics, data analysis, and experimental design