

SKIDMORE MCGRAW MICROSCOPY IMAGING CENTER NEWSLETTER

2025 Fall

Skidmore McGraw Microscopy Imaging Center (SMMIC) is an institution-wide technology center opens to all members of the Skidmore community as well as external users. During the 2024–25 academic year, SMMIC continued to support and advance microscopy-related research and education by offering a variety of microscopy courses, providing hands-on instrument training, and facilitating numerous research projects involving Skidmore faculty and students. The center also serves as a hub for collaborative research initiatives and community outreach programs.

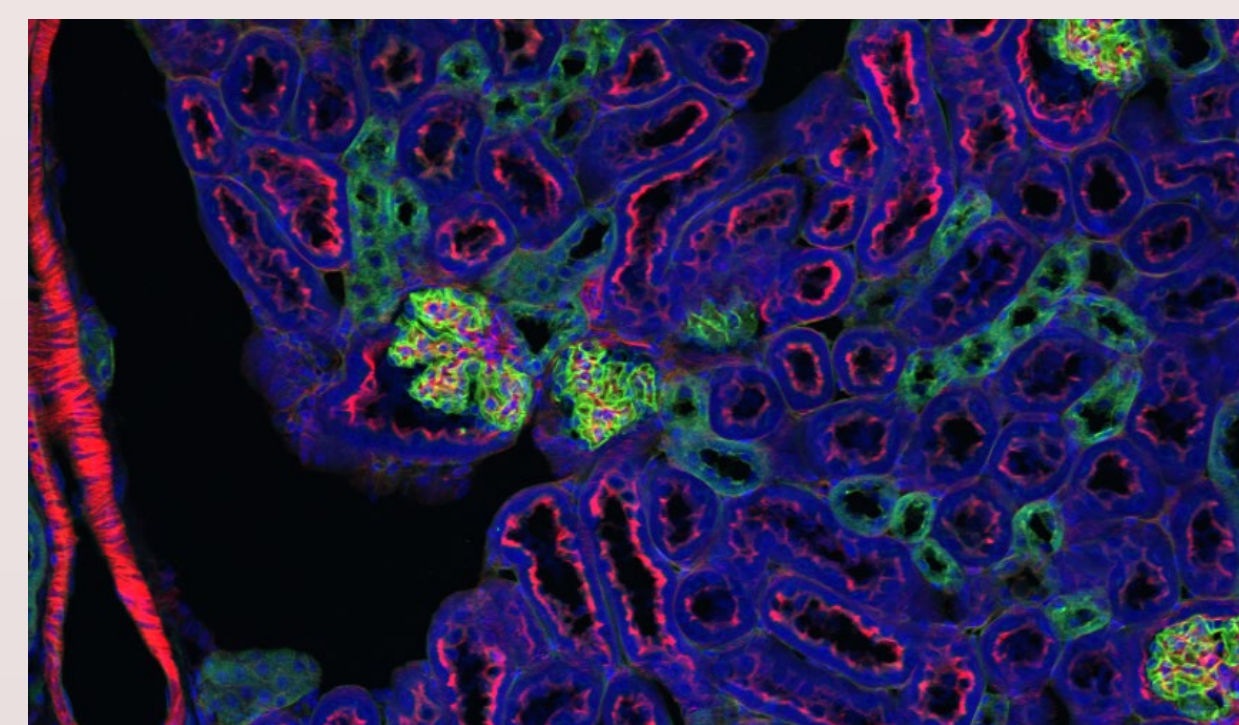
In Memoriam: Professor Richard H. Lindemann (1951–2025)

We dedicate this issue of our newsletter to the memory of Professor Richard H. Lindemann, a long-time advocate and foundational member of SMMIC. Professor Lindemann served on the SMMIC committee from its inception in 2002, offering steadfast support for the center over the years. He was one of the key contributors in securing the 2019 NSF grant that funded our current Field Emission Scanning Electron Microscope (FSEM), and his vision and dedication have left a lasting impact on microscopy research and education at Skidmore. May this edition of our newsletter honor his memory and the many contributions he made to the SMMIC.

