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MICHIGAN STATE UNIVERSITY | Lyman Briggs College

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Cover photo courtesy of Linda Samuelson and Joel Howell.

LYMAN BRIGGS COLLEGE

Lyman Briggs College is an undergraduate, residential college founded in 1967 by dedicated individuals hoping to bridge the widening gap between sciences and humanities. The first of its kind, the college has become known as the institution students go to for an excellent foundation in science and mathematics with additional focus on history, philosophy and sociology of science.

MESSAGE FROM THE DEAN

One of the distinctive features of Lyman Briggs College is our emphasis on interdisciplinary approaches to education and research. LBC is well known for giving students the opportunity to study scientific and mathematical fields in societal context. But the way we do this relies extensively on forming connections among disciplines traditionally housed in separate departments and colleges. Because the humanists and scientists within the college collaborate closely, we engage constantly in explaining the big questions in our fields to one another without relying on jargon or shared backgrounds. And by working together on the mundane tasks of hiring, evaluation and governance every day, we build the capacity to immerse our students in learning that transcends disciplinary boundaries.

Senior seminars and study abroad/away programs that combine STEM and HPS topics, or even have teaching teams with faculty in different fields, have long been part of our curriculum. Newer offerings that cross disciplinary boundaries include a freshman course bridging biology and chemistry topics (Introduction to Quantitative and Integrative Reasoning) and career-focused sophomore seminars in our NSF-sponsored STEM Scholars program (now named SPRING). Specialized courses linking science to entrepreneurship are on the horizon.

We are excited to have added several new Briggs faculty members who focus on science communication, public outreach, and computation. The collaborations they are building with one another and with long-time Briggs faculty will open up exciting new avenues for teaching and learning. A "maker club" for students and a related senior seminar on the history of computing technology started in the last year. Faculty in biology, physics, and HPS are planning an initiative in computing across the curriculum, paralleling our longstanding work on writing across the curriculum. A "two cultures studio" teaching space is being proposed to house a variety of senior seminars, course projects, and outreach activities in parallel with the existing STEM teaching and student research spaces and the "physics studio" now under construction.

Finally, Briggs is benefiting from being part of MSU's Cultural Engagement Council, which arranges multi-year event series around campus-wide themes. The next theme will be "Water Moves MSU", which ties directly into the work of many of our biologists, chemists, historians, and philosophers. From faculty research on aquatic ecology and environmental justice to student course projects addressing the Flint water crisis, Briggs community members are engaging with water in creative ways and looking forward to campus-wide collaborations.

I hope you'll enjoy reading about these initiatives – and related interdisciplinary projects – in this issue of the Briggantine!

Elizabeth H Simmons

A central part of her mission as an educator is encouraging more students (especially those from under-represented groups) to consider studies in the physical sciences.

She holds degrees from Harvard and Cambridge, and is well-respected by colleagues and her staff.

Elizabeth Simmons came to Lyman Briggs College in 2003 and became dean in 2007. Among other accomplishments, she is credited with leading efforts to increase the student body by 25 percent and renovate the teaching laboratories.

Dr. Simmons is a world-renowned particle theorist, whose research focuses on the origins of mass. She has received numerous prestigious awards in her career, and continues to conduct research in the physics department.

Similar to her dedication to research, Dr. Simmons enjoys teaching physics courses at all levels, and presently teaches a junior level course in mathematical physics.

CONGRATULATIONS L

S LBC CLASS OF 2016!

LBC NEWS

Alumni Joel Howell and Linda Samuelson chosen as Spring Commencement speakers

During the commencement ceremony this spring, LBC graduates will be addressed by Joel Howell, M.D., Ph.D. and Linda Samuelson, Ph.D. The married couple are currently academics at the University of Michigan, but the foundations for both their scientific careers and their relationship came from their time at Lyman Briggs College.

Dr. Linda Samuelson

Samuelson, a graduate of the class of 1976, grew up in East Lansing in a Spartan family. Encouraged by their father and their proximity to the university growing up, Samuelson and her three siblings all attended MSU.

The choice of major was also a simple one for Samuelson, who had loved science all of her life. She attended Michigan State to study biochemistry, and chose Lyman Briggs because the idea of a residential college greatly appealed to her.

Samuelson described LBC as a "fantastic learning environment." She greatly appreciated having core classes within her dorm building, while also having the entire university at her disposal.

Briggs also showed her the value of community, as she lived and learned with her classmates and formed professional relationships with her professors. She believed that the nature of Lyman Briggs as a residential college allowed her to interact with her professors more extensively than a typical college. Professors often treated students like colleagues, inspiring both confidence and maturity.

