KU School of Medicine Curriculum Transformation

The faculty of the School of Medicine continues to conduct a thorough review of the curriculum as a basis for upgrading and updating educational programs. The curriculum will be transformed into a path to clinical and academic excellence through an Active, Competency-based, and Excellence-driven (ACE) educational program that provides a solid foundation for training the next generation of physicians. Graduates must become exceptionally skilled practitioners of medicine, leaders and advocates for healthcare quality and research, and prepared for lifelong learning and service.

The ACE Curriculum Committee

A  Active
C  Competency-based
E  Excellence-driven

The ACE Committee is an ad hoc faculty committee of the Education Council. In late 2014, the Faculty Council charged the Education Council to conduct a thorough review of educational programs and make recommendations for improvement.

Isaac Opole, MD, PhD, Chair

Giulia Bonaminio, PhD, Co-Chair

For a full list of committee members, please visit our website: ACE Curriculum Committee

Why Change the Undergraduate Medical Curriculum?

Since the last major revision of the KUMC medical curriculum in 2006, content audits, consultant reports, AAMC graduation questionnaires, internal surveys and the LCME self-study and re-accreditation site visit have identified the need to critically and comprehensively review and update the entire undergraduate medical curriculum. Although the overall quality of our educational program was validated by the LCME, the thoughtful suggestions for improvement offered by the site visitors convinced the faculty leaders and school of medicine deans that a top to bottom review of the curriculum was critical. Consequently, the need and desire for curricular transformation became the focal point of faculty discussions, starting with the faculty retreat in the summer of 2013, the combined module and clerkship directors' retreat, and the medical education retreat in the spring of 2014.

Physician Changes Needed to Adapt to Health Care in the Future (Adapted from AMA)

Aside from the internal drivers for curriculum transformation, forward-looking trends in medical education in a 21st-century health care systems context require an evaluation of the education process to bring greater focus on "next level" learner preparation. For example, the ACGME and the AAMC have suggested that graduates of medical schools must demonstrate core competencies and Entrustable Professional Activities (EPAs) vital to the first year of residency. In addition, our educational programs must:

- Train patient-focused, teamwork-oriented, population-minded physicians to provide expert, professional and compassionate care for individuals, groups and diverse communities and adequately handle chronic diseases.
- Train physicians with a broad understanding of the health care system as a whole.
- Prepare independent and reflective lifelong learners who can succeed in the next stage of medical education and are ultimately equipped for lifelong commitment to self-improvement in practice.
• Develop physician trainees who are confident and comfortable with the use of healthcare technology, and who can critically evaluate the appropriate and effective use of new technologies.
• Create a training program that can evolve in the context of new partnerships that support systems for longitudinal clinical training and provide integrated experiences within teams of care.
• Create a medical education program that seamlessly integrates broader healthcare systems goals of the improvement of healthcare outcomes and patient safety as well as increasing the efficiency of care delivery to large populations.
• Create a training program that promotes demonstrable competency and encourages exemplary skills in patient safety, performance improvement, and patient centered team care.

A recent NPR podcast describes these national trends in medical education.

Since the LCME visit, our faculty have identified a number of areas for enhancement, and other initiatives that will require changes to significantly transform our approach to medical education. The faculty have expressed a general consensus that the following features are key to a transformed curriculum:

• Vertical and horizontal integration, with blurring or elimination of the preclinical/clinical dichotomy
• Promotion of active, independent or self-directed learning with demonstration of competence and academic excellence
• Early engagement in substantial clinical experiences, supplemented by a robust clinical skills and simulation infrastructure
• Revised and standardized assessment, enrichment and remediation procedures that align with national standards
• Inclusion of updated and enhanced content areas, that may promote managerial, population health and research skills
• A stimulating environment that enables faculty to develop, implement and improve educational programs and develop a comprehensive array of skills as educators

Our curriculum must evolve to prepare the physician of the future, and must be adaptable, flexible and responsive to the needs of our community. With revamped medical education spaces, clinical skills and simulation facilities, we will provide new opportunities for excellence and an upward trajectory of progress that will propel our school into the top tier of medical schools in the country. Our curriculum cannot be static, but must continuously evolve, so that change and improvement become the norm.