For more information, please check www.skidmore.edu/smic or contact Lily Kozel at lkozel@skidmore.edu.

Advanced Light microscopy class in SMMIC

The BI368 Advanced Light Microscopy course was held at SMMIC during the Fall 2024 semester. This course offers students in-depth knowledge and comprehensive hands-on experience with a wide range of light microscopy techniques, including brightfield, phase contrast, darkfield, modular contrast, polarizing, fluorescence, and confocal laser scanning microscopy. As one of the two most popular microscopy courses among Skidmore science majors, BI368 provides a unique opportunity for students to explore both the theoretical and practical aspects of modern imaging techniques. Below are a selection of outstanding images from students’ digital portfolios, created as part of their final project. Please enjoy this showcase of their impressive work!



Confocal laser scanning microscopy image of mouse kidney tissue (Alec Lierena’25)



Darkfield microscopy image of salt crystal (Abigale Glasman’25)



Bright field microscopy image of dictydium (Sara Goldstein’25)



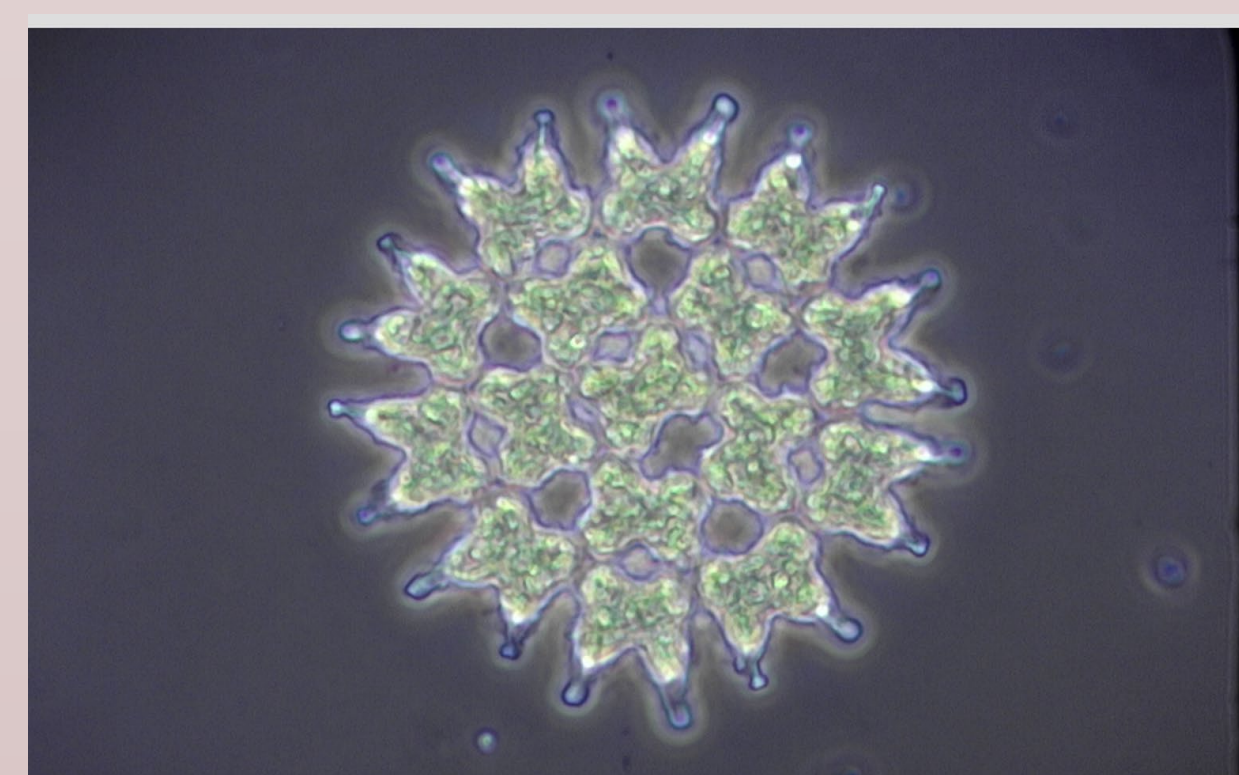
Modular Contrast microscopy image of Radiolaria (Stuart Malone’26)



