



Biomedical Laboratory Diagnostics Program

MSU College of Natural Science | Newsletter for Alumni and Friends

Lab courses translate seamlessly into undergrad research opportunities

BLD Program undergraduate students working in the lab with Professor James Pestka, an autoimmune disease expert. Adrianna Kirby (top left) discusses how omega-3 fatty acid intervention influences lupus autoantibody microarray profiles with Professor Pestka, while Riley Spalding shows Tony McKenzie (Spartan mask) how to load immunofluorescent stained tissue sections from lupus-prone mice onto an advanced fluorescence microscopy system for analysis.

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From the Program Director...

The clinical laboratory has been in the spotlight for the past two years. I don't think there has ever been another time that the laboratory and laboratory testing has had so much publicity or center stage marketing. Did you ever think you would see the federal government send at-home test kits to anyone for free? I surely wouldn't have predicted it. But with the pandemic slowly loosening its hold on society, we need to come up with ideas on how to keep this exposure and presence of our labs alive.

We all know that there is a clinical workforce shortage, and we know that it is getting worse or amplified by the pandemic; but are you aware of another factor that is going to exacerbate the problem?

Over the past few years, internship opportunities for eligibility for certification in both hospital-based (through the Medical Technology Internship Matching Program of Michigan) and university-based practicum training slots are going unfilled. While we have always had students that complete degrees and pursue other career options, there has always been interest in entering the clinical laboratory—enough interest that there were waiting lists and students leaving the state to secure an internship. Being a blood banker, I liken it to having a hemorrhaging patient but no units in the refrigerator because there are no donors donating (which, by the way is also occurring. So if you can donate, there is a severe blood shortage).

Please don't think this is because of something we are doing in Michigan to skew the perception of the clinical laboratory career's suitability for growth and fulfillment. After attending a clinical laboratory conference recently, it is clear this is nationwide. We need to understand why this is happening and come up with ways to "right the ship" and get more people

pursuing a clinical laboratory career. We need to get people positioned to enter the field and understand how many opportunities this profession offers. I know that on campus, the faculty put the profession in a very positive light and clearly articulate the potential and the career ladder that is available.

Our alumni join us for "Make Connections" events, where they share their own career paths and

career satisfaction (<https://bld.natsci.msu.edu/events/bld-make-connections/>) as well as alumni stories (<https://bld.natsci.msu.edu/alumni-and-friends/alumni-video-stories-share-your-story/>). If you have ideas on how to shift the current trend or if you want to provide your career story, please contact me (gerlach@msu.edu) and we will get it out to the students.

If you love your career and find it fulfilling, spread the word! Contact high school and middle school science teachers and ask to talk to students about Medical Laboratory Science and the many other clinical laboratory careers available to those who love biology. We need to work on this as a team and work on it beyond our own campus. Please join the Biomedical Laboratory Diagnostics Program faculty in these efforts. 📍

"We need to get people positioned to enter the [clinical laboratory] field and understand how many opportunities this profession offers."



John Gerlach, Director
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André Lee, medical technology, '66, CEO of Leeway Health Education Foundation in Hermitage, Tenn., was part of a recent feature on NPR's online channel for health news, Shots. The story, "Black-owned hospice seeks to bring greater ease in dying to Black families," talked about the foundation-supported Heart and Soul Hospice in Nashville, Tenn., and the care they provide. Lee is administrator and co-founder of the organization.

Lisa McFarlane, medical technology, '82, is senior area director of sales for the central United States at bioMerieux, Inc., in Durham, N.C.

Mark Crafton, medical technology, '84, worked on the design and implementation of the American Society of Clinical Pathology's Leading Laboratories Recognition Program—a designation that promotes laboratory leadership and helps elevate the visibility and collaborative work of the medical laboratory team among clinical

colleagues, hospital leadership and patients. Crafton participated in developing a comprehensive set of criteria designed to measure the capability of a hospital laboratory to achieve high-quality outcomes, professional staff development and trusted leadership.

Taylor Smith, biomedical laboratory science, '21, started a job with Munson Medical Center in Traverse City, Mich., as a medical laboratory scientist on the midnight rotation.

In Memoriam

Esther M. Brown, a great champion and catalyst for Michigan State University (MSU), the Biomedical Laboratory Diagnostics Program (BLD) and the entire laboratory profession, died on June 23, 2021. She was 98 years old.



Dr. Esther M. Brown

Dr. Brown received her B.S. in medical technology (1946), M.S. in anatomy (1951) and Ph.D. in animal pathology (1955) all from Michigan State College (now MSU).

