

Lyman Briggs School

25th



By Peter Carrington

A quarter century ago, Michigan State University embarked upon a series of bold experiments. Three residential colleges, Lyman Briggs, James Madison, and Justin Morrill, were created to provide the living/learning experience that was to be a centerpiece innovation of the 60's. They were colleges designed to be oases of closeness and personal contact. This year, Lyman Briggs College, now the Lyman Briggs School within the College of Natural Science, celebrates the success of its first 25 years, and is looking toward the future.

The original 1967 mission statement was about providing a liberal arts, science-based program for undergraduates, within a small college. As the founding dean, Frederic Dutton explains, "One overriding factor was, that I think we felt the units were too large for ideal kinds of relationships to develop, and that having groups with some interests in common would be more efficient and do a better job."

It came time to find a namesake for this science-oriented under-

graduate school. As Dutton recalls, "Lyman Briggs was an alumnus at Michigan State College and he was director of the Bureau of Standards for quite some time. Lyman Briggs College had a science concentration and was primarily interested in the sciences and, as a distinguished alumnus, he seemed like a good choice." In retrospect, commemorating this man, whose life of scientific investigation and public policy ranged so far, was more than just a *good* choice. Today, the small academic units, with faculty from diverse fields, communicating over their common interests is at the heart of Lyman Briggs School. The

Cook, daughter of A. J. Cook, a major figure in the development of the entomology department. In a style that could be the icon of his later accomplishments, he graduated in Agricultural Arts, while at the same time developing and sharpening a keen talent for mechanics and physics. He thus launched a career that would take him to the heights of public service, and would lead him to publish a daunting array of impressive scientific research from a list of areas of expertise which seemed to know no limit.

Some of his works have described the uptake of water by

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real Lyman Briggs would be happy about that.

Lyman Briggs, the man, attended MSU's original precursor, Michigan Agricultural College, at a time when there were only two majors offered, Mechanical Arts, and Agricultural Arts. He entered MAC and majored in Agricultural Arts. It was here he met and courted his wife, Katharine

plants, improvements to the ultraviolet microscope, the absorption of water by quartz, the mechanics of curve-ball pitching in baseball, the measurement of gravity at sea, high-speed aerodynamics, and the findings of the first balloon flights into the stratosphere.

He was co-inventor of the earth

inductor compass, subsequently carried on Lindbergh's flight across the Atlantic.

However, it was Lyman Briggs' sixty plus years of public service which was the platform for his role in history. Of great importance was his initial period as Director of the National Bureau of Standards. When Dr. Briggs took this assignment, the United States was in the depths of the Depression. He took office with a staggering 50% budget cut for his agency. His concern for his co-investigators, and his will to keep an essential research laboratory together, led him to an intricate system of unpaid leaves and part-time assignments that allowed two thirds of the career staff to remain. This was a testament to his diplomatic skills.

It was only a few years later that the threat of the Second World War found the United States suddenly, desperately in need of increased research capacity. Briggs' success in keeping this critical facility intact, bore immediate and continuing fruits.

In the summer of 1939, President Roosevelt appointed Lyman Briggs to chair the first committee to

evaluate the military implications of nuclear fission. He would continue to affect U.S. nuclear policy for years after.

After 49 years of government service, Lyman Briggs, retired from the directorship of the National Bureau of standards in 1945, meaning that he could now devote more of himself to his beloved research. He passed on March 26, 1963 at the age of eighty-eight.

Three and a half years later, the school, bearing the name Lyman Briggs College was inaugurated.

Sandra Conner, Assistant to the Director, remembers, "I came in September of '67, so right before fall quarter started for the first year we actually had students here. I came at the beginning." Frederic Dutton, the founding dean of the then college, had started hiring staff the previous winter to fulfill the mission.

The first courses offered in the fledgling college, together comprise a unit which is now called *Science and Technology Studies*; then it was called *Logic, History, and the Philosophy of Science*. It was conceived in concert with the Philosophy department.

