

Katz School of Medicine

Academic Program Student Learning Outcomes

Program Description	Program Degree	Student Learning Outcomes
BIOMEDICAL SCIENCES	PHD	Ability to critique the scientific literature Interpretation of experimental data
		Oral presentations in classroom Oral presentation to thesis advisory committee Preparation of Abstract (biannual) Completion of thesis Oral defense of thesis research Preparation and submission of scientific manuscripts(s).
		Generate a hypothesis Plan and complete an original research project
BIOMEDICAL SCIENCES (non-thesis)	MS	Understand the strengths and weakness of published data.
		To be able to clearly and effectively communicate
		Appreciate the scientific method from both classroom and experimental perspectives.
BIOMEDICAL SCIENCES (thesis)	MS	Students participate in journal clubs whereby published papers are discussed and critiqued Students orally present research articles in a number of the courses in the curriculum. Students prepare a seminar on a subject independent of their research, selecting and reviewing data to support their subject.
		Students present a 45 minute seminar once in the fall semester. Students enroll in Scientific Communication (BMSC 8202) gaining experience in written and oral communication. the also receive instructor and peer critiques. Students present papers in several of the courses in their specific track. Students present a laboratory research review in the spring (2nd) and fall (3rd) semesters to their thesis advisory committee. Students defend their thesis research project in the 4th or 5th semester.
		Students develop a hypothesis for their thesis research. Students develop an understanding of the literature. Students plan and execute experiments to test the hypothesis. Students form conclusions and propose future experiments to be conducted. Students place their findings within the context of the body of literature and understanding.

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MEDICINE	MD	<p>LKSOM graduates must demonstrate a broad working knowledge of the scientific underpinnings of medicine, the social and societal factors affecting the practice of medicine, and the application of evidence-based knowledge to clinical problem-solving and patient care. Graduates must demonstrate continual engagement in self-directed and independent learning and reflective evaluation to remain current in their knowledge necessary for clinical practice. Students must demonstrate knowledge of: 1) The normal structure and function of the human body throughout the life cycle, including the molecular, biochemical, and cellular mechanisms important in maintaining the body's homeostasis, 2) Diseases, including their causes and effects on the human body, 3) Health maintenance, the prevention of disease and injury, and the promotion of wellness in the care of individual patients, their families, and the community, as well as the mechanisms of disease and injury, treatment and amelioration of pain and suffering, 4) How factors such as age, gender, ethnicity, sexual orientation, functional limitations, languages, belief systems, and socioeconomic status affect health, wellness, and medical care of a diverse patient population, and systematic approaches to reduce the burden of these diseases, and 5) Basic principles and ethics of clinical and translational research and how such research is conducted, evaluated, applied, and communicated in the care of patients.</p>
		<p>LKSOM graduates must be able to demonstrate the ability to provide patient-centered care that is evidence-based, compassionate, effective, cost-efficient and appropriate for the promotion of health and wellness and the treatment of health problems. Students must demonstrate the ability to: 1) Obtain both a focused and comprehensive medical history and perform an appropriately focused and thorough physical and mental status examination in a respectful manner, 2) Develop a differential diagnosis for patients with common acute and chronic clinical conditions, 3) Construct appropriate management strategies aimed at improving wellness in treating patients with common acute and chronic conditions, including the interpretation of clinical data and treatment modalities, 4) Acquire the technical skills to perform common medical procedures, 5) Provide both written documentation and verbal communication that is effective, organized, timely and logical, 6) Incorporate the findings of emerging research into clinical decision-making and problem-solving, and 7) Understand and practice the components of safe transition of care.</p>
		<p>LKSOM graduates must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families and all health care professionals. Students must: 1) Demonstrate the ability to interact and communicate respectfully, effectively and empathetically with patients, their families, all health care professionals, and the public across all ages, gender, socioeconomic and cultural backgrounds and to address issues in a sensitive, compassionate, and non-judgmental manner and 2) Effectively communicate scientific and medical knowledge to patients to enable health understanding, health care decision-making and health literacy.</p>