Dr. Brown was director of the BLD program at MSU from 1960-1970 and a pioneer and trailblazer for women in STEM fields. She had a deep passion for the laboratory, the university and the students of the program. From her contributions to the curriculum and profession, to the students she taught and mentored and the patients they

went on to help, she shaped countless lives and was a true giant in the medical laboratory profession.

Her affection and admiration for MSU and medical laboratory students never wavered. Upon retirement in 1990, her family moved back to Michigan to be closer to her beloved campus and the program she helped grow.

In 2010, she established the Dr. Esther M. Brown Endowment for Biomedical Laboratory Diagnostics, which provides funds for areas of greatest need for the program. She also supported BLD with expendable funds to help upgrade technology and equipment.

You can honor her memory by making a gift in her honor to the Dr. Esther M. Brown Endowment for Biomedical Laboratory Diagnostics by visiting <https://givingto.msu.edu/gift?sid=1662>.



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Lab courses translate seamlessly into undergrad research opportunities

by Kathleen Hoag, PhD, MLS(ASCP)cm, Associate Professor

Biomedical Laboratory Science (BLS) students at Michigan State University are offered many opportunities to gain hands-on skills within our Biomedical Laboratory Diagnostics (BLD) laboratory courses.

Undergraduate science students get few opportunities for laboratory coursework beyond freshman chemistry and biology labs. Biomedical Laboratory Science students take Clinical Laboratory Methods (BLD 213L) and Advanced Clinical Laboratory Methods (BLD 314L) laboratory skills courses fall semesters of their sophomore and junior years. In these courses, they learn laboratory safety, centrifugation, micro- and macro-pipetting, microscopy, solution preparation, spectrophotometry, and bacterial culture and gram stain

training undergraduate researchers.

Over the past five years, Professor Pestka has hired four BLS students as undergraduate researchers in his laboratory. These students are recent alumna Shamyia Harris (BLS '21), Adrianna Kirby (MLS senior), Riley Spalding (BLS junior) and Tony McKenzie (BLS sophomore). Pestka prefers to hire students as sophomores and give them more responsibilities as they gain skills, culminating in their senior year with a promotion to laboratory manager.

When we asked our BLD students why they got involved in undergraduate research, they spoke about coming to MSU knowing about the opportunities to work with faculty in research.

McKenzie considers this opportunity “a privilege. . . and I wanted to make full use of that opportunity while at MSU.” For Kirby, her interest in undergraduate research stemmed from being “the type of person who strives to try everything at least once.” Harris “wanted to approach science from a more hands-on perspective.” And even though he’s been in the lab only a short time, McKenzie noted a few things he didn’t expect to be so important in a research laboratory, including communication, schedule coordination with lab mates and laboratory maintenance.

McKenzie and Kirby noted that the biggest intangible skills they have gained from their undergraduate research experiences

are communication skills and professional self-confidence. For Harris, it was the opportunity to enhance her leadership skills by training new undergraduates in the research laboratory. Spalding believes her biggest intangible benefits have been patience for the challenging and sometimes disappointing task of watching science progress unfold, and appreciation of the friendships she has made in the research lab. She anticipates that they will be lifelong friends, brought together by the pursuit of science progress and a common goal.

Harris believes her research experience will positively impact her future.

“It taught me to ask questions when I don’t clearly understand, have a positive attitude, show consistency in my effort of work, and to work in a timely manner,” she said. “These are career skills that are applicable well beyond a research laboratory.”



Biomedical laboratory students (back to front): Tony McKenzie (BLS sophomore), Riley Spalding (BLS junior), Adrianna Kirby (MLS senior) and Shamyia Harris (BLS '21), pose for a group photo in the Pestka lab.

“These are career skills that are applicable well beyond a research laboratory.”

techniques. This positions them to immediately make progress in undergraduate research laboratories.

James Pestka, University Distinguished Professor in the MSU Department of Food Science and Human Nutrition, appreciates the hands-on skills our BLS students possess. Pestka is the Robert and Carol Deibel Family Endowed Professor for Lupus Research at MSU and has a long history of

Pioneering a passionate—and compassionate—career in infectious disease

Barbara A. Atkinson, D.O., FACOI, FIDSA, FAME, has been a passionate ambassador for the teaching and learning of microbiology, bacteriology, internal medicine and infectious disease research for more than six decades. Her non-traditional path as a medical student—receiving her D.O. more than 20 years after earning her bachelor’s degree—speaks to her success in navigating a world that, at the time, placed many barriers in front of women.