Philosophy Professor, Richard Hall recalls, "When I came here, in 1969, as a prof, the philosophy department here had an opening that I applied for. The Philosophy department here was closely connected with Briggs, because of the *Philosophy of Science* and the logic part of it. When I came here to interview, and they found out that I was interested in the philosophy of science and logic, they worked out an appointment for me with Briggs. At the time, we had basically three courses; a course in *Symbolic Logic*, a course in the *History of Science*, and a course in *Philosophy of Science*, and the students had to take them." It was one of the first, if not *the* first such program in the nation, and it gave Lyman Briggs a unique flavor in science education.

As Hall explains, "I taught a fairly traditional philosophy of science course, looking at what philosophers consider to be the main philosophies of science. I wanted the students to be introduced to the mainline philosophy of science, since they probably wouldn't get it any other place. They were all, of course, science students, science majors of one sort or another, so none of them, except for one or two out of hundreds, none of them would be philosophy majors, very few of them would take any more philosophy courses, except maybe the logic course, which we also think of as a philosophy course. I wanted them to really be introduced to philosophy in the standard philosophy of science rather than doing something pretty esoteric which wouldn't give them a fair picture of what's going on. But, what you can do, is, since all the students are science majors, and natural science majors, they've all had calculus and they have all had physics, you can draw upon some pretty heavy-duty science and math, which you wouldn't be able



Holmes Hall on campus is the home of both the residential and academic facilities of Lyman Briggs School. Photo by Peter Carrington.

to do over here, in the philosophy department, teaching the philosophy of science. And that was useful. I would often bring in things from Newton's law of motion, or things from calculus and so on, and I could assume that they would know what I was talking about. That was handy."

There has always been a sense of hands-on involvement. Richard Hall teaches the *History of Science*. "I concentrate on astronomy, so I follow astronomy all the way through pretty continuously. Right from the Babylonians and the early Greeks through Ptolemy and Copernicus up to Galileo. That's one continuous thread.

"I have to teach them what the naked-eye observations are that you could make if you were out there. How come the ancient astronomers came to think what they did? I take the students over to the planetarium to show the night sky, the motion of the planets, sun and moon. That's useful. They can kind of see it, as the Greeks would have seen it. I have them do some observational projects like I'm having them do the project measuring the height of the sun." This sort of project can have unforeseen results.

Hall remembers, "The guy who was teaching the history of science course earlier, it wasn't me, although it's me now, had the students doing an observational project. He was teaching this in the fall, and he had them measuring the height of the sun, once a week, at noon, for the whole fall term. Starting in September and going all the way until December. The sun gets lower and lower, so each week they would measure with some kind of rope, the angle to the horizon. The sun would be lower and lower. One day in late November, a woman student in the class came in crying, and asking, "Will it ever come back up?"

For many undergraduates in science, the words *hands-on* recalls their memories of undergraduate science laboratory classes. At their worst, these labs can be pitiless time trials through a lackluster manual. Here, Briggs is plainly different.

Howard Hagerman, professor, has been teaching biology in Lyman Briggs since 1967. "In biology, one of the unique features, of course, are open labs. The fact that we're somewhat smaller gives us a chance to do some innovative things that we wouldn't otherwise do. Open lab is one of these. That is, students come and go into lab on their schedule and not during 3-hour blocks. That allows us to set up experiments and expect students to return and take data on those at varying intervals, maybe throughout what used to be the quarter, maybe throughout the semester. For example, the Especially for Teachers Section on tissue culture (NATURAL SCIENCE Vol. III, No. 2, 1989/90)- that's one of our labs that we do at Briggs. The students come in and take data on that periodically throughout what was then the quarter, and now throughout the semester." It also means that a student having difficulty with a concept can return to the open lab as often as necessary to master the material.

What for the students is *hands-on*, for the faculty is experimentation in teaching. "There is some experimentation with new science and technology studies courses," Hall says. "Science and Technology Studies is a group of courses which the students usually take three of in their junior year. We've tried new courses there on environmental issues, energy issues, expert testimony in government and courts. Scientific expert testimony and that sort of thing. Some of those were just tried for a year or two and dropped; some were made permanent."

