Keith Curry

kcurry@keifh.com ▪ www.linkedin.com/in/keithcurrysf/ ▪ www.keifh.com

EDUCATION

B.S., Computer Science —**San Francisco State University**   **Expected Dec 2025**
B.A., General Biology—**San Francisco State University**   **Expected Dec 2025**

HONORS AND AWARDS

Genentech Foundation Scholarship/Fellowship ($11,000)   **Sep 2025 – Dec 2025**
Supports students from underrepresented backgrounds in biomedical research through mentoring and preparation for competitive graduate programs.

ABRCMS Student Travel Award ($1,500)   **Oct 2024**
Competitive award supporting conference travel for outstanding undergraduate researchers.

Bengier Foundation University Scholarship ($4,000)   **Aug 2024 – May 2025**
Awarded to high-achieving students demonstrating strong work ethic and academic potential.

Vincent Costantino Scholarship Endowment ($500)   **Aug 2024 – May 2025**
Provides financial assistance to students with academic promise and financial need.

College of Science & Engineering Student Project Showcase Annual Research Competition   **May 2024**
Awarded 1st Place in Microbiology, Biomedical Science.

NIH U-RISE Scholarship/Fellowship ($56,000)   **May 2023 – May 2025**
Competitive National Institute of Health (NIH) program providing mentored research training, academic support, and preparation for biomedical PhD study

CSU Louis Stokes Alliance for Minority Participation Award   **May 2023 – May 2025**
NSF-supported initiative recognizing excellence in STEM among underrepresented students.

ACADEMIC RESEARCH EXPERIENCE

Bioengineering Researcher (Independent Project)   **Aug 2025 – Present**
Project: *MoldiBlocks*
Collaborator: Judy Abuel, PhD Candidate (UC Davis)

   Commercial silicone molds for tissue microarray (TMA) fabrication are expensive and often limited in availability, restricting access for smaller or resource-constrained labs. To address this, I designed a low-cost, reusable mold system that replicates standard TMA dimensions while remaining compatible with existing histology workflows. Using Shapr3D for CAD modeling and the Elegoo Saturn 2 resin printer for high-resolution master molds, I cast platinum-cure silicone to produce durable, flexible molds that maintain dimensional stability through repeated use. Developed through rapid iteration and validation of a working prototype, the design reduces per-unit costs by more than 90 percent and has been tested by collaborating researchers, confirming accurate core dimensions and cassette fitting comparable to commercial TMA blocks.

Bioengineering Researcher (NIH-URISE)   **May 2023 – Present**
Project: *FlyCam*
PIs: Raymond Esquerra, PhD (SFSU), Tom Zimmerman (IBM)

   To quantify how chemical exposure influences *Drosophila melanogaster* fecundity, I worked with FlyCam, a high-throughput imaging system that automates egg counting across multi-well assays. The platform streamlined reproductive toxicology studies by enabling continuous, reproducible imaging of developing embryos. When a collaborator attempted to reproduce the setup, the original Anycubic i3 Mega S printer had been discontinued, limiting access to compatible hardware. In response, I rebuilt the system on a converted Ender-3 3D printer, redesigned configuration files for scalability, and rewrote the imaging scripts to save files in a natural reading order. I also transitioned the GUI from PySimpleGUI to FreeSimpleGUI, preserving a multi-thousand-line codebase and avoiding a complete rewrite. The updated platform is smaller, more stable, and easier to replicate, now serving as a foundation for ongoing validation and future toxicology experiments.