Initially, Samuelson's interests lay outside the medical field. As she learned and grew during her time at Briggs, however, she felt her interest in science mature into a desire to attend graduate school and to eventually earn her Ph.D. in Microbiology from the University of Chicago in 1984.

Currently, Samuelson is a faculty member in both the Physiology and Internal Medicine departments at the University of Michigan. While she does some graduate student teaching, her primary work is done in directing a gastrointestinal physiology research lab. Her research focuses on the billions of new cells created in stomach and intestine tissues daily. Her work with these gastrointestinal stem cells may also help researchers develop a better understanding of cancer.

When asked how her time at Briggs affected her future and career, she felt that Briggs provided a solid base for her academic journey. The years of training and education she underwent "built on the strong foundation I had at Briggs."

One of the most impactful things according to Samuelson, however, is that she met her future husband at Briggs. "That's not trivial," she said. "Our life together started there."

Howell added that the development of their relationship was largely due to the living and learning community in Lyman Briggs. Their time in Holmes hall gave the couple opportunities to get to know each other that they may not have had if either of them had chosen another major.

Dr. Joel Howell

Unlike his spouse, Joel Howell's childhood took place far from the banks of the Red Cedar. Growing up in the small town of Columbus, Mississippi, Howell wanted to leave the south behind and discover the northern part of the country.

At the time, MSU was actively recruiting National Merit Scholars, with at least one National Merit Scholarship available in every state. After becoming a National Merit Scholar, Howell's path to MSU was fairly clear.

Like Samuelson, Howell joined LBC right away, feeling that "the idea of a liberal arts small college within a big university was very appealing," and chose biochemistry as his major. He began his education planning to become a scientist and researcher, but decided during his junior year to pursue medical school instead. This decision was the result of a summer job as an orderly at the hospital in Howell's hometown. He went on to earn an M.D. from the University of Chicago in 1979 and a Ph.D. from the University of Pennsylvania in 1987.

Howell, who is currently a faculty member in both the medical and history departments at the University of Michigan, was interested in joining history and medicine, though he did not pursue the history aspect

Howell and Samuelson relaxing outside Holmes Hall in 1975 (left) and at the spring 2016 LBC Commencement ceremony (right).

until after completing his medical training. This was influenced by his parents, as his father was a historian and his mother a biologist.

The mixing of science and the humanities in Briggs also helped form this interest. "Briggs was a wonderful example of true interdisciplinary learning," Howell said. He fondly recalls a particular class where he and his classmates were given pieces of fruit and asked to spend an hour writing essays about them, with the result being "a lot of pretty cool, science tech-y fiction." Howell feels that these experiences really impacted him and his future career decisions.

Howell carries on the spirit of Briggs interdisciplinarity within his career as both a doctor and a historian. While most of his colleagues work in their research labs when not in the classroom, he uses that time to study history. Howell's research focuses on how, why, and when Americans have become so obsessed with the use of technology for health care. His work attempts to understand history from not only the perspective of elite practitioners but also that of the typical patient.

"I talk a lot about Briggs," added Howell. "You run into Briggsies wherever you go." Often when he gives a talk at an event, Howell says others will approach and introduce themselves to him as Briggsies.

Though the couple are now both faculty at the University of Michigan, they have maintained their ties to their Alma Mater. They are often in town to visit Samuelson's family or attend Spartan sporting events. "We definitely stick up for MSU," Samuelson said.

She adds that teasing rivalry aside, both she and Howell are proud members of both the Michigan State and University of Michigan communities, saying "we are lucky to have taken advantage of what both universities have to offer."

Linda Samuelson and Joel Howell have been selected as keynote commencement speakers and recipients of the Lyman Briggs College Distinguished Alumni award. They will speak together at the Spring 2016 LBC Commencement Ceremony on May 7.

LBC students study biology and evolution at the Chicago Field Museum

In mid-February, students in Dr. Peter White's LB 145 class were able to expand their knowledge outside the classroom during a trip to Chicago. Students stayed downtown overnight, explored the beautiful city and experienced true Chicago deep dish pizza before walking to the Chicago Field Museum the following morning.

The Chicago Field Museum aims to "inspire curiosity about life on Earth while exploring how the world came to be and how we can make it a better place," making it the perfect location for LB 145, a biology course focused on the effects of cell function on biological development.

At the museum, students began work on a project centered on the Evolving Planet exhibit, which includes "an awe-inspiring journey through 4 billion years of life on Earth, from single-celled organisms to towering dinosaurs and our extended human family." The exhibit includes fossils, animations, interactive displays, and a Hall of Dinosaurs filled to the brim with enormous fossils and skeletons.