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MEDICINE (CONT'D)	MD (CONT'D)	<p>LKSOM graduates must demonstrate professionalism, which embodies the responsibilities of a physician that go beyond knowledge and technical skills related to the delivery of health care. This includes honesty, trust and mutual respect while maintaining patient confidentiality and a commitment to the welfare of patients. Students must demonstrate the ability to: 1) Maintain emotional, physical, and mental health wellness; a professional image; and, pursue continual personal and professional growth, 2) Maintain personal motivation, compassion, reliability, integrity, and honesty in all interactions with patients, their families and all healthcare professionals, 3) Maintain responsiveness to patient needs that supersedes self-interest and to serve as a healthcare advocate for individual patients and all patient populations, 4) Understand and commit to ethical and legal principles in all aspects of patient care, including beneficence, justice, confidentiality, privacy, informed consent, and patient autonomy, 5) Demonstrate an awareness of, and sensitivity to, diversity among patients and colleagues, providing effective care that respects individual differences and using strategies to assess and mitigate one's own potential biases, treating all patients in a non-judgmental manner and 6) Recognize their abilities and limitations, participate in ongoing self-assessment, actively seek and respond to feedback, and continuously strive to improve patient care.</p> <p>LKSOM graduates must demonstrate the ability to recognize their role as patient care providers within the greater context of the healthcare system, committing to lifelong learning and professional improvement, including honest and thoughtful self-evaluation, team-based collaboration and analysis of clinical practice and outcomes within the framework of standards of care and best practices as defined by scientific evidence. Students must demonstrate the ability to: 1) Pursue opportunities to acquire new knowledge and skills that can be applied to patient care, 2) Improve patient care by thoughtful analysis of their own patient population and pertinent characteristics of the communities where their patients live as well as the ability to apply scientific evidence to improve patient care and reduce medical errors, 3) Understand the appropriate roles of technology and information management in both education and patient care, and 4) Facilitate the education of the healthcare team and utilize constructive feedback to enhance patient care.</p>

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MEDICINE (CONT'D)	MD (CONT'D)	<p>LKSOM graduates must demonstrate knowledge of the structure and function of the multiple healthcare systems and all health professions engaged in the provision of care at both a patient and community level and demonstrate the ability to use appropriate system resources and best practices to provide optimal patient care. Students must demonstrate: 1) The knowledge of their own role, as well as the roles of other healthcare professionals in the delivery of patient care and the ways in which they collaborate in the care of both individuals and communities, 2) The knowledge of healthcare economics and the major organizational models of healthcare delivery and their role in controlling healthcare costs and allocating resources, 3) The ability to practice cost effective healthcare and resource utilization while maintaining a high quality of patient care, including those times when patients are unable to access healthcare, 4) An awareness of the complexities of medical practice with regard to ethical and legal issues and their impact on clinical decision-making, 5) An understanding of the use of quality improvement and patient safety in assuring effective, patient-centered, timely, and equitable care, while avoiding harm to patients.</p>
		<p>LKSOM graduates must demonstrate the ability to practice within an interprofessional team to provide safe and effective patient care and demonstrate the ability to integrate knowledge of their own role and the roles of other healthcare providers in a shared leadership model to provide exemplary patient care. Students must demonstrate the ability to: 1. Work collaboratively with other healthcare professionals and maintain a climate of mutual respect, dignity, diversity, ethical integrity, and trust. 2. Use the knowledge of their own role and the roles of other healthcare professionals to address the healthcare needs of the patients and populations served.</p>
MEDICINE COMBINATION	MD/PHD	<p>MD/PhD students meet all of the learning outcomes for the MD and Biomedical Sciences PhD Program. These are managed by each of the two programs. In addition, MD/PhD students are trained specifically in translational research/medicine. There is a focus on understanding how to integrate basic and clinical research into the practice of medicine. Specifically, how to take findings learned in the laboratory and bring them to the bedside in patient care. Students participate in a MD/PhD specific seminar series throughout their time in the program where this is the main topic of discussion. This seminar integrates MD and PhD training with a translational focus using seminar presentations from faculty, advanced students in the program and outside visitors. In addition, students in years 1-5 of the program prepare in a small group a MD/PhD Grand Rounds presentation mentored by a physician/scientist faculty member focusing on a timely clinical condition and the translational research ongoing in that area. Finally, students in years 1 and 2 meet with their temporary advisory committee each year to review their summer research rotations and choice of faculty mentor for the PhD training years in the program (years 3 to 5/6).</p>

