JONATHAN D. WEISS

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SUMMARY

Ph.D. candidate with 5 years of experience designing high-throughput, low-cost bioprinting technologies for generating stem cell and cardiac tissues at large scale. Skilled in cell culture, biofabrication, CAD, mechanical device prototyping, and 3D printing. Experienced in leading multidisciplinary teams bridging engineering and the life sciences to build open-source platforms. **Seeking an R&D position beginning in summer or fall 2025** that blends these disciplines to develop impactful technologies with applications in medical devices, biotech, sustainability, or beyond.

SKILLS

- Software: SolidWorks, Onshape, Python, MATLAB, HTML, Inkscape, Illustrator, DaVinci Resolve, Premiere Pro, ImageJ, FIJI, GraphPad Prism, GitHub, Ultimaker Cura (3D printing)
- Technical: Cell and tissue culture (stem cell, cardiac), biological assays, PDMS microfluidics, cell cloning, mechanical device prototyping, mechatronics, 3D printing (FDM, SLA, bioprinting), 3D printer hardware/firmware design, Arduino
- Languages: English (native), Mandarin Chinese (limited working proficiency)

EDUCATION AND AWARDS

STANFORD UNIVERSITY, Stanford, CA
Ph.D., Bioengineering, *Thesis: Low-Cost and High-Throughput Bioprinting* May 2025
M.S., Bioengineering, GPA: 4.1 2022

- NSF GRFP, Stanford Bio-X, and Stanford Enhancing Diversity in Graduate Education (EDGE) Fellowships.
- Bioengineering Teaching Assistant Award for outstanding efforts in supporting students and community.

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

- Designed, built, and published a $250 multi-material, multi-nozzle 3D bioprinter capable of embedded printing with heat-curable elastomers, photocurable hydrogels, and cell-laden, enzymatically crosslinked proteins.
    - Built and operate open-source platform printess.org, which has over 1,700 interactions to-date.
    - Building new photocuring UV-LED, temperature control, and active material mixing modules.
    - Integrated printers into Stanford bioengineering curriculum (BIOE260/261).
    - Regularly organize printer-building workshop and outreach events in the Bay Area.
- Engineered high-throughput, centimeter-scale stem cell and heart tissues to study growth and maturation.
- Genetically engineered and cloned human induced pluripotent stem cell lines to scale growth and differentiation.
- Monitored 5-liter bioreactors for culturing up to 10 billion human induced pluripotent stem cells per week.

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

- Designed, fabricated, and published a PDMS microfluidic cell-capture device for high-throughput drug toxicity studies on over 20 isolated cardiomyocytes per hour.

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

- Validated multiple maize (corn) explant targets for biolistic CRISPR/CAS delivery, optimizing transformation efficiency and reducing costs up to 10-fold to enhance agricultural seed production.

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.** *Adv. Mater.* 2025, 2414971. doi.org/10.1002/adma.202414971
- 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.** *Adv. Healthcare Mater. 2022,* doi.org/10.1002/adhm.202201138
- KJ Wolf*, **JD Weiss***, et al. **Biomanufacturing human tissues via organ building blocks.** *Cell Stem Cell.* 2022
- JA Clark, **JD Weiss**, et al. **A Microwell Cell Capture Device for Isolated Cardiomyocytes.** *Biophysical Journal.* 2019