THE MISSION OF LYMAN BRIGGS COLLEGE
LBC bridges the sciences and humanities through interdisciplinary teaching and research by
  o sustaining an inclusive residential college environment within a major research university,
  o fostering collaboration between students, faculty, and staff, to advance scholarship, teaching
    innovation, and community engagement, and
  o inspiring students to become lifelong learners, engaged citizens, and effective leaders.

LYMAN BRIGGS PRIORITIES ALIGN WITH BOLDNESS BY DESIGN
LBC is becoming an international model for residential, education-focused science colleges within research universities. We are establishing a strong record of integrated, interdisciplinary teaching, scholarship and engagement and increasing our national academic reputation. Notable accomplishments include:
• LBC provides an innovative, integrative STEM education to a diverse student body with a stable freshman enrollment of 625, increasing retention through senior year, and a 6-year degree completion rate of 85% with no significant differences by race or gender. Over 72% of entering LBC students go on to complete STEM degrees at MSU (vs. a 40-50% national average); see the attached graphic for details.
• Faculty members are steadily increasing the rate and success of proposals to external funding agencies. Grant submissions are $9M-$30M each year and the average new funding per year has averaged over $4M in the last few years (excluding LBC’s co-PI participation in BEACON). Most proposals involve interdisciplinary teams or collaboration across units; e.g., LBC faculty members are deeply engaged with BEACON and ICER. Many of LBC’s funded grants include undergraduate student researchers.
• LBC immerses students in research through multi-week course projects, professorial assistantships, honors seminars, our NSF-funded BRAID, S-STEM and REU programs, and college research awards.
• The (inter) national reputation of LBC as a home of innovative teaching and research is growing, as shown by media attention, faculty honors, grant awards, high-profile peer-reviewed publications, and consultancies with other institutions. LBC’s impact and visibility in the MSU community is reflected in its wide-ranging collaborations on faculty hiring and development, curriculum, inclusion, and research.
• LBC Advancement is working with faculty and staff to strengthen alumni engagement and prepare for a Capital Campaign focused on building endowments supporting access, inquiry-based learning and research experiences. In 2012 we celebrate new scholarships, a tripling of cash gifts compared with 2011 totals, and a 5-year agreement by ConAgra to provide funds and scientific collaboration for a lab-based undergraduate research course in food science. Our new communications officer and an alumni internship coordinator co-appointed in EGR (both hired with funds awarded to LBC for progress on diversity) are enabling the LBC Advancement office to focus on development and major gifts.
• LBC organized a May 2012 Conference on Interdisciplinary Teaching and Learning, with support from the Office of the Provost. Participants included leaders of the Association for Integrative Studies, who were so impressed by MSU’s strengths in this area that they invited MSU to host the 2014 AIS annual meeting. The Provost’s Office has promised support; representatives from LBC and JMC are assembling a campus-wide planning committee. The event will bring nationally renowned scholars and practitioners to campus to discuss the intellectual and organizational aspects of promoting integrative studies.

SPACE: THE BRIGGS FRONTIER
Our current priorities are retaining under-prepared students in STEM, serving the growing student population taking LBC courses, and supporting faculty members’ creation and adoption of the best active and cooperative learning techniques. Achieving these goals requires additional space.
• Enrollment in upper-level history, philosophy, and sociology of science (HPS) and senior seminar courses is burgeoning; the college appreciates the enrollment funds granted to open more course sections in 2012-14 and will request that these be made recurring, as the long-term need is supported by the data.
• LBC hereby requests priority access to scheduling its courses in one more Akers Hall classroom (in addition to Akers 134) starting 2013-14. This will support our classes for the LMP students and new HPS course sections to meet enrollment pressure.

• LBC requests that rooms Holmes E7 and E8 be assigned to LBC (they are now assigned to RHS) and converted into offices for the faculty teaching the extra courses referenced above. Both rooms are presently vacant, as their former functions were relocated elsewhere.

• LBC requests that the room Holmes E5/E6 be assigned to LBC (they are now assigned to RHS) and converted into an Active Learning classroom to support multiple courses as described below. LBC faculty have long sought such a facility in Holmes, but no space was available; this room will become vacant when RHS moves a shop facility. LBC courses can fully employ this room. Many of the classes in the room will be STEM classes that use demonstrations and tabletop experiments; the difficulty of transporting equipment between buildings makes use of another MSU Active Learning classroom impractical. Once this room comes on-line, our need for space in Akers should wane again.

I have previously informed FPSM Director Barb Kranz and RHS Assistant VP Vennie Gore of LBC’s intent to request Holmes E5,6,7,8 through the usual Space/A&I process this fall. LBC is seeking donor assistance to co-sponsor the alterations required for creating the Active Learning classroom.

PROGRESS ON GOALS IDENTIFIED BY LBC’s 2011-12 ACADEMIC PROGRAM REVIEW:

Development of learning objectives for the entire curriculum and its sub-components
Each LBC disciplinary group is establishing its desired learning outcomes this fall and providing feedback to two other academic groups. We will meld these into college-wide learning objectives in spring. We are also coordinating this work with the required review of course pre- and co-requisites and a CNS/LBC project documenting how our courses address skills targeted by the redesigned MCAT.