The ACE Curriculum

Objectives and Competencies
The KU School of Medicine has a clear purpose to prepare graduates who have a solid foundation of knowledge, skills, attitudes and behaviors necessary for a lifelong career in medicine, and who are prepared for the next phase of their education as a resident. The faculty has developed and refined specific objectives toward achieving these goals, and remain committed to ensuring that graduates achieve them. As the curriculum is transformed to better prepare and track students, specific competency standards and milestones for achievement will be developed, specific skills identified, and EPAs established for each stage of learner development.

Competency: An observable, measureable ability of the professional learner to integrate knowledge, skills, values and attributes into performance.

Milestone: Behavioral descriptor of a level of performance in the course of achieving a given competency.

Entrustable Professional Activity (EPA): Units of work (professional tasks or responsibilities) that trainees can be trusted to perform unsupervised.

![Diagram of EPA](image-url)
Curriculum Components

♦ Active Learning/Self-Directed Learning
Active learning requires the student to develop skills in assessing their own learning needs and developing strategies to meet those needs. In this "graduate school" approach, the student takes responsibility for their own learning, including documenting objectives and achievements. It requires abilities in self-assessment, reflective practice and dedication to continuous improvement. A core skill-set for active learning is information mastery – the ability to identify, assess, integrate and apply valid scientific/clinical information in evidence-based practice. The ACE curriculum will incorporate active learning throughout the academic environment, including preparing faculty for changing roles in education.

♦ Clinical Skills
The clinical skills program ensures that students achieve competency in patient care skills, medical procedures and interpersonal communication. Using mock examination and procedure rooms and a cadre of standardized patients, the clinical skills program will be expanded, strengthened and integrated throughout the curriculum. Training and assessment of competency, achievement of milestones and attainment of proficiency in EPAs will be a major responsibility of the clinical skills program.

♦ Longitudinal Integrated Clinical Experiences
The current early preceptorship will be transformed into an integrated longitudinal clinical experience in which students learn and demonstrate real world abilities in acute and long-term patient care. Each student will be engaged in substantial and meaningful roles in the health care team appropriate to their stage of professional development. The curriculum will prepare students to optimize learning through clinical participation from entry to medical school. Students will be required to meet clinically-related milestones in EVERY course.

♦ Assessment and Documentation
Valid assessment and monitoring of progress facilitates the mentoring of students in the drive to excellence. It also enables early identification of issues for more focused remediation services. The ACE curriculum will utilize examination formats that include NBME and non-MCQ forms of assessment. Where appropriate, reflective papers, essays, work products and presentations will be utilized for both formative and summative assessments. Frequent testing through internally authored examinations will also occur, complemented with NBME customized examinations as part of the longitudinal assessment of students and external validation of student performance based on national standards.

♦ Simulation
Simulation is central to the development of skills required to handle real life medical situations. The School of Medicine is developing a high-quality, innovative program in clinical simulation for learners at all levels. Students will develop patient-centered skills, team-work and collaborative behaviors through interdisciplinary interactions in a "virtual health care center" housed in dedicated clinical skills facilities.

♦ Learning Communities
In 1999, the School of Medicine established Academic Societies to foster a collegial learning environment through student-student, student-faculty, and faculty-faculty interactions. Like other learning communities, the academic societies will evolve from an initial focus on learning, leadership development, and community service to a substantial role in core educational programs that promote scholarship, professional development, and collegial relationships. Emphasis will be on the promotion of professional behaviors, compassionate, patient-centered care, health practitioner well-being, and lifelong learning.

Integrated 4-Year Curriculum
The modular structure and “bright line” between the pre-clinical and clinical years have been identified as barriers to a comprehensive and integrated curriculum. The continuum of learner development from pre-matriculation, through medical school and residency to life-long, reflective practice and improvement requires seamless horizontal and vertical integration of foundational and clinical sciences. Concepts are better learned and retained in a clinical context, and the requirement for excellence in clinical practice drives the mastery and application of scientific knowledge. The ACE curriculum is an integrated hybrid format organized around clinical cases that seamlessly integrates foundational sciences as the basis for clinical practice.

Additional information, including contact information, can be found through the following:

Webpage: ACE Curriculum

E-mail: acecurriculum@kumc.edu

SharePoint site (KUMC personnel only): ACE Committee Page
Curriculum Transformation Timeline 2014-2018

The curriculum transformation process began in the spring of 2014 and will be completed in time for the matriculating class in the summer of 2017. A basic framework for the new curriculum will be ready for review by the KUMC community by the summer of 2015. Below is a graphic representation of the curriculum transformation process.