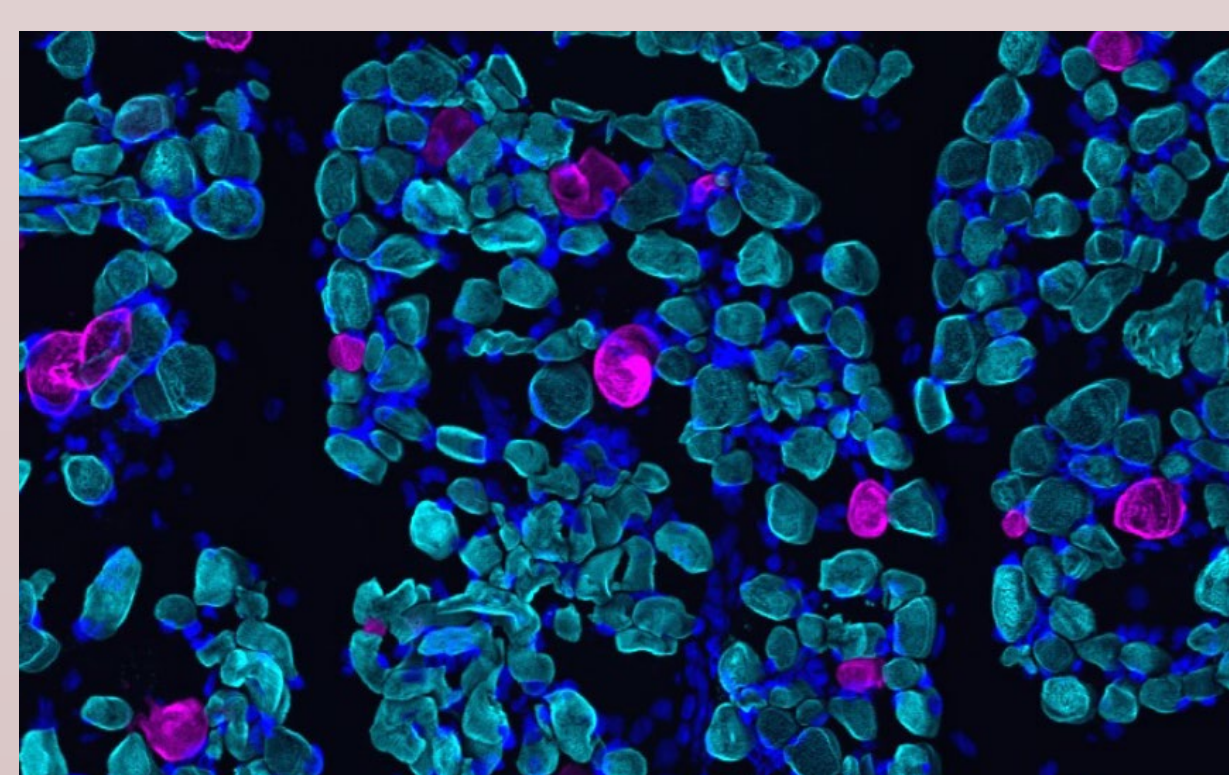
Polarizing microscopy image of dogfish placoid scale (Abigale Glasman’25)