Strengthening of the Briggs experience through connections with our alumni
LBC is co-hiring an alumni internship/experiential education coordinator with Engineering to facilitate alumni mentoring and help our students prepare for diverse careers or post-graduate study.

Increasing recognition of LBC through greater scholarship and dissemination of our achievements.
Faculty members’ scholarly engagement, grant activity, external prizes, and media attention continue to grow. With support from the Provost, LBC is providing seed funds for new scholarly projects. Our new communications officer is publicizing our achievements more effectively, and our Advancement officer is working with UADV Corporate & Foundation Relations to connect us with new external sponsors.

LBC’S STRATEGIC FOCI FOR THE NEXT 3 YEARS

A Scholarly Approach to Teaching through Research and Innovative Practice
LBC faculty members continually create and assess innovative teaching practices that engage our students and improve our inquiry-based curriculum. Many publications, grants, and awards flow from this scholarly engagement in teaching; proven practices are often adopted by other units. Current examples include:

• Configuring some introductory biology and chemistry course sections to offer more in-depth coverage of advanced topics, more active-learning teamwork, and greater faculty contact during lab sections. The biology offering features intensive research projects; the chemistry offering focuses learning around connections between basic science and challenging real-world problems (e.g. the Fukushima disaster).

• Integrating educational technology that complements active-learning pedagogical methods across all LBC courses. This includes use of internet memes to humorously correct common student errors, iClickers to support in-class exercises, online drill problems to offer practice with detailed feedback, and on-line pre-lecture quizzes to facilitate just-in-time teaching, online survey tools to facilitate student projects, and blogging sites to provide continuous engagement in writing. Our IT officer is steadily introducing faculty to new technological options and providing on-site training.

• Re-framing our physics courses around biomedical examples that engage life science majors while providing rigorous calculus-based coverage of essential concepts and skills. We also use blended physics
tutorial/lab sessions where teams apply the week’s concepts to theoretical problems, experiment design, and data analysis. Both have improved students’ enrollment, persistence, satisfaction, and performance.

- Increased pedagogical training for undergraduate learning assistants and more consistent ULA mentoring throughout the academic year. LBC will implement a 2013-14 course on inclusive learning and pedagogical best practices for all aspiring ULA’s. A member of the planning team is attending a training workshop at U.C. Boulder this fall; after her return, the curriculum of the new course will be created. Several of these initiatives, notably changes to biology and chemistry courses mentioned above, a planned expansion of that effort into physics and mathematics, and other efforts involving educational technology make the creation of an LBC Active Learning classroom (e.g. in Holmes E5/6) a top college priority.

**Cross-campus Partnerships on Research and Faculty Development**

LBC is building a portfolio of multi-year collaborative efforts with campus partners, including:

- With a $1M grant from the U.S. Department of State, LBC, ISP, EGR, and CAL are engaged in an IREX University Linkage to help the Univ. of Duhok (Iraq) modernize its curricula and pedagogy in Biology, Engineering, and English. LBC students and faculty are benefiting from interacting with Iraqi scholars.
- LBC is a partner in the new grant from the Council of Graduate Schools to support development of student learning assessment skills in future faculty (current graduate students).
- This fall, the three residential colleges extended our collaboration into communications and faculty development. We co-produced a recruitment brochure and an alumni gathering at Homecoming. We also co-hosted a Women’s Leadership Meeting for our faculty, sponsored by the ADAPP-ADVANCE grant; the feedback from this event is inspiring further initiatives to support female faculty.
- LBC and the MSU Museum are collaborating to create vibrant displays about science and society to enliven Holmes Hall and highlight interdisciplinary scholarship by LBC faculty, staff, and students. The first examples will be in place by January; this is envisioned as the start of a continuing series.

**Curricular Initiatives: Liberal Learning, Online Courses, Leveraging HPS Expertise**

LBC is working with the Associate Provost for Undergraduate Education (APUE) to launch a 5-year pilot program this fall, assessing the benefits of having LBC students satisfy the upper-level IAH and ISS requirements through selected 300-level LBC HPS (history, philosophy, and sociology of science) courses. This would remove duplicate requirements aimed at the same liberal learning goals, encourage students to complete the focused, integrative HPS curriculum, and provide LBC students with the flexibility they seek to pursue second majors, academic minors, language studies, study-abroad and undergraduate research.

LBC will keep expanding its successful online Medical Terminology course to external audiences and will revise and reprise its online course that prepares diverse students to succeed in college-level physics classes.

In partnership with History, Philosophy, Sociology, CAL, CSS, and the Graduate School, LBC is proposing a graduate certification in HPS, open to doctoral students in the sciences as well as in history, philosophy, and sociology. This will include required (existing) courses and a unifying seminar. PHL is on board; sign-off by HST and SOC is anticipated this month; we will then submit the proposal to UCC for consideration.