The group project focused on evolution, with each group focusing their research on a particular species or characteristic. "Students investigated the evidences for evolution presented in the Evolving Planet exhibit and are tasked with making video podcasts of their findings," said Dr. White.

In addition to the Evolving Planet exhibit, students explored the multitude of other exhibits around the museum. From Ancient Egypt to the world of insects to the DNA Discovery Center, there was no shortage of information and experiences for students to explore.

"As a college student with a major in science, I'm not sure what more I could have asked for out of this trip" said Victoria Badia, one of the LBC students who took the trip. "It was incredible to make connections between the information found within the museum exhibits and my recent coursework in LB 145. I remember looking at the DNA sequencing display and thinking 'I just learned how this works, how cool!' Going on this trip reminded me just why I love being a student in Lyman Briggs—not only are we learning about science from faculty who truly love teaching, but we are being exposed to real-world applications of the material we cover."

Sophomore Lindsay MacAulay added, "I really enjoyed the Chicago trip with the LB145 class. It was a really great trip and I loved that we had the opportunity to do some roaming around in downtown Chicago! I got my first picture with the famous bean [i.e., the Cloud Gate at Millennium Park]! The museum itself was also a really

great experience as well, and also my first trip to the Field Museum. The evolutionary section was definitely my favorite part of the Museum, mainly because of the dinosaur section. I loved learning about how all the scientists were able to learn based on the fossils and bones of dinosaurs they found! Another part I really liked was the DNA lab. It was a strange but cool feeling to read about how they read DNA sequences and already understand it!"

Since their return, students have begun editing the videos and pictures they collected at the museum into their final podcasts, which will then be presented to the class. The goal of these video podcasts is to encourage students to think beyond their textbooks to describe the historical evidence for evolution that extends beyond what students have learned in LB 145.

Students discuss a skeleton in the Hall of Dinosaurs

Students study a museum map to determine where they want to film

Dr. White instructs students on their tasks and schedules before releasing them to explore the museum

Christie Tobey retires from LBC

Executive Staff Assistant Christie Tobey is retiring this year after being a valued member of the Lyman Briggs community for over 35 years. In her time at Briggs, she has loved working with the students, who she believes are "the heart and soul of Lyman Briggs College."

Christie has been a vital point of contact for LBC students as they journey through college. From recruitment to graduation, Christie has dedicated her efforts to help students prepare for graduation and take advantage of every opportunity available to them.

"It has been my sincere pleasure to work at Lyman Briggs," she said. "Briggs has been my "family away from home" for over 35 years. I will certainly miss all of my friends and colleagues, but I am very excited to move on to a new adventure. My plans include moving closer to my adult kids, lots of camping and travel, music festivals, crafts and volunteering. I take with me very fond memories!"

LBC faculty receive grants to support summer Research Experience for Undergraduates

Faculty in Lyman Briggs College, the Department of Mathematics, and the Department of Statistics & Probability were recently awarded grants from the National Security Agency and the National Science Foundation to continue their summer Research Experience for Undergraduates (REU).

The program, the Summer Undergraduate Research Institute in Experimental Mathematics (SURIEM), is led by LBC mathematics professors Dr. Robert Bell and Dr. Aklilu Zeleke. SURIEM is a summer program that allows undergraduate students with diverse backgrounds to spend eight weeks in Holmes Hall researching current topics in mathematics, applied mathematics, and statistics.

Faculty mentors select topics which are accessible to undergraduate students and which are of active interest to research mathematicians. The problems these students tackle in SURIEM often have no known solution.

During the program, students formulate and test conjectures by researching literature on the topic, conducting computer experiments, corresponding with outside sources, and constructing examples. The ultimate goal is to understand their topic well enough to state and prove mathematical theorems, which codify their observations and discoveries. Students then prepare a final report and seek to publish their research in a scientific journal. Most students present their findings in the regional Michigan mathematics conference as well as at national mathematics meetings such MathFest and the Joint Mathematics Meetings.

With support from these external grants and internal support from MSU, SURIEM will host 18 students this summer.

The research topics for this summer include:

Combinatorial games on graphs
Faculty mentor: Dr. Robert Bell (LBC & Mathematics)

Recursive polynomials
Faculty mentor: Dr. Aklilu Zeleke (LBC & Statistics)

Random fractals and Brownian motion
Faculty mentor: Dr. Yimin Xiao (Statistics)

Mathematics of Magnetic Resonance Imaging (MRI)
Faculty mentors: Dr. Mark Iwen and Dr. Tsveta Sendova (both in Mathematics)

Briggs Student Nominated for Two Prominent Graduate Scholarships

Five LBC students were awarded third prize in the MLK Jr. Advancing Inclusion through Research Awards this semester.

