JONATHAN D. WEISS

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SUMMARY

Graduate bioengineering research scientist with 4 years of experience in developing high-throughput and cost-effective bioprinting technologies for cardiac tissue engineering. Skilled in 3D computer-aided design (CAD), motion control system device prototyping, 3D printing of both solid and soft materials, and stem cell and tissue culture. Experienced in leading multidisciplinary teams that bridge engineering and the life sciences. **Looking for a research position beginning in fall 2025** that blends these disciplines to develop impactful technologies with applications in biomedical engineering, environmental sustainability, electronics, or beyond.

SKILLS

- Software: SolidWorks/Onshape; Inkscape/Illustrator; DaVinci Resolve/Premiere Pro; MATLAB/Python; ImageJ/FIJI; GraphPad Prism; Cura (3D printing); GitHub
- Technical: 3D printing of plastics, resins, and soft materials (FDM, SLA, bioprinting); 3D printer hardware/firmware design (Arduino); stem cell culture/differentiation; PDMS microfluidics; confocal microscopy

EDUCATION AND AWARDS

STANFORD UNIVERSITY, Stanford, CA
Ph.D., Bioengineering, *Thesis: Low-Cost and High-Throughput Bioprinting* In Progress
M.S., Bioengineering 2022

- NSF Graduate Research Fellowship Program (GRFP) Fellowship.
- Stanford Bio-X Honorary Graduate Student Fellowship.
- Enhancing Diversity in Graduate Education (EDGE) Fellowship.
- Bioengineering Teaching Assistant Award for outstanding efforts in supporting students and community.
- Bio-X Star Mentor Award, Undergrad Summer Research Program.

YALE UNIVERSITY, New Haven, CT
B.S., Biomedical Engineering, *magna cum laude* 2020

- Tau Beta Pi Engineering Honor Society Corresponding Secretary.

EXPERIENCE

STANFORD UNIVERSITY, Stanford, CA
Ph.D. Candidate, Mark Skylar-Scott Lab 2020-Present

- Developed a low-cost ($250) 3D printer capable of multi-material, multi-nozzle embedded 3D bioprinting and fabricated engineered heart tissues to study growth and maturation. Integrated printers into Stanford bioengineering curriculum (BIOE260/261).
- Engineered human induced pluripotent stem cell lines to scale proliferation and differentiation.
- Monitored 5-liter bioreactors for culturing 10 billion human induced pluripotent stem cells per week.
- Developed algebra and calculus curricula for middle and high school students and teach on weekly basis.

YALE UNIVERSITY, New Haven, CT
Undergraduate Research Assistant, Stuart Campbell Lab 2018-2020

- Designed a microfluidic cell-capture device and conducted high-throughput drug studies on isolated cardiomyocytes.

CORTEVA AGRISCIENCE, Johnston, IA
Intern, Genome Editing Lab 2019

- Validated alternate maize explants for CRISPR/CAS delivery to reduce costs of genomic transformation up to 10-fold.

PUBLICATIONS

- **JD Weiss***, A Mermin-Bunnell*, et al. **A low-cost, open-source 3D printer for multimaterial and high-throughput direct ink writing of soft and living materials.** Under Review; doi: 10.1101/2024.10.01.615991.
- DLL Ho, S Lee, J Du, **JD Weiss**, et al. **Large-Scale Production of Wholly-Cellular Bioinks via the Optimization of hiPSC Aggregate Culture in Automated Bioreactors.** *Advanced Healthcare Materials*. 2022.
- KJ Wolf*, **JD Weiss***, et al. **Biomanufacturing human tissues via organ building blocks.** *Cell Stem Cell*. 2022.
- JA Clark, **JD Weiss**, and SG Campbell. **A Microwell Cell Capture Device Reveals Variable Response to Dobutamine in Isolated Cardiomyocytes.** *Biophysical Journal*. 2019.