Technology

People news: During the first week of December 2014, Mark Eaton, PhD joined the School of Medicine as program director for medical education technology. Mark’s experience includes 14 years of instructional design & technology in both the healthcare information technology field and in higher education. Congratulations to Christina Magnifico who completed her Masters in Library Sciences. She was also recently recognized for her outstanding support commanding SimMan in complex scenarios during eight sessions of an inter-professional education program on Code Blue simulations.

Existing Technologies: A focus during the Spring term was to improve the performance of the wireless network and JayDocs. IR added additional wireless access points to Orr-Major to improve network speed for student portable devices. JayDocs was migrated to new servers on the hosted site. Students reported a noticeable improvement in wireless access of content in the learning content management system.

Projects: The technology team in collaboration with Jim Fishback, MD, and IR, launched a number of initiatives to discover how Office 365 and OneNote online may help with Histopathology Lab Protocols. Class notebooks are being created that include a collaboration space for student groups, read-only interactive reference and presentation materials, and private student notebooks, atlases, and/or portfolios.

Match Day 2015

On March 20, students and their families gathered on the Kansas City, Salina and Wichita campuses to discover where they will complete their residencies. The day was particularly special in Salina as it marked the first Match Day since welcoming students into it’s first four-year program in 2011. Match Day occurs each year on the third Friday in March for all LCME-accredited medical schools in the United States and Canada.

Hooding and Commencement Ceremonies

The Hooding and Awards Ceremony for doctor of medicine candidates was held on May 16, at Soldiers and Sailors Memorial Hall in Kansas City, Ks. Commencement ceremonies took place on May 17 at Memorial Stadium in Lawrence. Congratulations to our graduates!
Clinical Skills

Standardized Patients: Who are these mysterious people?

Standardized Patients, or SPs, are used extensively at KU, as well as at many other Medical and Nursing schools around the country. Who are these interesting people, where do we find them and why do they do this?

The Neis Clinical Skills Lab at KUMC provides over 11,000 SP encounters per year for medical students. This is only possible with the help of committed SPs who willingly spend their time assisting in student education.

SPs come from a wide variety of backgrounds. Some are students themselves. Some are retired individuals who have time available and enjoy being with people. Many are professionals, including educators, nurses and attorneys. Others are self-employed and can make time to give to our programs. Some are parents who stay at home to help raise their children and can participate during the day. They all believe in the experiences our programs provide for students.

We are very fortunate to have a wide range of contacts in our SP database. We have individuals from communities all over the metropolitan area. We have connections with theater groups, fire departments, community centers and school districts. SPs talk up what we do all over town. Through people we know and people who know us, there is a wide variety of people from which to choose.

A great SP needs to be committed to educating students. SPs must be excited to help others and be able to portray a role as realistically as possible. SPs get involved and stay involved because they understand the impact that sharing experiences and providing feedback has on student education. They offer insight and guidance, both scripted and personal, so students can more easily relate to real patients. It’s through practice that students become comfortable and proficient with the medical interview and clinical skills.

The SP Program is always looking for individuals interested in participating. For more information, visit the Neis Clinical Skills webpage.

Phase I

The Phase I committee’s charges include the review of modules and “consideration of issues related to the delivery of education” (KUMC by-laws). The Phase I committee has been engaged primarily in these activities over the past year. Several modules are subject to their quadrennial comprehensive review, the committees chaired by Phase I members. In addition, at the completion of each module, the director completes a summary report of the module which is reviewed, in combination with student evaluations, during the committee meeting. Often these reports reveal general issues of concern, requiring examination by the Phase I committee. For example, deliberations related to uneven grade distribution, allocation of points among learning activities and summative exams, and student satisfaction with different types of learning activities, arose from end-of-module reports. Issues related to assessment of student performance are a perennial topic of discussion; the quality of summative exam items has been a focus of the Phase I director, Dr. Doolittle, who is taking active steps to improve item writing among faculty. The Phase I committee has also provided critical feedback regarding the comprehensive MD curriculum revision (“ACE” revision) slated for 2017. In conjunction with this, plans for the new Health Education Building have been presented and feedback solicited.

Phase II

This year’s 3rd- and 4th-year classes will experience several changes. The School of Medicine will roll out a new evaluation system, OASIS (Online Access to Student Information and Scheduling) to replace the current 3rd- and 4th-year evaluation system, E-Value. OASIS will be linked to the Enroll and Pay enrollment system and be used in all four years of the curriculum and on all three campuses. The Office of Medical Education has been integral in the search, development, training, and support of OASIS, working closely with each clerkship to make the transition as seamless as possible. The school piloted the system in three of the 3rd-year clerkships in Kansas City and Wichita. All 3rd-year clerkships implemented OASIS in June, 2015.