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PHYSICIAN ASSISTANT	MMS	<p>1. Knowledge of the normal anatomical structure and function (physiological and psychological) of the human body as a whole and of each of its major organ systems, throughout the life cycle, to include developmental (infancy and adolescence) and aging processes</p> <p>2. Knowledge of the various causes (genetic, developmental, metabolic, toxic, microbiologic, immunologic, neoplastic, degenerative, psychological and traumatic) of disease and the ways in which disease affects homeostasis (pathogenesis)</p> <p>3. Knowledge of the altered structure and function (pathology and pathophysiology) of the body and its major organ systems that occur in clinically and pathophysiologically important diseases and conditions</p> <p>4. Knowledge of the basic mechanisms of pharmacologic and non-pharmacologic modalities employed in the prevention and treatment of disease and amelioration of pain and suffering</p> <p>5. Knowledge of the economic, psychological, occupational, social, and cultural factors affecting health and illness</p> <p>6. Knowledge of the epidemiology of common illnesses and the systematic approaches useful in reducing the incidence and prevalence of those illnesses</p> <p>7. Knowledge of disease and injury prevention practices in the care of individual patients and their families, and the community</p> <p>8. Knowledge of the various types of family planning and their potential impact on the patient, the family and society</p> <p>9. Knowledge of the physical and psychological aspects of aging and dying and a commitment to support and appropriately counsel patients and their families</p> <p>10. The ability to describe the principles and application of evidence-based medicine in establishing the causation of disease and therapeutic efficacy of treatment</p> <p>11. The ability to recognize how factors such as age, gender, ethnicity, sexual orientation, functional limitations, languages, belief systems, and socioeconomic status impact health, perceptions of well-being and medical care of culturally diverse and medically underserved populations</p> <p>12. Knowledge of the forms and value of complementary medicine as employed in the treatment of disease</p> <p>13. The ability to recognize the impact of chronic disease and disability on a patient's ability to function in society</p> <p>14. Knowledge of the basic principles and ethics of clinical and translational research, and how such research is conducted, evaluated and applied to the care of patients</p>

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PHYSICIAN ASSISTANT (CONT'D)	MMS (CONT'D)	<p>1. Provide health care services aimed at maintaining health and well-being, and treating patients with acute and chronic conditions 2. Obtain an accurate, comprehensive medical history that respects individual differences, as it relates to the patient's health status 3. Communicate clearly; verbally, in writing, and electronically with patients, patients' families, and colleagues 4. Conduct a thorough and accurate physical and psychiatric evaluation in patients of all ages 5. Perform routine technical procedures 6. Interpret and integrate clinical data, including laboratory, radiology, and pathology studies 7. Reason deductively in solving clinical problems 8. Construct appropriate management strategies (both diagnostic and therapeutic) for patients with common acute and chronic conditions; including medical, psychiatric, and surgical conditions, those requiring short and long-term rehabilitation, and those with serious conditions requiring critical care. 9. Appropriately relieve pain and ameliorate the suffering of patients 10. Incorporate the findings of emerging clinical and translational research into clinical decision-making and problem-solving, and be able to explain how the findings apply to patient care</p> <p>1. The ability to interact and communicate respectfully, effectively and empathetically with patients, their families, and the public; across all ages, socioeconomic and cultural backgrounds 2. The ability to address sensitive health care issues in an effective, compassionate and non-judgmental manner, including screening for alcohol and substance abuse, domestic violence, sexual behavior and delivering bad news 3. The ability to communicate scientific and medical knowledge to help educate patients about their health, and health care decisions and ensure adequate understanding 4. Effective communication and collaboration with other members of a multidisciplinary health care team 5. The ability to communicate accurate patient information verbally, in writing or electronically to colleagues and healthcare workers</p>

