Jacobs School of Medicine and Biomedical Sciences at University at Buffalo

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Medical Education Program Highlights

- A new medical school built in downtown Buffalo as part of the Buffalo Niagara Medical Campus: The educational program at the University at Buffalo Jacobs School of Medicine and Biomedical Sciences (Jacobs School) has undergone significant change over the last 10 years, highlighted by the relocation of the campus to downtown Buffalo. The new education and research building is an 8-story, 628,000-square-foot, $375-million, state-of-the-art medical school that opened for classes in January 2018. This addition completed the urban downtown medical campus, which also includes the recent openings of the 170,000-square-foot, state-of-the-art Clinical and Translational Research Center (CTRC) in 2012, which is adjacent to Buffalo General Medical Center (Kaleida Health). As a joint venture between the University at Buffalo and Kaleida Health, the CTRC provides a centralized facility for the Clinical and Translational Science Institute. The University at Buffalo and Kaleida Health partnered to build the facility that houses the CTRC (which occupies floors 5 through 8) and the Gates Vascular Institute (floors 1 through 4) and serves as the centerpiece of the NIH-sponsored Clinical and Translational Science Award grant, which concentrates on health disparities and innovative ways to address these issues. Completion of the Conventus Medical Office Building (opened in March 2017) provided additional outpatient clinical and administrative space, which is joined with the Oishei Children’s Hospital (opened in November 2017). These new structures joined the Buffalo General Medical Center and the Roswell Park Comprehensive Cancer Center to create a truly urban academic medical center in the heart of Buffalo.

- New facilities allow for greater use of active learning: The new Jacobs School building allows for a greater use of active learning, with designs that facilitate small-group discussion, including a 216-seat, 24-table, active learning room for team-based, case-based, and problem-based learning formats and their hybrid formats. Multiple small-group learning rooms are available, and the building incorporates informal learning spaces called “learning landscapes” on each floor to promote collaboration. The location in the downtown district accentuates service learning projects in the area, including the Lighthouse Free Medical Clinic (a student-run outpatient medical clinic) and the UB Heals program, which provides medical attention and outreach to our homeless populations in Buffalo.

- Campus-wide interprofessional forums: We are especially proud of our 10-school coordinated interprofessional educational forums in the fall and spring that bring together around 600–750 students each semester from the Schools of Public Health and Health Professions (occupational therapy, exercise and nutritional sciences, community health and health behavior, and physical therapy), School of Dental Medicine, School of Social Work, School of Pharmacy and Pharmaceutical Sciences, Jacobs School of Medicine and Biomedical Sciences, School of Nursing, School of Law, and School of Management. Integrated small groups of 6–9 students are brought together to learn about, and from, other specialties in separate forums dealing with the opioid crisis and the management of physical and mental health concerns during the treatment of chronic diseases. Students learn the scope of practice of different professionals and how they can add to the care of a health care team.

- Redesign of the medical curriculum and the establishment of the Medical Education and Educational Research Institute (MEERI): Over the last 3 years, the Jacobs School has produced 5 strategic plans: medical education, clinical practice, research, interprofessional education, and diversity. While all 5 strategic plans are active, the medical education strategic plan has made particular strides. Goal 1 of this plan calls for the redesign of the medical curriculum. To effectively deliver on goal 1, faculty need to be educated on the most effective ways to deliver that goal. Therefore, goal 2 created MEERI, which is geared toward faculty development to best deliver our current and new curricula. We recently recruited Dr. Jennifer Meka, PhD, to direct this institute.

Curriculum

Curriculum description


Curriculum changes since 2010

The Jacobs School has changed to a pass/fail grading system in the preclinical years, beginning in 2019. After thorough review and discussion in the Curriculum Committee and dialogue at open school forums, the Curriculum Committee approved the implementation of a pass/fail grading system in Phase 1 of the curriculum. Numeric grades are maintained in the background for use in Alpha Omega Alpha Honor Medical Society selection and letters of commendation for excellence in academics. A tiered grading system (honors/high satisfactory/satisfactory/unsatisfactory) remains for the clinical years (Phase 2).
The curriculum of the school has continued to evolve over the past decade with expansion of the Office of Medical Curriculum and the Office of Student and Academic Affairs. A more robust review process has been in place for the last 5 years, with improvement in student evaluations and quality metrics in the Graduation Questionnaire. This work has been greatly assisted through the creation of the new Office of Accreditation and Quality Improvement and continuous monitoring of the LCME Standards and Elements.

**Class size changes since 2010**

The Jacobs School increased its class size from 144 to 180 students for the entering class of 2017. The entering class of 2020 will bring the school to its full 720 student enrollment across all 4 years. The new medical school building was crucial in accommodating this increased student population.

**Assessment**

Our medical education program objectives are based on the AAMC Physician Competency Reference Set.