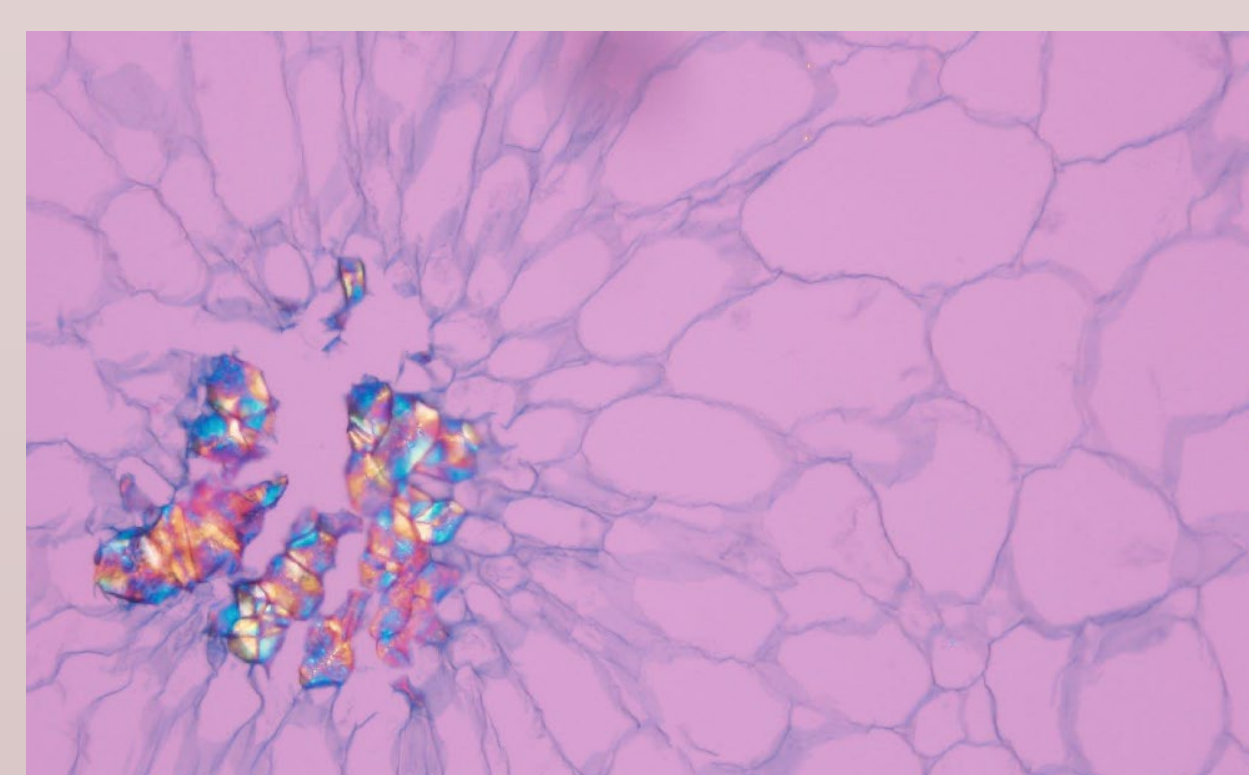
DIC microscopy image of cosmarium (Abigale Glasman’25)



Phase contrast microscopy image of pediatrium (Gabrielle Mahady’26)