Project: *StentorCam*
PIs: Raymond Esquerra PhD (SFSU), Tom Zimmerman (IBM), Mark Slabodnick (Knox College)

   Understanding how *Stentor coeruleus* responds to light provides insight into cellular behavior and regeneration, yet such studies require precise, noninvasive imaging under controlled illumination. I engineered a robotic infrared imaging system to quantify photokinetic activity across large *Stentor* populations, independently designing a modular camera mount, x-stop, well-plate holder, and infrared light tray with diffusion film for uniform, non-disruptive illumination. I fabricated and assembled all components using 3D printing and verified infrared intensity and diffusion to ensure imaging stability. Insights from this system guided my later design of an infrared lighting pad to correct illumination nonuniformity. The resulting platform enables high-throughput imaging across multi-well assays for extended recordings under stable illumination and now serves as a model for reproducible instrument design adopted in ongoing photobiological research collaborations.

Bioengineering Researcher   **May 2024 – Aug 2024**
Project: *FlyShock*
PIs: Raymond Esquerra PhD (SFSU), Tom Zimmerman (IBM), Blake Riggs (SFSU)

   To enable aversive conditioning in *Drosophila* memory assays, I designed an early prototype of a rolled PCB shock system that could deliver consistent electrical stimulation inside a standard fly vial. I developed the electrode layout, produced fabrication mock-ups, and validated curvature and fit to ensure compatibility with the assay environment. This work established a foundation for a compact, reproducible shock-training apparatus for future behavioral studies.

Bioengineering Researcher   **Sep 2023 – Jan 2024**
Project: *Stentor Chemotaxis*
PIs: Raymond Esquerra PhD (SFSU), Tom Zimmerman (IBM), Mark Slabodnick (Knox College)

   To develop a controlled assay for observing *Stentor coeruleus* chemotaxis, I designed custom resin-printed and FDM wells optimized to maximize the field of view during imaging. In the process, I learned to coat resin prints to remove cytotoxicity and improve biocompatibility. I refined print orientation, curing time, and geometry to enhance optical clarity. Although behavioral trials were not completed, the design parameters established during this project informed subsequent *StentorCam* environmental assay development.

Bioengineering Researcher (NIH-URISE)   **May 2023 – Dec 2023**
Project: *Robocam Autofocus*
PI: Raymond Esquerra PhD (SFSU), Mentors: Tom Zimmerman (IBM), collaboration with Nystul Lab (UCSF)

   To address frequent z-drift and focus loss during 24-hour Drosophila larval imaging assays, I developed and implemented an autofocus algorithm for RoboCam, a 3D-printer-based microscope platform. Using OpenCV, Gabor filters, and z-stack analysis (5–20 images per 0.1 mm step), the system identified the sharpest focal plane within 30 s at setup and 15 s during subsequent corrections. It captured continuous 1080p video at 24 fps, stabilizing focus across >40 imaging runs and reducing compromised datasets from 30% to 0%. I also designed modular 3D-printed mounts for the camera and sample plate to maintain optical alignment across experiments. This automation increased assay throughput and reproducibility, establishing the foundation for later RoboCam iterations used in UCSF reproductive-toxicity studies.

CCC Summer Researcher   **Jul 2023 – Aug 2023**
Project: *S-Quad Stentor Shake, Shine, Shock*
Mentors: Mark Slabodnick (Knox College), Peter Chudinov (SFSU)

   To investigate how *Stentor coeruleus* responds to mechanical, electrical, and photokinetic stimuli, I engineered modular stimulation systems for multi-modal behavioral assays. Working with a 3D printer platform programmed by our mentor to generate controlled mechanical jerk, I designed an agar-bridge electrode system to deliver low-voltage electrical pulses while preventing copper contamination. I also built a 490 nm laser mount intended to test a predicted photokinetic response that was ultimately not observed. Using Shapr3D and Fusion 360, I modeled and printed

complementary fixtures, including adjustable laser and camera mounts, to standardize experimental alignment. Recordings collected with a USB camera for electrical trials and StentorCam V2 for optical trials showed no measurable light-induced behavior, confirming prior predictions and establishing a reproducible framework for future multi-stimulus experiments.