Brittany Ladson, Sydnee Wargo, Tia Barbera, Erin Schaner and Lindsay Dean were recognized for their website, STEM Under the Microscope.

The MLK Jr. Advancing Inclusion through Research Award was created in 2010 to highlight the ways in which MSU students follow Dr. King's legacy, using their critical and creative skills to understand and re-envision the world.

2016 Science Blast! Held in Holmes Hall

This spring, a group of industry professionals visited Holmes Hall to meet students at the Science Blast! career fair. Sponsored by Dow AgroSciences, this career exposure event provided Lyman Briggs students with an excellent networking opportunity.

The event helped students to learn more about opportunities in their field of study, from the path to graduate school to industry and beyond. Students were encouraged to interact and ask employers the questions they typically wouldn't ask in standard career fairs.

The event hosted a variety of companies including Auto-Owners Insurance, Burgdorf's Winery, Dow AgroSciences, Fraunhofer USA-Center for Coatings and Diamond Technologies, the Information Technology Empowerment Center (ITEC), Michigan Department of Health and Human Services, Neogen Corporation, Niowave Inc., Sparrow Health System and Teacher Education at MSU.

Faculty Awards

DOUG LUCKIE (BIOLOGY) was the winner of the MSU Alumni Club of Mid-Michigan Quality in Undergraduate Teaching Award. This award recognizes teachers who take pride in and are committed to quality teaching, and who demonstrate substantial continuing involvement in undergraduate education.

RYAN SWEEDER (CHEMISTRY) won the 2015 Michigan Distinguished Professor of the Year Award. The award is intended for tenured faculty members who demonstrate sustained commitment to undergraduate instruction and who are nominated by their institutions for excellence in fulfillment of the selection criteria.

GEORGINA MONTGOMERY (HPS) received the 2016 Teacher-Scholar Award. It is awarded to six MSU faculty members early in their careers who have earned the respect of students and colleagues for their devotion to and skill in teaching.

SEAN VALLES (HPS) also received the 2016 Teacher-Scholar Award. The essential purpose of the award is to provide recognition to the best teachers who have served at MSU for seven years or less.

Alumni News

MICHAEL J. VANROOYEN, M.D., M.P.H. ('84 BIOLOGY) published a book titled *The World's Emergency Room: The Growing Threat to Doctors, Nurses, and Humanitarian Workers*. In this behind-the-scenes look at the evolution of humanitarian medicine, VanRooyen often features Lyman Briggs College.

SAMIR C. KULKARNI, M.D. ('07 PHYSIOLOGY) received his Doctor of Medicine in 2011 from Michigan State University. Dr. Kulkarni is a resident physician in Radiology at University of Texas Southwestern Medical Center in Dallas, TX.

MIKE BERKOWITZ ('10 HPS) is Legislative & Political Director of Sierra Club, Michigan Chapter.

CHRISTINA BRINKER, D.C. ('10 HPS) received a Doctor of Chiropractic degree from Life University in Marietta, GA. She owns Red Cedar Chiropractic in Alpharetta, GA, specializing in pediatrics, prenatal and family wellness care.

JOHN WESNER ('11 HUMAN BIOLOGY) obtained his MPH in Epidemiology at San Diego State University in 2013. While pursuing his graduate degree he worked at the US naval base in San Diego. He applied for and was accepted as a US Naval Officer and, since late 2013, has been serving as an Industrial Health Officer in the Medical Service Corp, US Navy, Yokosuka, Japan. He was promoted to Lieutenant this past summer; he will return stateside in March 2016, to serve at the Naval Medical Center in San Diego.

KATHLEEN E. MCGLEW ('13 PLANT BIOLOGY) is a research technician in the MSU Potato Breeding and Genetics Program.

In Memoriam

BRUCE E. WILSON, M.D. ('71 LBC Biology)

RONALD J. RYEL, PH.D. ('77 LBC Envir Science)

ROBERT B. CHAFFEE ('88 LBS Science & Tech Studies)

STAY CONNECTED

Did you move to a new city or get a new job? Let us know! We want to know what is going on in your career and would like to share your news with other LBC alumni. Send your updates to **lbcadvan@msu.edu** and we will include them in our next newsletter and on our website.

LYMAN BRIGGS COLLEGE
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Did you meet your spouse while attending Lyman Briggs College? Or best friend? Or business partner?

Tell us about a lifelong connection that you made at Briggs and we'll feature it in a later issue of the Briggantine. Contact the LBC Office of Development via e-mail at **lbcadvan@msu.edu**.