LBC and the Graduate School have discussed creating a “Fellows” program to offer mentored experiences in teaching, SoTL research, and other professional development areas to doctoral students in HST, PHL, and SOC who are completing the graduate certification in HPS. Once the graduate certification is approved, planning for the Fellows program will begin in earnest.

LBC is strongly encouraging students to explore a broad array of possible STEM majors and careers (rather than focusing solely on medical school). Accordingly, LBC has joined with other units to create coordinate majors with CANR Food Science, CNS Neuroscience, CNS Actuarial Sciences and CNS Advanced Mathematics. A coordinate major with CANR Crop and Soil Sciences is under discussion. LBC’s brand-new HPS minor, which supports a broader approach to science, has enrolled its first student.
Inclusion Across the College Mission

LBC was honored to receive a 2012 MSU Excellence in Diversity Award. The citation read, in part:  
*For its outstanding and dedicated work to create a diversely rich and inclusive experience for students, Lyman Briggs College merits the Excellent Progress toward Advancing Diversity within Community Award.*

The Briggs Multiracial Alliance, LBC Inc. and the Holmes Hall OCAT aides, are continuing last year’s “Not in Our Hall” program to help the Briggs/Holmes community actively sustain an inclusive atmosphere. Successful in-hall events yielded opportunities to give presentations for the full East Neighborhood staff and the Intercultural Pillar staff of all Neighborhoods. A Briggs/Holmes MLK Day event is next on the agenda.

LBC continues to build signature programs for broadening STEM participation, increasing active learning through inquiry and community engagement, and educating students about the impact of inclusion.

- Our LMP curriculum for LBC freshmen with lower math preparation provides academic support, a peer cohort, targeted courses, and an on-ramp into the mainstream LBC STEM curriculum. With support from the Office of the Provost, LBC has expanded the integrated biology/chemistry class LB155 to include all eligible students, offered LBC sections of the algebra courses MTH 1825 and MTH 103, undertaken more curriculum development, and opened seats in the regular LBC STEM courses for the LMP students. In 2013-14 we will create new LMP sections of the Tier 1 writing course LB133, add a spring LBC section of MTH 103, and have LMP students start their mainstream LBC STEM experience in a new spring offering of LB171 (Chemistry 1), which will better fit their preparation than LB144 (Biology 1) and provide a clear path to catching up with mainstream peers by start of sophomore year.
- At the Provost’s request, LBC and EGR have submitted a joint proposal to expand EGR’s bridge program and LBC’s LMP program for at-risk students into a joint LBC-EGR program with both summer and academic-year teaching, advising, and peer cohort elements for 100 students across the two colleges.
- Our $1.2M NSF S-STEM program (2nd grant received last year!) supports and mentors students with significant financial need to persist in science majors, undertake research, and pursue graduate studies.
- Our $180k NSA REU program and our $275k NSF REU program (both in mathematics) afford students from underrepresented populations intensive research experiences that sustain their dreams of completing degrees in mathematics or related fields. A pair of grant renewal proposals are pending.

LBC’s Tenure-Stream Faculty Recruitment Plans

- In 2011-12, LBC recruited an assistant professor in Medical Sociology (75% LBC / 25% SOC) to fill a vacancy, and an assistant professor in History of Science (75% LBC / 25% HST) as a target of opportunity. Student demand for courses and research experiences in both areas made them a priority.
- In 2012-13, LBC is searching for an assistant professor in Statistics (75% LBC / 25% STT) and an assistant/associate professor in Environmental Philosophy (75% LBC / 25% FW) to fill two vacancies in areas central to the college’s teaching and scholarship. LBC and JMC are searching for an assistant professor in Culture and Health Policy (75% JMC / 25% LBC) to strengthen the research mission of the popular STEPPS specialization and enhance collaboration between the two residential colleges.

LBC’s Contingency Plans for 0.5% Budget Reduction

- The majority of the reduction would come from eliminating half of a fixed-term position; the resulting loss of two courses would impact 50-100 students per term, depending on the discipline in which the reduction had to be taken. Note that in summer 2012, LBC received enrollment funding to add course sections due to evidence of persistent need for additional sections of required courses.
- The rest of the reduction would come from eliminating part of the funding LBC received this year to provide seed funds for initial research investigations linked to forthcoming external grant proposals.

Summary and Outlook:

Lyman Briggs will continue to drive pedagogical innovation, inclusive excellence, and broader STEM participation at Michigan State University by leveraging its talented, diverse student population, its interdisciplinary faculty of teacher-scholars, and its strong residential-academic partnerships.
Flow of the LBC entering class of 2006 through MSU. The central path leads through Lyman Briggs (figures in white). The paths in different shades of green show students who transfer to other MSU colleges or leave MSU altogether (figures in those shades of green). Overall, 72% of the entering LBC freshmen graduated from MSU in STEM fields; overall 85% of entering LBC students earn MSU degrees within 6 years, with little difference by race or gender. Prepared by Prof. Ryan Sweeder and Ms. Kathleen Jeffery.