VICTORS FOR DISCOVERY

Training the Next Generation of Scientists

No student graduates from the University of Michigan with a diploma that says “Life Sciences Institute.” Yet for the 100 or so working in the LSI labs at any given time — from newly minted freshmen to Ph.D. candidates — it’s often a cardinal element of their education.

The students come to the LSI from across U-M — from the College of Literature, Science, and the Arts, the Medical School, the School of Public Health, and others — to immerse themselves in an interdisciplinary environment unlike any other on campus.

For some students, the days (and sometimes nights) spent in the lab allow them to exercise a lifelong passion while working side-by-side with leading scientists. For others, it can be a pivotal experience that sparks a future career in research.

Bridget Waas, a Northern Michigan University senior, spent the summer working at the LSI as part of the Perrigo Undergraduate Summer Fellowship, which is funded by a donor’s gift. “The experience definitely intensified my interest in biomedical research,” she says. “Before I went into the fellowship, I was unsure if I wanted to go straight into a Ph.D. research program or not. Now I know that I’ll be applying to Ph.D. programs this fall.”

Since the institute opened in 2003, more than 120 students have completed Ph.D. defenses and 75 undergraduates from across the state of Michigan have spent the summer as Perrigo Fellows. This year, the Program in Chemical Biology, which is housed at the LSI, admitted its largest class ever — 15 new Ph.D. students and 15 students in the Cancer Chemical Biology master’s degree program.

Recent LSI “alumni” have gone on to exciting new endeavors including a postdoctoral fellowship at Johns Hopkins University, a senior scientist position at the pharmaceutical company AbbVie and an assistant professorship at Purdue University.

“Probably the most important thing LSI has to offer is the experience of working in a genuinely collaborative environment,” says David Walt, Ph.D., University Professor and professor of chemistry at Tufts University, Howard Hughes Medical Institute professor, and member of the LSI’s Leadership Council and Scientific Advisory Board. “In the real world, science and innovation get done through collaboration by teams of scientists, engineers, mathematicians, computer scientists and business experts. Immersion in this kind of environment is the best possible training ground.”

Beyond the science itself, students have also stressed the
broad impact of their experiences in the LSI labs.

“The skills that I learned through my research have helped me immensely in all aspects of my education,” says U-M junior Emma Holloway, a double-major in neuroscience and an individualized program in religion, women and society, who has been working in the lab of LSI faculty member Bing Ye, Ph.D. “I learned patience as I attempted to master new tasks, perseverance as I struggled with difficult concepts, and the ability to look at one piece of evidence and apply it to the bigger picture.”

Joy Christopher, a 2015 Perrigo Fellow from Calvin College, notes, “In addition to the lab skills, I’ve learned a lot about what graduate school is like from graduate students themselves. There’s so much that I never could have found out except by doing research first-hand for a few months.”

And it’s not just the students that are receiving a benefit, notes Barry Sherman, M.D., a Leadership Council member who has more than 30 years of experience in the biopharmaceutical industry.

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“It’s also society,” he says. “The opportunities afforded to students at the LSI advance the university’s mission to produce the next generation of scientific leaders.”

At a time when federal research funding is increasingly scarce, limiting the amount of support labs can devote to students, donor support can make a huge difference.

“Graduate students are vital to our work in the lab,” says LSI faculty member John Tesmer, Ph.D. “Providing support from sources other than grants means we can attract top students to the LSI and invest more in other key areas of our research.”

Philanthropic funding also creates opportunities for those who might not otherwise have them.

“It’s important to support exceptional students who might not be able to afford to pay to attend Michigan and spend time in the lab,” says Leadership Council member David Kroin, managing director at Connecticut-based Great Point Partners. Kroin and his wife, Michelle, created a scholarship to support students at the LSI. “We’ve had the benefit of education at U-M, and we want to help deserving students access the full experience offered by the university.”

Leadership Council member Terry Rosen, Ph.D., CEO of Arcus Biosciences, supports students working at the LSI through the Undergraduate Research Opportunities Program (UROP) at U-M.

“Undergraduate research and basic science are both intrinsically valuable, and there’s a synergy when you put them together,” he says. “It’s expensive to enable great students to have a phenomenal experience. But it makes the LSI more productive as an institute, and ultimately those students go off into all sorts of important areas of research — basically, the investment is ‘fertilizer’ for future research endeavors.”

He adds, “If you don’t have the students, you don’t get the research. A great research institution needs great students to make the research great. And the students, institute and society all get the benefits. I know this is true — I have shared in this experience myself.”
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RISE OF THE
CELLULAR MACHINES

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KEYNOTE
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