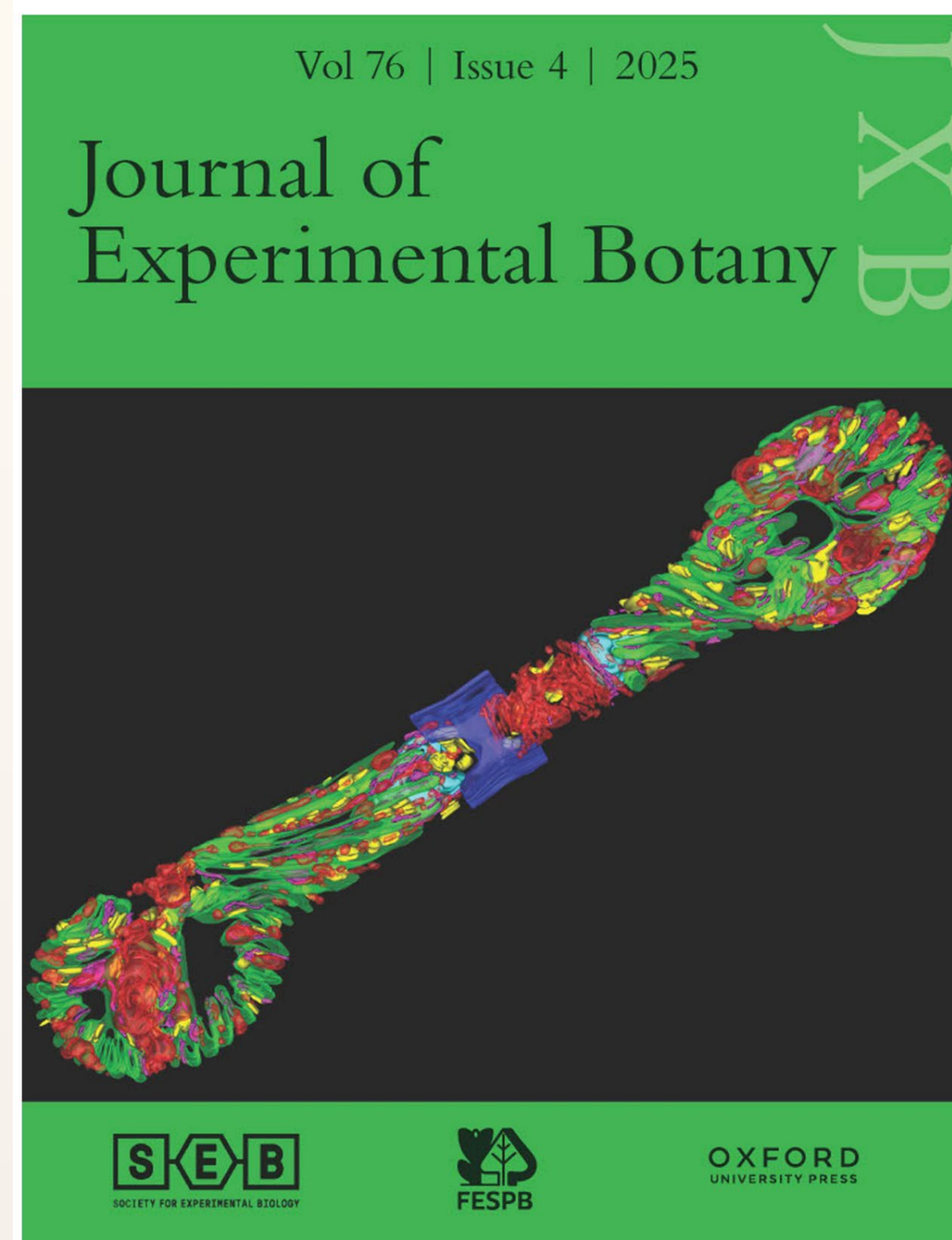


Confocal laser scanning microscopy image of sheep muscle (Stuart Malone’26)



Polarizing microscopy image of pear tissue (Allison Conwell’25)

