Dianyi Liu, PhD **dliu@danforthcenter.org/631-627-9678**

Education

University of Missouri, St. Louis. MO
Ph.D. in Cell and Molecular Biology *(August 2015 – December 2022)*
GPA 4.0/4.0

Washington University, St. Louis, MO
M.S. in Plant and Microbial Biology *(August 2012 – May 2015)*

Stony Brook University, Stony Brook, NY
B.S. in Biology, Developmental Genetics Specialization *(August 2010 – May 2012)*

Research Experience

Postdoctoral Associate *(January 2023 – Present)*
Advisor: Dr. James Umen at **Donald Danforth Plant Science Center**
Co-advisor: Dr. Kelly Dawe at **University of Georgia**

- Developing an Artificial Chromosome System in Chlamydomonas Based on CenH3 Tethering

Graduate Research Associate *(August 2012 – December 2022)*
Advisor: Dr. James Umen at **Donald Danforth Plant Science Center**

- Dissertation "Cell Size Control Mechanisms in the Multiple Fission Cell Cycle of Chlamydomonas"

Other Professional Experience

Molecular Designs LLC, Birmingham, AL *(Fall 2024)*
Consulting Scientist (part-time remote)

- Drafted regulatory documents and recipe protocols to facilitate the merging between LamdaBio LLC and Molecular Designs LLC

Bayer CropScience LLC, Chesterfield, MO *(Summer 2022)*
Graduate Intern at **Trait Genomics**

- Plastid genome isolation and sequencing to determine the molecular mechanism of male sterility in wheat.

Japan America Society - Women's Association of St. Louis (JASWA), St. Louis, MO *(January 2019 – December 2021)*
Board member.
Editor of the bi-monthly English Japanese bi-lingual JASWA newsletter and the annual directory.

Chinese Academy of Agricultural Sciences, Beijing, China *(Summer 2011)*
Undergraduate Intern

- Transcriptome analysis to determine the cold-response mechanisms in tobacco.

Selected Teaching Experience

St. Louis Modern Chinese School, St. Louis, MO *(June 2021 – December 2022)*
- **Staff lecturer** teaching Chinese-as-the-Second Language to adult English speakers.
- **Teacher representative/Speaker** at 2021 Chinese Cultural Immersion Youth Summer Camp by Associations of Chinese Americans.

University of Missouri-St. Louis. St. Louis, MO *(Spring 2018)*
- **Teaching Assistance** - BIOL2013 Genetics laboratory

Stony Brook University, Stony Brook, NY *(Spring 2012)*
- **Teaching Assistance** - BIO320 Genetics

Selected Outreach Activities

Plant Tech Jam, *Danforth Plant Science Center, St. Louis, MO (April 2024)*
- Booth host "Discover the Hidden Microscopic World Around You."

California College of the Arts*, CA (February 2022)*
- Guest lecturer for *FASHN-3200 Investigative Studio: Biodesign,* "Why do we care about algae?"

Washington University in St. Louis, *the Institute for School Partnership, MO (July 2020)*
- Guest lecturer for *Educ.6008.51 Teaching the Process of Scientific Investigation,* "Efficient Interpretation of Science."

Confluence Charter Schools, *South City Academy STEM Night, MO (February 2020)*
- Booth host "Science in Plants." as the representative of the Danforth Plant Science Center.

Chinese University of Hong Kong*, Biology Department, Hong Kong (November 2019)*
- Guest Speaker "The conserved retinoblastoma tumor suppressor pathway controls cell size in Chlamydomonas."
- Guest lecturer "An introduction of the Volvocine algae family, from the evolution of the multicellularity to the multiple fission cell cycle."

Westlake University*, Biology Department, Zhejiang, China (November 2019)*
- Guest Speaker "The conserved retinoblastoma tumor suppressor pathway controls cell size in Chlamydomonas."

Ladue Horton Watkins High School*, Ladue School District, MO (December 2019)*
- Booth host "Discover Volvox Development" about evolution and germ-somatic cell differentiation.