ORAL PRESENTATIONS

Curry, K., Chudinov, P., Nesbeth, A., Deron, D. C., Lee, K., Vazquez, J., Zimmerman, T., Esquerra, R., & Slabodnick, M. *StentorCam: A Flexible High-Throughput Device for Photosensitive Subjects.* Center for Cellular Construction, San Francisco, CA, July 2024.

Curry, K., Chandrasekaran, T., Gonzalez, S. Jr., Luo, J., Chudinov, P., Duong, J., & Ceron, D. *Autofocusing for a Low-Cost High-Throughput Computer Vision System (RoboCam).* San Francisco State University Summer Undergraduate Symposium, San Francisco, CA, July 2023.

Curry, K., Forrest, E., Lee, K., Yu, M., Chudinov, P., Esquerra, R., Zimmerman, T., Slabodnick, M. *S-Quad Stentor Shake, Shine, Shock.* Center for Cellular Construction Summer Course, San Francisco, CA, July 2023.

POSTER PRESENTATIONS

Curry, K., Chudinov, P., Nesbeth, A., Deron, D. C., Lee, K., Vazquez, J., Zimmerman, T., Slabodnick, M., & Esquerra, R. *RoboCam: A Low-Cost System for Automating Microscopy and Behavioral Ecology.* Biopharma Leaders of Color – JPM Healthcare Week Reception, San Francisco, CA, Jan 2025.

Curry, K., Chudinov, P., Nesbeth, A., Deron, D. C., Lee, K., Vazquez, J., Zimmerman, T., Slabodnick, M., & Esquerra, R. *RoboCam: A Low-Cost System for Automating Microscopy and Behavioral Ecology.* Aiify.io & Fetch.ai Innovation Lab, San Francisco, CA, Jan 2025.

Curry, K., Chudinov, P., Nesbeth, A., Deron, D. C., Lee, K., Vazquez, J., Zimmerman, T., Slabodnick, M., & Esquerra, R. *RoboCam: A Low-Cost System for Automating Microscopy and Behavioral Ecology.* ABRCMS, Pittsburgh, PA, Nov 2024.

Chudinov, P., Gonzalez, S. Jr., **Curry, K.**, Lee, K., Luo, J., Estevez, I., Nesbeth, A., Vazquez, J., Ceron, D. C., Duong, J., Zimmerman, T., Esquerra, R. RoboCam: A low-cost high-throughput research automation platform. ABRCMS, Pittsburgh, PA, Nov 2024.

Gonzalez, S. Jr., Chudinov, P., **Curry, K.**, Ceron, D. C., Nesbeth, A., Vazquez, J., Lee, K., Duong, J., Zimmerman, T., Esquerra, R. *RoboCam: A Flexible High-Throughput Platform for Biological Research.* College of Science & Engineering Student Showcase Annual Research Competition, San Francisco, CA, May 2024.

Curry, K., Forrest, E., Lee, K., Yu, M., Chudinov, P., Esquerra, R., Zimmerman, T., Slabodnick, M. *Stentor shake, shock, and shine: A RoboCam experience.* Center for Cellular Construction Quarterly Meeting, March 2024.

Curry, K., Chandrasekaran, T., Gonzalez, S. Jr., Luo, J., Chudinov, P., Duong, J., Zimmerman, T., & Esquerra, R. *Autofocusing for a Low-Cost High-Throughput Computer Vision System (RoboCam).* Biopharma Leaders of Color – JPM Healthcare Week Reception, San Francisco, CA, Jan 2024.

Ceron, D. C., **Curry, K.**, Lee, K., Bravo, A., Zimmerman, T., Esquerra, R. *Developing a Low-Cost Infrared Robotic Microscope to Investigate Plankton Behavior.* Poster presented at the Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) National Diversity in STEM Conference, Oct 2023.

Curry, K., Chandrasekaran, T., Gonzalez, S. Jr., Luo, J., Chudinov, P., Duong, J., Zimmerman, T., & Esquerra, R. *Autofocusing for a Low-Cost High-Throughput Computer Vision System (RoboCam).* SACNAS NDiSTEM, Portland, OR, Oct 2023.