We have increased the use of standardized patients and simulation over the last decade. An integrated curricular thread has been developed for patients with disabilities using real patients and their caretakers. Increased use of OSCEs and a longitudinal OSCE have been implemented across the curriculum.

**Pedagogy**

The design of the new Jacobs School enables us to use a full array of teaching pedagogies. We have increased the use of team-based learning, small- and large-group discussion, case-based learning, problem-based learning, and other forms of active learning. Students are required to attend all small-group sessions using active learning techniques. Flipped classroom approaches include the use of short videos and podcasts for preparation. Lecture attendance is highly recommended, but all lecture sessions are recorded and available by streaming and download with speech-to-text indexing for rapid retrieval.

Over the last decade, the use of active learning principles has increased and the total number of lecture hours has decreased.

**Clinical experiences**

- Students are active participants in clinical activities shortly after the start of their first year. This occurs during the Clinical Practice of Medicine course where they meet weekly with preceptors or in small-group sessions to develop their skills as physicians, both from a scientific understanding of health, disease, and pathophysiology and as empathic physicians in the clinical context. The new 18-station Clinical Competency Center, with audio and visual recording capacity, and the Behling Simulation Center give students experience using standardized patients and human patient simulators to learn the skills necessary for patient encounters in a controlled setting.
- The clinical sites available to the Jacobs School include acute care hospitals (including a National Cancer Institute Comprehensive Cancer Center), a county hospital with a Level 1 trauma center and burn center, and both urban and community hospital locations. A newly constructed pediatric hospital is part of the Buffalo Niagara Medical Campus (BNMC). Clinics are based in both hospital and private settings as well as the Conventus Office complex on the BNMC. The school also has a significant number of required and elective rotations at the VA hospital, which also serves as a site for summer student research projects.
- We have increased our full-time faculty and have also increased our engagement with volunteer faculty to provide additional clinical training sites for our expanded number of students.

**Curricular Governance**

The Curriculum Committee manages the integration of the curriculum across all 4 years of medical education. Membership includes both administrative members and members elected by Faculty Council, with the senior associate dean for medical curriculum and a Faculty Council elected member as cochairs of the committee. Student members include 2 representatives of the Organization of Student Representatives (AAMC) and 1 class member from each class year who are elected by the student body. One MD–PhD student is also elected by their peers. The director of MEERI and the medical librarian are also members of the committee.

Permanent subcommittees of the Curriculum Committee are the Phase 1 Committee, composed of course directors of all the Phase 1 courses and student members, and the Phase 2 Committee, composed of course directors for the required clerkships in the clinical years. Students are also an integral part of the Phase 2 Committee as well.

Brief course reviews are completed annually by the Office of Medical Curriculum and presented to the Curriculum Committee, and triennial course reviews are performed by ad hoc review committees composed of Phase 1 and Phase 2 faculty members and a student who has completed the course under review.

**Education Staff**

The Offices of Medical Education includes both the Office of Medical Curriculum and the Office of Student and Academic Affairs. The Office of Medical Curriculum consists of a senior associate dean for medical curriculum and 3 associate deans for medical curriculum. A senior curriculum coordinator and 2 curriculum coordinators provide support for delivery, monitoring, and management of the Phase 1 curriculum and also assist with the Phase 2 curriculum. The Office of Student and Academic Affairs has a senior associate dean, 2 associate deans, 1 student services coordinator, and 1 assistant dean of student and academic affairs. This office deals with academic
support, career advising, opportunities for research, and school counseling. The recently formed Office of Accreditation and Quality Improvement provides monitoring and support for the curriculum and is staffed by a director of the Office of Accreditation and Quality Improvement and a senior program administrator. The school offers onsite counseling and school-sponsored psychiatric services at no cost to students.

GME and CME are handled out of separate offices.

See Figure 1—Medical education leadership.

**Faculty Development and Support in Education**

The Jacobs School recently established MEERI for the purpose of professional development of faculty. The institute offers personalized sessions for curricular content as well as workshops and conferences for faculty development in the areas of education, developing teaching and instructional design skills, and educational research. The Jacobs School also partners with the Graduate School of Education to enhance the scope of the program and is developing a Masters in Education with specialization in medical education in conjunction with the graduate school.

**Teaching academy**

MEERI functions as an academy for our medical educators and oversees the advancement of medical education at the Jacobs School. Faculty from the Jacobs School, both Phase 1 and Phase 2, have access to the expertise of the institute, as do residents in the graduate medical education program. MEERI also works to promote scholarship in medical education and peer support, as well as career advancement and recognition for medical educators.

**Initiatives in Process**

The school has begun a major curricular revision that will be fully implemented with the entering class of 2022. The process began in 2018 with a comprehensive revision of the medical education program objectives, followed by a curriculum retreat involving faculty, students, staff, community representative, hospital partners, and other members of the university community.