The ICM 900 (Issues in Clinical Medicine) course began earlier this year. The course focuses on ethics education and professional development, beginning with new educational content exposure to the learning environment.
Wichita

News from Wichita: Inaugural First-Year Class Graduating
by Dennis Valenzeno, PhD, Chair and Associate Dean for Medical Sciences, Wichita

Nearly four years ago eight excited and adventurous new medical students accepted the opportunity to become part of the inaugural first-year class on the Wichita campus of KUSM, a new initiative for this 40-year-old campus. Now, thanks to the efforts of faculty, staff and administrators in Wichita, Salina and Kansas City, the first two years of the curriculum are smoothly functioning, and that inaugural group, the "Great Eight Pioneers," are poised to graduate. You can see their story in a short video at https://www.youtube.com/embed/xdIQkkGwu-U.

Medical Students Pilot a Case-Driven Curriculum on the Wichita Campus: Can a curriculum with no lectures really work? Six rising second-year medical students and one entering medical student piloted an eight-week lecture-free medical curriculum on the Wichita campus this summer. While faculty were present for problem-based learning (PBL) sessions, they did not comment on the content of the cases, leaving students the primary responsibility for knowledge acquisition. A different clinical case was featured in three of the eight weeks. As students learned more about each case, they developed learning issues to research for their next PBL session at which they presented their findings to their peers. A wrap-up session at the end of each of these weeks included a patient exhibiting the condition examined during the week. In addition to clinical cases, each student developed a 9- to 12-page report on how to apply a current medical education issue in the Case-Driven Curriculum. Topics included application of adult learning theory, assessment, and implementation of interprofessional education. Students also participated in innovative formative and summative exercises, creating group peer assessments, participating in triple jump exams, and completing objectives through the use of quizzes and faculty observation. The results of the pilot course were presented in a new digital format at the Association of American Colleges Annual Meeting in Chicago. Posters were shown on large plasma displays in the exhibit hall.

Becoming a Resident Teacher – 4th Year Elective: Starting in the fall of 2015 KUSM students will be able to participate in a new elective, Becoming a Resident Teacher. Stephen Charles (Director) and Gerard Brungardt (Co-Director) led a subcommittee from the Medical Education Research Interest Group (MERIG) to create the course. The elective will be piloted on the Wichita campus and then will expand to all KU campuses. It seeks to develop and refine medical students’ teaching skills prior to residency. The ACGME requires residents to teach and evaluate medical students. Now, KUSM students have an opportunity to acquire the needed skills in an organized course.

Salina

The Salina campus, billed in a New York Times article as "the smallest in the nation to offer a full four-year medical education," also saw its inaugural first-year class graduate in May. As these graduates prepare for residency, Salina is preparing for the next first-year class, having already received their student list for the class of 2019.

The campus is completing development of its simulation lab, made possible by a grant from the Dane Hansen Foundation in Logan, Kansas. The medical education building, the Bradick Building, is also undergoing renovations that include remodeling office space, developing a student resource and group study center, as well as creating the simulation lab.

Health Education Building Update

The Medical Center will break ground on the new Health Education Building (HEB) at 11 am on August 27, 2015. The anticipated date of completion is July, 2017.
Directors and Administrators Retreat

On April 24, faculty from the Kansas City, Wichita and Salina campuses met in Salina for the annual Combined Directors Retreat. Dr. Simari provided the opening remarks followed by a presentation by Dr. Giulia Bonaminio and Dr. Isaac Opole detailing the progress of the new curriculum planning process. A discussion session followed that included topics such as clarifying education program objectives, measuring student achievement, and integrating content across all modules and phases of the curriculum. Following lunch, the graduating fourth-year students presented projects from their “Population Health in Practice” course. The retreat concluded with a small group exercise in which participants identified benefits and challenges of the new curriculum.