INVITED TALKS AND PANELS

Guest Lecturer, Introduction to 3D Modeling, ISYS 856: Enterprise Mobile Applications, San Francisco, CA, Oct 2025.
Panelist, How I Got My Summer Internship. ACM@SFSU, San Francisco, CA, Oct 2025.
Moderator, CSU Career Series with OpenAI. Virtual, Sep 2025.
Speaker, ChatGPT Lab Showcase. San Francisco, CA, May 2025.
Panelist, Student Panel on AI in Higher Education. CEETL Second Annual AI Symposium, San Francisco, CA, May 2025.
Moderator, Tech Panel. SF Hacks, San Francisco, CA, Apr 2024.

INDUSTRY EXPERIENCE

ChatGPT Lab Member/Alpha Tester **Mar 2025 – Present**
OpenAI, San Francisco, CA

  Selected for the inaugural cohort of OpenAI's ChatGPT Lab, a pilot program for early product testing and design research. I collaborated with product engineers to evaluate learning-focused features such as Study Mode and provided structured feedback that informed iterative UI and prompt behavior improvements. My student use case was published in 100 Chats for Studying, Career & Life, and I led campus events on responsible AI use in education and research. Prior to the Lab's launch, I independently proposed an SFSU x OpenAI "Campus Ambassador" initiative in collaboration with OpenAI's community team, a concept later reflected in the CSU–OpenAI statewide Ambassador program. These collaborations advanced OpenAI's understanding of student-centered design and contributed to early feature validation across academic contexts.

Software Engineering Intern (Cloud and Container Services) **May 2025 – Aug 2025**
Fastly, San Francisco, CA

  I contributed to the migration of production Kubernetes clusters from Flux to ArgoCD, simplifying GitOps workflows and standardizing cluster management across environments. The migration improved visibility into application state, reduced deployment overhead, and enhanced maintainability for future workloads. In my primary project, I engineered Pol Patrol, a compliance monitoring system written in Go that integrated open-source policy frameworks with real-time metrics to verify adherence to security and configuration policies across hundreds of services. The tool provided engineers with transparent policy compliance data, reducing misconfigurations and strengthening infrastructure governance at scale.

TEACHING EXPERIENCE

Research Mentor **Jul 2024 – Jul 2024**
Center for Cellular Construction, San Francisco, CA

  Served as a peer mentor in a two-week experimental design course focused on cellular regeneration in Chlamydomonas. Guided student teams in formulating testable hypotheses, designing assays, and analyzing the effects of temperature, pH, and media composition on flagellar regrowth. Provided technical assistance, maintained experimental materials, and supported students in refining their experimental reasoning and quantitative analysis skills.

Discussion Leader, Learning Assistant, Tutor **Sep 2023 – May 2024**
San Francisco State University Computer Science Department, San Francisco, CA

  Led weekly discussion sections of 20 students in intermediate programming to reinforce lecture material and provide space for in-depth problem solving. Assisted students during large lectures to help those who joined late or fell behind stay engaged without disrupting instruction. Conducted volunteer tutoring sessions four times per week to provide additional support in debugging, code design, and algorithmic reasoning. Recognizing that professional development was underrepresented in the curriculum, I introduced optional extra-credit activities that encouraged students to build resumes, improve LinkedIn profiles, and attend networking events to strengthen career readiness in computing.

COMMUNITY SERVICE AND LEADERSHIP

Makerspace Technical Program Mentor **Jan 2025 – Present**
Department of Innovation & Entrepreneurship SFSU, San Francisco, CA

  Support student-led prototyping projects through 3D printing, CAD design, and equipment training. Collaborate with faculty to expand makerspace resources, implement sustainable printing workflows, and integrate design mentorship into multidisciplinary coursework.