When Atkinson arrived on the MSU campus in fall 1960, she planned to major in mathematics. Working her way through college, she held a job streaking agar plates for medical technology, microbiology and veterinary medicine classes—which, instead, led her to pursue a career in microbiology.

Atkinson earned her B.S. in medical technology in 1964, completed her internship at St. Luke’s Hospital in Saginaw, Mich., and then took the position of section head in the microbiology department (1967-1973).

“It was a great time in medicine; many organisms were being identified and new antibiotics were being discovered,” she said.

In 1973, she joined the staff of The Bronx Lebanon Hospital Center in New York as a research associate, working with many of the great infectious disease and microbiology experts of that time.

“While there, I became an expert on the effect of sub-inhibitory concentrations of antibiotics on bacteria and phagocytosis,” said Atkinson, who presented her research in the United States, Europe and South America.

Both research and teaching were important to her, but she wanted to return to patient care.

DISCOVERY

“It was a great time in medicine; many organisms were being identified and new antibiotics were being discovered.”



Barbara A. Atkinson, D.O. (left) with Dr. Esther M. Brown, one of her mentors and the first director of MSU’s Biomedical Diagnostics Laboratory program (at that time known as the medical technology program), at BLD’s 90th anniversary celebration in 2017.

After earning her D.O. from MSU’s College of Osteopathic Medicine in 1988, she completed her internship and residency at Flint Osteopathic Hospital (Mich.). Her fellowship in infectious diseases at the University of Texas at San Antonio marked the completion of her formal education—which included HIV/AIDS research and clinic experience.

She was recruited to the University of North Texas Health Science Center at Fort Worth (UNTHSC) as an assistant professor in 1994. She rose through the ranks, retiring in 2015 as chief of the Division of Infectious Diseases.

Atkinson has a long history of innovations within her field—from laboratory diagnostics to internal medicine. She has received many accolades over the course of her career. In addition to being widely published, she received a teaching award—UNTHSC’s Clyde Gallegher, D.O. Memorial Award (2000)—in recognition of her ability to combine basic science with clinical medicine; and the UNTHSC President’s Award for Clinical Excellence (2011 and 2012). She was also named a Top Doctor by *Fort Worth Magazine* for 15 years.

She values what her students and patients have taught her over the years.

“One of the most rewarding experiences was seeing HIV/AIDS patients graduate with degrees—including medical degrees,” she said.

Atkinson credits her MSU professors and mentors with launching her successful career. In 2017, she established an endowed scholarship in MSU’s College of Osteopathic Medicine.

“My mentors have been inspirational to me,” she said, “and I would hope that recipients of this scholarship will be committed to their patients, the profession and long-term learning, while mentoring and training the future osteopathic physicians who follow them.”

Faculty Honors



Hoag

Kathy Hoag, Ph.D., MLS(ASCP)^{CM}, received the American Society for Clinical Laboratory Science-Michigan (ASCLS-MI) Key to the Future Award and the ASCLS-MI Pamela Agren Inspiration Award. She also serves as treasurer for ASCLS Region IV 2021-22, is

District 1 representative on the ASCLS-MI Board of Directors, and chair of the Risk Management Committee for the 2022 ASCLS-MI Annual Meeting.



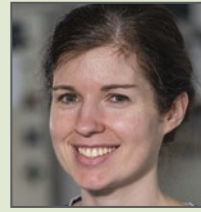
Morris

Rachel Morris, Ph.D., MLT(ASCP)^{CM}, is the American Society for Clinical Laboratory Science (ASCLS) national chair for the abstract and proposal review committee.



Nishizawa-Brennen

Yukari Nishizawa-Brennen, Ph.D., MLS(ASCP)^{CM}, SC(ASCP)^{CM}, MT(Japan), is The Scientific Assembly discipline chair – chemistry for ASCLS-MI.



Wholehan

Angela Wholehan, MS, MLS (ASCP)^{CM}, SBB^{CM}, is president-elect for the Michigan Association of Blood Banks (MABB) for 2022, chair of the MABB Education Committee and a member of the MABB Annual Meeting Planning Committee.



Setyabudi Wolfe

Mariane Setyabudi Wolfe, MS, MLS(ASCP)^{CM}, is the 2021-2022 president of the American Society for Clinical Laboratory Science-Michigan (ASCLS-MI) and co-chair for the Michigan Association of Laboratory Science Educators (MALSE).

BLDAF call for nominations

by Emily Hubbard, MSU BLDAF president

It's nice to reminisce about being a Biomedical Laboratory Diagnostics (BLD) student at Michigan State—feeling that sense of community and support throughout the program. If your time as a student has passed but you'd like to rejoin that community and help support current students, consider applying for the BLD Alumni and Friends Board (BLDAF).