Selected Manuscripts

First/Co-First author Research Articles

- (Submitted to *The Plant Journal*) **Liu, D.,** Wang, M., Gent, J., Kim, D. W., Sun, P., Dawe, K., Umen, J.G. Two CenH3 paralogs in the green alga *Chlamydomonas reinhardtii* are functionally redundant and associate with centromere repeat regions.
- **Liu, D**., Lopez-Paz, C., Li, Y., Zhuang, X., and Umen, J.G. Subscaling of a cytosolic RNA binding protein governs cell size homeostasis in the multiple fission alga Chlamydomonas. 2024 ***PLOS Genetics.*** Mar 18;20(3):e1010503. DOI: 10.1371/journal.pgen.1010503.
- **Liu, D.**, Vargas-García, CA., Singh, A., Umen, J.G. A cell-based model for size control in the multiple fission alga *Chlamydomonas reinhardtii*. 2023 ***Current Biology****.* Dec 4;33(23):5215-5224.e5. DOI: 10.1016/j.cub.2023.10.023
- Lopez-Paz, C.*, **Liu, D**.*, Geng, S., and Umen, J.G. Identification of *Chlamydomonas reinhardtii* endogenous genic flanking sequences for improved transgene expression. 2017, ***The Plant Journal***: *for cell and molecular biology* 92, 1232-1244. DOI: 10.1111/tpj.13731(*co-first author)
- Li, Y.*, **Liu, D**.*, Lopez-Paz, C., Olson, B.J., and Umen, J.G. A new class of cyclin dependent kinase in Chlamydomonas is required for coupling cell size to cell division. 2016, ***eLife*** 5:e10767 DOI: 10.7554/eLife.10767 (*co-first author)

Sourcebook Chapter

- James Umen and **Dianyi Liu**, *The Chlamydomonas Sourcebook*, 3rd Edition, Volume 1 - Introduction to Chlamydomonas and Its Laboratory Use, Chapter 8 - Cell Cycle and Circadian Rhythm. ISBN: 9780128224571 Oct 2022, Elsevier

Book Translation

- **Dianyi Liu**, *Ten Billion Tomorrows: How Science Fiction Technology Became Reality and Shapes the Future,* Chinese Edition. ISBN-9787508675886 Jun 2017, CITIC Publishing Group

Selected Conference Presentations & Awards

The 20th Int'l Conference on the Cell and Molecular Biology of Chlamydomonas (Chlamy2023), Princeton University, Princeton, NJ *(June 2023)*

- **Travel Award** by the Chlamy2023 Committee
- **Best Talk Award** by the Chlamy2023 Committee
  - Talk: **Liu, D.**, Lopez-Paz, C., Li, Y., Zhuang, X., and Umen, J.G. Subscaling of a cytosolic RNA binding protein governs cell size homeostasis in the multiple fission alga Chlamydomonas.
  - Poster: **Liu, D.**, Vargas-García, C., Singh, A., and Umen, J.G. A cell-based model for size control in the multiple fission alga *Chlamydomonas reinhardtii.*
  - Poster: **Liu, D.,** Wang, M., Gent, J., Kim, D. W., Sun, P., Dawe, K., Umen, J.G. Characterization of centromeric histone CenH3 proteins in Chlamydomonas.

American Society for Cell Biology (ASCB) and European Molecular Biology Organization (EMBO) - Workshop on Cell Size and Growth Regulation, Weizmann Institute of Science, Rehovot, Israel *(June 2021)*

- **Workshop Speaker** by the ASCB Cell Size and Growth Regulation Workshop Committee
- Talk: **Liu, D.**, Vargas-García, C., Singh, A., and Umen, J.G. Elucidating the mitotic sizer in the multiple fission alga *Chlamydomonas reinhardtii.*

American Society of Plant Biologists (ASPB) annual meeting, San Jose, CA *(August 2019)*

- **ASPB Travel Award** by ASPB Plant Biology 2019
- **Concurrent Symposium Speaker** by the ASPB Program Committee
  - Talk: **Liu, D.**, Lopez-Paz, C., and Umen, J.G. A heterogeneous nuclear ribonucleoprotein (hnRNP)-like protein in Chlamydomonas functions as a cell-cycle repressor in the retinoblastoma cell-size control pathway.
  - Poster: **Liu, D.**, and Umen, J.G. Testing the constancy of the nuclear: cell volume ratio in wild type and cell-size mutants of Chlamydomonas.
  - Poster: **Liu, D.**, and Umen, J.G. Stochastic hybrid system approach to elucidate a cellular counting and sizing mechanism in Chlamydomonas.
  - Poster: **Liu, D.**, Lopez-Paz, C., and Umen, J.G. A heterogeneous nuclear ribonucleoprotein (hnRNP)-like protein in Chlamydomonas functions as a cell-cycle repressor in the retinoblastoma cell-size control pathway.

The 17th Int'l Conference on the Cell and Molecular Biology of Chlamydomonas (Chlamy2016), Kyoto, Japan *(June 2016)*

- **Travel Award** by the Genetics Society of America
- **Development Award** by the Donald Danforth Plant Science
- **Best Poster Award** by the Chlamy2016 Committee
  - Poster: **Liu, D.,** Li, Y., Lopez-Paz, C., Olson, B.J., and Umen, J.G. A new class of cyclin dependent kinase in Chlamydomonas is required for coupling cell size to cell division.
  - Poster: **Liu, D.,** and Umen, J.G. Testing the constancy of the nuclear: cell volume ratio in wild type and cell-size mutants of Chlamydomonas.