Student Affairs Committee Member **May 2024 – Present**
Department of Computer Science SFSU, San Francisco, CA

  Serve on the Student Affairs Committee, collaborating with faculty to establish an Industry Advisory Board that connects recruiters with academic programs and builds sustainable career pipelines for STEM students. The initiative formalizes career readiness and employer engagement to persist beyond student leadership turnover.

President and Founder   **May 2024 – Present**
3D Printing and Design Club at SFSU, San Francisco, CA
   Founded a club to create space for students of any background to learn computer-aided design and 3D printing skills using Autodesk Fusion 360, Shapr3D, and Cura Slicer through hands-on workshops and collaborative projects. I also led recycling and sustainability efforts and provided consulting/design services to other laboratories on campus. Regularly hosted meetings and facilitated off-campus tours to highlight the importance of skills members developed.

Career Preparation (CP) Fellow, Campus Recruiting Captain   **Apr 2024 – Present**
Management Leadership for Tomorrow (MLT), San Francisco, CA
   Selected for an 18-month leadership development program for high-achieving, underrepresented students in STEM and business. Completed case studies and leadership assignments to strengthen technical and professional skills. As Recruiting Captain, organized events to expand MLT's outreach and supported fellows pursuing internships in software engineering and consulting.

Organizer   **Aug 2023 – April 2024**
Computer Science Pitch Competition, San Francisco, CA
   Host an annual pitch competition that helps computer-science students develop prototype applications and deliver entrepreneurial pitches for cash prizes. The event connects students with mentors from industry and academia while fostering innovation and public-speaking experience.

Outreach Chair   **May 2023 – May 2025**
Association of Computing Machinery (ACM) at SFSU, San Francisco, CA
   Lead a 15-member outreach team responsible for partnerships and sponsorships across ACM and its 10 sub-organizations. Coordinated company-led résumé reviews, interview prep sessions, and career fairs that support hundreds of computing students. Strengthened ties with industry partners to ensure sustainable collaboration and career opportunities for future student cohorts.

Sponsorships Chair   **May 2023 – May 2025**
SFHacks at SFSU, San Francisco, CA
   Managed sponsor relations and logistics for SFSU's annual hackathon attended by more than 300 participants. Secured $20,000 in corporate funding and coordinated workshops, mentorship sessions, and prizes with industry sponsors to promote student innovation and technical skill development.

Site Operations Manager   **Oct 2018 – Mar 2024**
Hair Fairies: The Head Lice Helpers, San Francisco, CA
   Redesigned staff training to adopt a public health–centered approach and developed a school tracking system to monitor lice outbreaks across districts. Expanded pro bono services to improve access for underserved families and delivered educational programs that reduced stigma and improved awareness among thousands of K–12 students in the San Francisco Bay Area.

TECHNICAL SKILLS
Programming: Python, Go, Java, C/C++, JavaScript, HTML/CSS, R
Scientific Computing: NumPy, SciPy, Pandas, Jupyter
Imaging & Analysis: OpenCV, ImageJ/Fiji, Image Processing, Z-Stack Analysis
3D Printing & Design: Rapid Prototyping, Iterative Design, Fusion 360, Shapr3D, CAD (FDM/SLA), G-Code Automation
Hardware & Instrumentation: Raspberry Pi, Arduino, PCB design (EasyEDA), PySerial
Tools & Platforms: Git, VS Code, Docker, Helm, Kubernetes, ArgoCD, Kyverno, Prometheus

PROFESSIONAL MEMBERSHIPS
Association for Computing Machinery (ACM), San Francisco Bay Area Chapter, Member
Internet Society (ISOC), San Francisco Bay Area Chapter, Member

Cloud Native Computing Foundation (CNCF), Member
Linux Foundation, Member
National Society of Black Engineers (NSBE), Member
Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS), Member
ColorStack, Fellow
CodePath, Fellow
Management Leadership for Tomorrow (MLT), Career Prep Fellow