SMMIC Images in Scientific Journal Covers



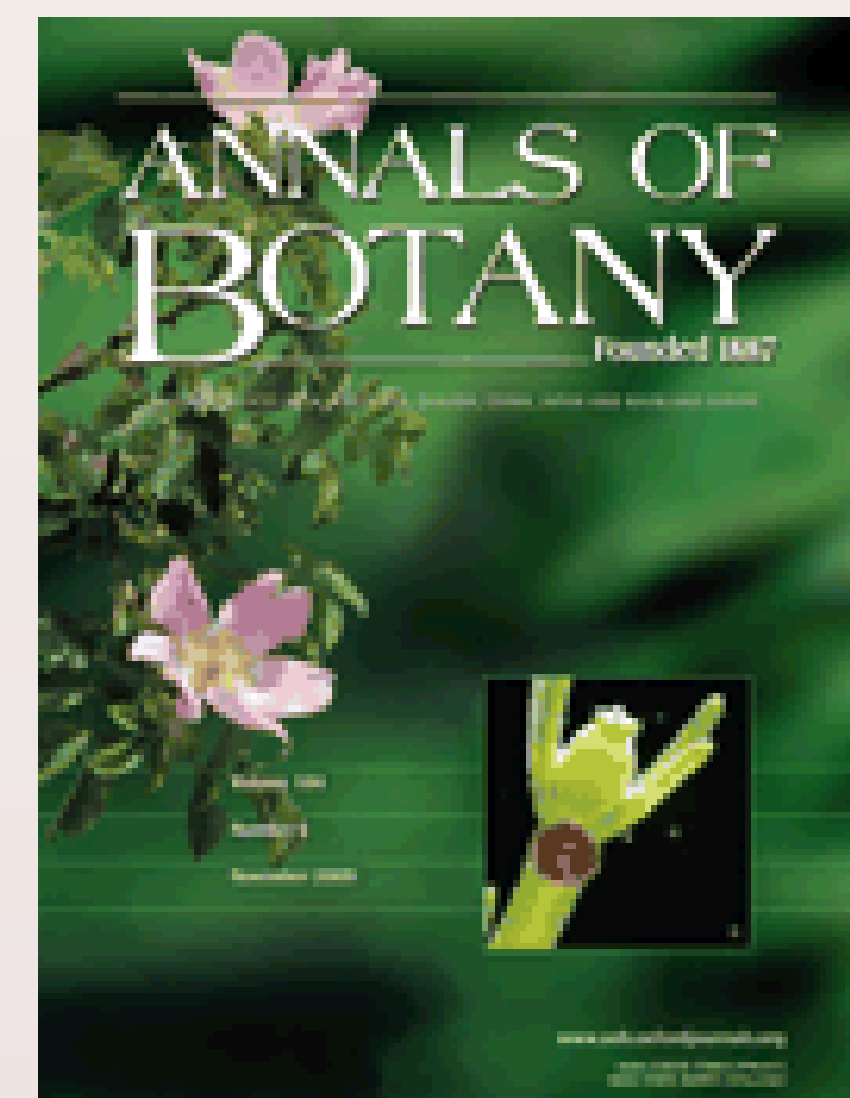
3D Model of Penium margaritaceum cell reconstructed from the serial array tomography imaging on Scanning Electron Microscopy (SEM) in SMMIC. The internal features are colored as follows: chloroplasts (green), nuclei (cyan), Golgi apparatus (yellow), mitochondria (magenta), vacuoles (red), and cell wall septum (blue).

Published Journal Article: Josephine G LoRicca, et al. Journal of Experimental Botany, Volume 76, Issue 4, 25 February 2025, Pages 961–979.