This board is dedicated to keeping former and current students involved in the program and thriving by sponsoring alumni events, presenting awards, forming connections with graduates, providing mentoring for current students and looking for ways to help support program improvements, just to name a few.

If elected, you'd serve a three-year term. Our meetings are once a month for an hour and are all held through Zoom for those of us who are no longer in the area.

The board has connected me with amazing people who have completed a degree in BLD, taken this major and made it their own. With all these great MSU minds working together, we can help this program continue to grow, and ensure that current and future students experience that wonderful sense of belonging that BLD brought to all of us.

If you are interested in applying, please contact Cindy Raven (president-elect) at craven@charter.net and include your name, contact information, a short biography and a CV/resume by **April 15, 2022**.

From all of us on the BLDAF, Go Green!

Contact Us

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BLD Student Association update

by Walker Hayslette, BLDSA Executive Board President

The job of the Biomedical Laboratory Diagnostics Student Association (BLDSA) Executive Board is to connect BLD students and provide them with information about what the major entails and the opportunities available. BLDSA provides various opportunities for students to participate in professional and social activities such as guest speaker presentations, study sessions and volunteer events.

With the ongoing pandemic, we have faced some obstacles. However, the executive board has been able to put together multiple virtual events for students. We have had riveting guest presentations from individuals who could not travel to East Lansing, Mich.



BLDSA Board. Top row, L to R: Mikayla Sague, Jyoti Prasad, Elizabeth Hartz, Walker Hayslette. Bottom row, L to R: Rachel White, Melissa Schamanek, Darcie Kolanek.

For example, Dr. Brandy D. Gunsolus, DCLS, MLS(ASCP)^{CM}, the first person to earn a doctorate in Clinical Laboratory Science in the United States, was able to

speaking with our students. She shared information about the Doctor of Clinical Laboratory Science, the training required, and the changes that have occurred in the field. Another speaker, Dawn Taylor, MA, MLS(ASCP)^{CM}, from Ascension Michigan Laboratory Services in Detroit, Mich., gave us a virtual lab tour. We were able to see an actual clinical lab and its utilization.

Study sessions have also provided valuable opportunities to our members, allowing for socialization, troubleshooting class assignments and studying for exams with BLD faculty members. We will continue to provide events and be a resource for all BLD students. I want to thank the executive board for their hard work!

BLD graduate program update

by Rachel Morris, Graduate Program Director

While 2021 was another challenging year for the world, the BLD graduate program was able to carry on—pretty much as usual. Once again, the summer labs were canceled, but other courses continued as planned, demonstrating another advantage of our student-centered, online approach. We hope to return to running the summer laboratories for 2022.

One of our graduating students presented her master's project at the ASCLS Joint Annual Meeting in Louisville, Ky., last summer. Heather Alvarez originally submitted her abstract *Evaluation of Verigene Enteric Pathogens Test in a Small Volume Laboratory* for a poster presentation, but the abstract reviewers chose her for the honor of presenting her work for the Oral Presentation Competition as well. Alvarez gave a great presentation, and she won an award!

Looking forward to 2022, we are working toward further expanding our microbiology course offerings for graduate students. As we mentioned last year, clinical microbiology is rapidly changing to incorporate more molecular techniques, and our goal is to provide the continuing education that laboratorians need to succeed in this changing environment.



Pictured from left: Maddie Josephs, former ASCLS president; Heather Alvarez; and other non-BLD award winners.

Admissions took an understandable dip during the pandemic, but we are now seeing an encouraging increase in applications for fall 2022. We look forward to welcoming this new class as well as new lifelong learners and certificate program students.

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BLD tailgate returns!

by Kate Fandrick

After a year of no tailgates, alumni and friends of the Biomedical Laboratory Diagnostics (BLD) Program were eager to get together for Homecoming this past fall on Oct. 2, 2021. Those who attended were greeted by Biomedical Laboratory Diagnostics Student Association members, who were selling t-shirts and handing out raffle tickets. Recent alumni—and not-so-recent alumni—as well as friends young and old, had fun playing games. It was a sunny day filled with cornhole, Jenga and throwing around the football. People relaxed and chatted while eating, and excitement was in the air. People left the tailgate having renewed their friendships—or having made



BLD students having fun at the program's 2021 MSU football tailgate event.

new ones. It was wonderful to be together again; and satisfyingly, MSU beat Western Kentucky. We hope you will join us this year for the BLD tailgate on Oct. 15, 2022. 🍀

SAVE THE DATE! BLD Homecoming Tailgate | October 15, 2022



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