Smaller size has implications. When sophomore Gay Swavy said what she liked about Briggs, the teaching staff came up first, "I like the teachers, and the TAs that they have are very helpful. They know their stuff. They also have flexible hours." Smaller size give everyone in the School more chance for contact.

Assistant professor Maria Davis found that refreshing, "I came through a small school system. Briggs really has a small school feel to me, getting to know fellow professors and students, the faculty/student interaction. I think students get treated very professionally here." Additionally, as Howard Hagerman points out, "We get to know students fairly well. When a student comes to us at the end of the 4 years, we pretty well know (if they ask us to write a letter of recommendation) what we're writing about. They aren't just a number."

But there is more to the unique teaching style than the sense of a smaller community. Lyman Briggs School is one of the few places on campus that heavily uses *undergraduate* teaching assistants. Lyman Briggs Director Edward Ingraham explains, "Briggs started using undergraduate teaching assistants in the late '60s, and in fact, does a lot of that. Their experience isn't as great as graduate students, nor is their level of knowledge/education as extensive, but they are cracker-jack kids and their dedication is enormous. I give them a lot of responsibility."

Davis points out that the undergraduate teaching assistants bring an essential quality to LBS classes, "We rely on them because they know what the program is about, and they have been there where the students are. They are usually upper level students who have had advanced courses so they are not just straight out of the class, where

they would be trying to teach someone something they learned last semester. They are at more advanced levels, but they are sensitive to what the students are going through and what kinds of problems they are running into. For the people doing the teaching, that gets to be a problem because we are more and more removed from where we were when we were learning what these students are learning. We forget what it was like, how easy it is to get these concepts mixed up. Terms like "mitosis" and "meiosis" are similar and you might need a silly phrase to keep them straight. These are the things the undergraduate TAs are coming up with. They help to keep the program fresh. I really think the undergrad student assistants are a real bonus to our program."

Davis also points out that closer contact with dedicated professors and highly motivated undergraduates produces encouragement. "Especially as a woman in science, I think there is a nurturing atmosphere which tends to be more supportive of women, and less scary to women, and we do have a lot of women undergraduates. I also think that it's probably more comfortable for a lot of minorities. Right now we're trying to cultivate a good working relationship with the Drew program (Charles Drew Science Enrichment Laboratory) on campus. We already have Drew students who are Briggs students too and we are doing some interaction on a small scale but nothing formalized. We have a real place for that, to give some of these underrepresented groups in science a leg up, at least at this level. We have already lost a lot of them by college, but we can do things here to help keep them in the pipeline, so to speak. I think Briggs is a good place for that because of the personal attention and the supportive atmosphere."

As director Ingraham states, "It's really the outstanding dedication of the staff that makes this place work."

"Besides," points out Davis, "Working in a natural science division, in a zoology department for example, what's the likelihood that on a weekly basis you are going to interact with science historians, mathematicians, and people who are writing about the social and political implications of what we are doing in science? It's a very invigorating place to be for a faculty member too."

Conner adds, "The faculty are very committed to undergraduate students and my own students come back and tell us about that, what it's like to move out, if you will, into some of the other parts of the university, but the faculty here really do care about the undergraduates. The entire staff does. This is really a very fine place to work."

"The 25th as you might suspect, was really a milestone. I think it

was a time to reflect back on what we had accomplished. It was a time to look forward and what we hope to accomplish. For me, clearly, it was a delightful time to have the alumni come back and share what they had gained from their education, what they valued, and hear people who had graduated several years ago and some of the more recent graduates all feeling like their education had been very significant."

The 25th anniversary also brought a welcome visit from Peter Briggs Myers, Lyman Briggs' grandson. In Hagerman's words, "(Lyman Briggs') grandson was at our 25th anniversary and apparently the kind of things that he is doing in Washington, and in his work take him into the realm of the social aspects of science, and so, even though he wasn't educated here, he's doing things very much like the kind of training that we would hope a person would have gotten out of Briggs." 📖

Frederic Dutton, the founding dean of Lyman Briggs School, then college, taken at his home in East Lansing. Photo by Peter Carrington.