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PHYSICIAN ASSISTANT (CONT'D)	MMS (CONT'D)	<p>1. Demonstrate personal motivation, compassion, reliability, integrity, and honesty in all interactions with patients, families, colleagues and other healthcare professionals 2. Demonstrate responsiveness to patient needs that supersedes self-interest 3. Demonstrate understanding of, and commitment to, ethical and legal principles in all aspects of patient care, including beneficence, justice, confidentiality, privacy, informed consent and patient autonomy 4. Understand legal and regulatory requirements including the appropriate role of the physician assistant 5. Demonstrate awareness of, and sensitivity to, diversity among patients, providing effective care that respects interpersonal differences in age, ethnicity, cultural beliefs, socioeconomic status, sexual orientation and spirituality 6. Maintain professional relationships with physician supervisors and other health care providers 7. Serve as a healthcare advocate for individual patients and all patient populations 8. Recognize their abilities and limitations, participate in ongoing self-assessment, actively seeking and responding to feedback, and continuously striving to improve patient care and patient-centered interactions 9. Demonstrate attentiveness to professional and medical errors and work to reduce such errors in all aspects of patient care 10. Maintain a professional image in behavior and attire, demonstrating respect for the patient and the environment in which the patient care is given 11. Engage in independent learning to stay abreast of the scientific advances, relevant to the current practice of medicine and emerging technologies</p>
		<p>1. Awareness of strengths, deficiencies and limits in knowledge and skills 2. Ability to set goals and pursue opportunities to acquire new knowledge that can be applied to patient care 3. The skills to improve patient care by thoughtful analysis of their own patient population and pertinent characteristics of the communities from which their patients derive 4. The ability to identify and apply epidemiologic, statistical and scientific evidence towards the effectiveness and practicality of diagnostic and therapeutic modalities with the goal of improved quality of patient care 5. The appropriate roles of technology and information management in as it pertains to both education and patient care 6. The skills to work in a multidisciplinary team that incorporates parallel and synergistic professions working toward the same goals. 7. The ability to give and receive constructive nonjudgmental feedback from/to all sources, designed to enhance patient care and the function of the team 8. Use of knowledge and communication skills to facilitate the education of patients, families, trainees, peers and other health care professionals Systems-Based Practice</p>

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PHYSICIAN ASSISTANT (CONT'D)	MMS (CONT'D)	<p>1. Demonstrate awareness of how their patient care and other professional activities affect other health care professionals, the health care organizations in which they work, and to society, at large, and how these elements affect their own practice</p> <p>2. Demonstrate knowledge of, and respect for, the roles of other healthcare professionals, and the ways in which they may collaborate in the care of both individuals and communities</p> <p>3. Describe the major organizational models of healthcare delivery, including the ways in which such models are important in controlling health care costs and allocating resources</p> <p>4. Practice cost effective health care and resources while maintaining a high quality of patient care</p> <p>5. Identify and use resources and ancillary health care services for all patients, including patients facing barriers to access to health care</p> <p>6. Demonstrate an awareness of the complexities of medical practice with regard to ethical and legal issues</p>
URBAN BIOETHICS	GRAD	<p>Apply the urban bioethics toolbox to students' respective disciplines (research, administration, clinical care, academics, other) as an aid in crafting more equitable research or administration plans, lowering moral distress, contributing to the literature, or in another way based on the students' particular career.</p> <p>Recognize, analyze, and make ethical arguments.</p> <p>Read or otherwise become familiar and conversant in the foundational texts and/or legal or medical cases from the field of bioethics.</p> <p>Gain an understanding of a range of critical social science methodologies and appreciate their strengths and limitations for bioethics' related research.</p>
URBAN BIOETHICS	MA	<p>Read or otherwise become familiar and conversant in the foundational texts and/or legal or medical cases from the field of bioethics.</p> <p>Recognize, analyze, and make ethical arguments.</p> <p>Gain an understanding of a range of critical social science methodologies and appreciate their strengths and limitations for bioethics' related research.</p> <p>Apply the urban bioethics toolbox to students' respective disciplines (research, administration, clinical care, academics, other) as an aid in crafting more equitable research or administration plans, lowering moral distress, contributing to the literature, or in another way based on the students' particular career.</p>