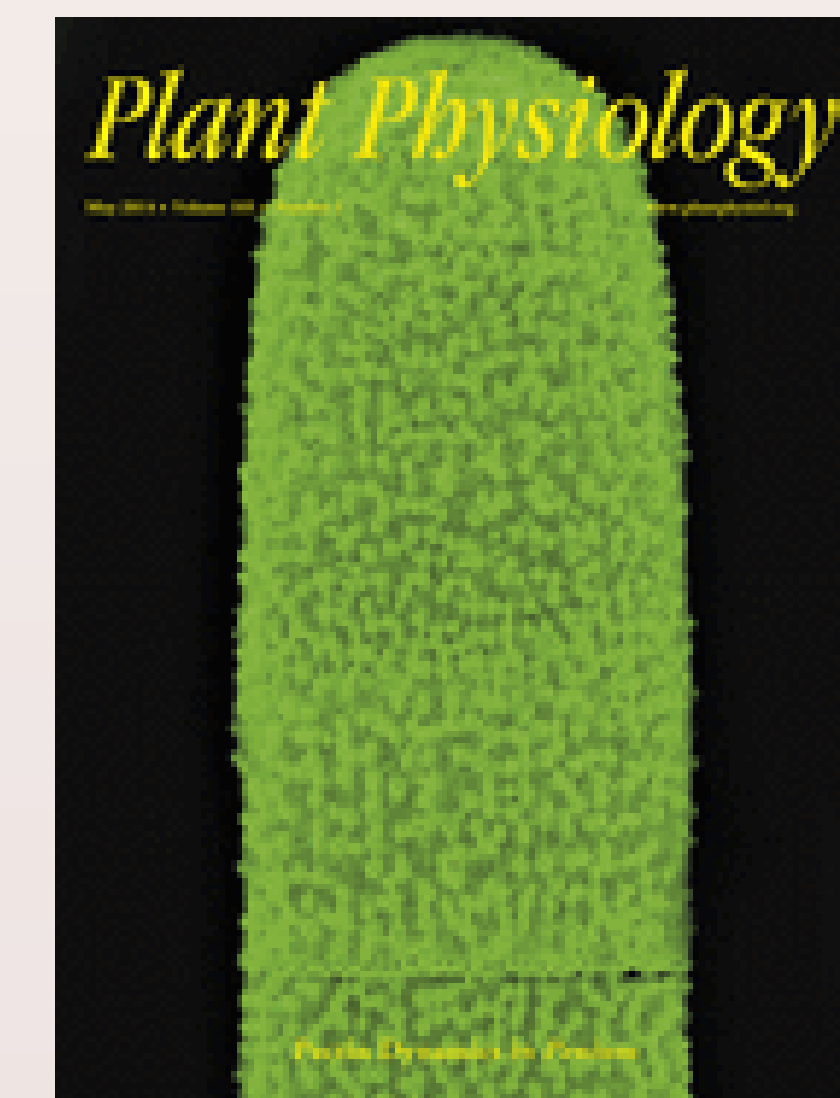
Over the years, SMMIC images have been selected as cover for multiple prestigious scientific journals: *Confocal Laser Scanning Microscope (CLSM) images of Penium margaritaceum cell (left); Stereo Light Microscope image of Chara (middle); Confocal Laser Scanning Microscope (CLSM) images of Penium margaritaceum cell Wall (right)*



I. Sorensen, et al. Plant Physiology, 153: 366-372, 2010



D.S.Domozych, et al. Annals of Botany, 104: 1045-1056, 2009



D.S.Domozych, et al. Plant Physiology, 165: 105-118, 2014



Artist: Allison Conwell

Microscopy and Art Project

Allison’s Senior Thesis Inspired by Microscopy: “Microbe Guide Through the Microscope” presented in the Skidmore Tang Museum senior thesis exhibition 2025.



Summer in SMMIC



During the summer of 2025, SMMIC proudly hosted the microscopy sessions for two major Skidmore science programs: the Skidmore Young Scholars Science Institute (SYSSI) and Skidmore Scholars in Science & Mathematics (S3M).

SYSSI is a one-week intensive science program for local high school students and continues the legacy of the Young Scholars Cell Biology Institute, which began in 2016. The program offers students the chance to explore various scientific disciplines and learn about potential careers in STEM fields. This year, 17 students from nine different high schools successfully completed the program. For more information, please visit: <https://www.skidmore.edu/smic/SYSSI>.

The S3M microscopy module, hosted at SMMIC in June, marked its fourth year. Students participating in this session gained hands-on experience with a range of microscopes and learned about the role of modern microscopy in real-world life science research.

