

Tze-Ling (Amie) Chang

Email: tze-ling.chang@colorado.edu

EDUCATION

University of Colorado, Boulder, Colorado, United States

Jan. 2021- Present

Ph.D. Student in Chemical and Biological Engineering

Supervisor: Dr. Kristi S. Anseth

National Tsing Hua University (NTHU), Hsinchu, Taiwan

Sep. 2015- Jun. 2019

B.S. in Chemical Engineering

- Overall GPA: 4.18/4.3; Ranking: 2/64

RESEARCH EXPERIENCE

Department of Chemical and Biological Engineering, University of Colorado, Boulder, Colorado

Graduate Research Assistant

Jan. 2021-Present

Supervisor: Dr. Kristi S. Anseth

- Studying mechanotransduction of muscle satellite cells with aging using synthetic hydrogels
- Understanding the effects of aging and injury on muscle regeneration
- Developing photo-expansion microscopy

Department of Chemical Engineering, NTHU, Hsinchu, Taiwan

Undergraduate Student Research

Feb. 2017-Jun. 2019

Supervisor: Dr. Jang Wang

- Developed an *in vitro* 3D cell culture model that mimicked fibrotic liver tissues
- Studied the effects of mechanical properties of the scaffolds on cell proliferation

Commonwealth Scientific and Industrial Research Organization (CSIRO), Clayton, Australia

Research Intern

Jun. 2019-Dec. 2019

Supervisor: Dr. Helmut Thissen

- Developed an implantable biosensor for detecting epinephrine concentration in marine animals

PUBLICATIONS AND PRESENTATIONS

Günay, K.A., **Chang, T.L.**, Skillin, N.P., Rao, V.V., Macdougall, L.J., Cutler, A.A., Silver, J.S., Brown, T.E., Zhang, C., Yu, C.J., Olwin, B.B., Boyden, E.S., & Anseth, K.S. (2023). Photo-expansion microscopy enables super-resolution imaging of cells embedded in 3D hydrogels. *Nature Materials*, 22(6), 777-785.

Chang, T.L., Chen, L.H., Wang, J. *The study of 3D-printed biodegradable co-polymer for liver regeneration*. Nov. 2018

Poster Presentation at the 24th Symposium of Young Asian Biological Engineers' Community (YABEC 2018), Taiwan.

Günay, K.A., Silver, J.S., **Chang, T.L.**, Bednarski, O.J., Bannister, K.L., Rogowski, C.J., Olwin, B.B., & Anseth, K.S. (2021). Myoblast mechanotransduction and myotube morphology is dependent on BAG3 regulation of YAP and TAZ. *Biomaterials*, 277, 121097.

Hsiao, S.K., Liang, C.W., **Chang, T.L.**, Sung, Y.C., Chen, Y.T., Chen, Y., & Wang, J. (2022). An *in vitro* fibrotic liver lobule model through sequential cell-seeding of HSCs and HepG2 on 3D-printed poly(glycerol sebacate) acrylate scaffolds. *Journal of materials chemistry. B*, 10(46), 9590–9598.

Teng, C.L., Chen, J.Y., **Chang, T.L.**, Hsiao, S.K., Hsieh, Y.K., Gorday, K.A.V., Cheng, Y.L., & Wang, J. (2020). Design of photocurable, biodegradable scaffolds for liver lobule regeneration via digital light processing-additive manufacturing. *Biofabrication*, 12(3), 035024.

AWARDS

- College Student Research Scholarship from Ministry of Science and Technology Jul. 2018
-Received research funding to realize my written proposal
- Dean's List Fall 2015, Spring 2017, Fall 2017, Fall 2018
-Awarded to top 5% of the class in each semester
- Kuo-Hwa Yu Scholarship Jan. 2019
-Awarded to 2 students of the engineering school with academic achievements
- Ru-Bao Huang Li Memorial Scholarship May. 2018
-Awarded to one student that excelled academically in the Dept. of Chemical Engineering

EXTRACURRICULARS

Student Association of Dept. of Chemical Engineering, NTHU, Hsinchu, Taiwan

Vice President

Fall 2017-Spring 2018

- Led the Student Association and represented interests of 250 students of the Dept. of Chemical Engineering in department's committees
- Organized social activities, such as Freshmen Welcome Activities, Annual Singing Competition, Annual Feast, and Annual Sports Competition, all attended by over 100 students

2019 Graduation Ceremony of Dept. of Chemical Engineering, NTHU, Hsinchu, Taiwan

Event General Coordinator

Jun. 2019

- Organized 2019 Graduation Ceremony of Dept. of Chemical Engineering which was attended by over 250 people, including professors, students, and parents

- Responsible for launching the annual magazine of the department
- Coordinated with the department office for the funding and cooperated with article writers

SKILLS

- **Languages:** Mandarin (native), English (fluent)
- **Instrumentation:** ELISA Plate Reader, Tensile Testing Machine, Contact Angle Goniometer, UV-Vis Spectroscopy, Electrochemical Impedance Spectroscopy, Cryostat
- **Lab Skills:** PGSA Synthesis, Digital Light Processing 3D-printing, Cell Culture, Western Blotting, PCR, Hydrogel Synthesis, Myofiber Isolation, Muscle Satellite Cells Isolation, Photo-Expansion Microscopy
- **Software:** SolidWorks, MATLAB, Aspen, FIJI, Imaris