18th Annual Medical Education Retreat

On June 4, the School of Medicine faculty and staff gathered in the Beller Conference Center for the annual medical education retreat. Prior to the start of the retreat, attendees had the opportunity to view posters presented by the current Medical Alumni Innovative Teaching Fund (MAITF) recipients. Dr. Bonaminio began the lunch session with welcoming remarks followed by Dr. Simari’s announcement of the 2015 Bohan Teaching Award Recipients. This year’s recipients are Gary Doolittle, MD, Professor in the Department of Internal Medicine, and Dan Swagerty, MD, Professor in the Department of Family Medicine.

This year’s guest speaker was Robert Englander, MD, MPH, former Senior Director of Competency-based Learning and Assessment at the AAMC. Prior to his role at the AAMC, Dr. Englander was Senior Vice President for Quality and Patient Safety at the Connecticut Children’s Medical Center and Professor of Pediatrics at the University of Connecticut School of Medicine. Dr. Englander discussed the value and significance of competency-based learning and assessment in preparing future physicians. Dr. Englander later led participants in a workshop to examine how Entrustable Professional Activities play an important role in undergraduate medical education.

Following the workshop, Dr. Isaac Opole provided an update on the ACE curriculum planning process. A reception followed in the School of Nursing Atrium.

2015 IAMSE Meeting

The KU School of Medicine was well-represented at this year’s International Association of Medical Science Educators (IAMSE) conference held June 13-16, in San Diego, including six faculty members whose attendance was sponsored by The Academy of Medical Educators (AME). Faculty presenters included:

- Giulia Bonaminio: Focus Session
  "Remediation in an Integrated Preclinical Curriculum"
  (with Nagaswami Vasan, Nehad El-Sawi)

- Giulia Bonaminio: Focus Session
  "Leading Curriculum Management for Local Needs and the International Curriculum Inventory"
  (with Terri Cameron, Susan Masters, Colleen O’Connor Grochowski)

- Stephen Charles, Thomas Kluzak, Scott Moser: Focus Session Speakers
  “A Lecture Free Curriculum: Is it Possible?”
  (research was supported by an MAITF grant)

- William Cathcart-Rake, Michael Kollhoff & Chris Owings: Poster
  “Transitioning To Clerkships: An Innovative Longitudinal Approach To Bridge The Gap”
  (research was supported by an MAITF grant)

- Jessica Newman, Anthony Paolo & Wolfram Zueckert: Poster (Poster Award Nominee)
  “ID Roundlets: Transporting a Time-Honored Medical Tradition to the Preclinical Classroom”
  (research was supported by an MAITF grant)

- Michael Parmely: Poster
  “Training the Next Generation of Health Science Educators within a Predoctoral Program”
KU Medical Alumni Innovative Teaching Fund (MAITF) Recipients
2015-16

Management of the Hospitalized Delirium Patient by Fourth-Year Medical Students
Heather Anderson, M.D.
Department of Neurology, Kansas City

Learning Together to Work Together, 2.0 (LTWT 2.0): Using Validated Rubrics to Quantify Interprofessional Team Dynamics
Shelley Bhattacharya, D.O., M.P.H.
Department of Family Medicine, Kansas City

Improving Precision of Preceptors’ Grading of Students in Clerkships
Nancy Davis, Ph.D.
Department of Family and Community Medicine, Wichita

Incorporating CT Scan Images into Human Anatomy Lab Dissections
George Enders, Ph.D.
Department of Anatomy and Cell Biology, Kansas City

Fostering Independent Learning: Use of a Case Based Curriculum for Third Year Medicine Clerkship
Jennifer Fink, M.D.
Department of Internal Medicine, Kansas City

Effective and Feasible Procedural Skills Training for Medical Students: Instructional Video with Self-Directed Deliberate Practice versus Hands-on Simulation-based Training with Expert
Robert McKay, M.D.
Department of Anesthesiology, Wichita

Language Immersion at Home: Development, Implementation and Evaluation of a Medical Spanish Clinical Elective during the Pediatrics Clerkship
Mark Meyer, M.D.
Department of Family Medicine, Kansas City

Development and Evaluation of Psychiatry Review Sessions for Third Year Medical Students
Cheryl Wehler, M.D.
Department of Psychiatry, Wichita

University of Kansas Residents as Teachers Scholars Program
Carrie Wienke, M.D.
Department of Obstetrics and Gynecology, Kansas City

Year 1 and Year 2 classes begin July 27.
Year 1 orientation: July 20-24.
For more information, please view the Phase I Academic Calendars.

Kansas Connections, a quarterly newsletter published by Rural Health Education and Services at KU Medical Center, features stories about health care and job opportunities in rural Kansas.