

UMKC School of Pharmacy



2016 Annual Report

Letter from the Dean

Dear Colleagues,

This report summarizes activities and accomplishments of the UMKC School of Pharmacy in 2016, thereby documenting the numerous successes of our students, staff, and faculty. In addition, this report demonstrates the significant progress towards the achievement of the School's Goals and Objectives detailed in our 2015–2020 Strategic Plan.

The UMKC School of Pharmacy continued to bring prestige and international visibility to UMKC and the University of Missouri System. Toward our goal of placing student success at the center of all we do, faculty taught or mentored our professional and graduate pharmacy students to many great achievements. While the size of our School's applicant pool increased with the addition of thirty students able to attend at the Springfield campus, the qualifications of our admitted students remained impressively high. Assessment efforts have resulted in a growing body of evidence that supports the achievement of curricular outcomes. Our pharmacy student organizations received many honors and awards including the APhA-ASP Division AA First Runner-Up National Chapter Achievement Award. Additionally, this year on-time graduation rates for the professional degree program have increased from 88.4% in 2015 to 95.3%. Our doctor of philosophy students also continued to bring prestige to the university by winning international research awards and publishing cutting-edge research articles in highly rated national and international scientific journals. Our doctor of pharmacy and doctor of philosophy graduates in 2016 found outstanding postdoctoral training opportunities or jobs in clinical practice, academia, pharmaceutical industry, or regulatory organizations.

Students and faculty have continued to advance statewide engagement as well as lead in the life and health sciences. Successes would not be possible without the dedication and indefatigable support of administrative staff.

Diversity is a cornerstone of the strategic plan. Students, staff, and faculty within the School have demonstrated a commitment to this principle by creating a diverse community through robust recruiting and hiring practices. We strive to cultivate an inclusive environment at all levels of our community and at all locations of our dynamic institution. Promoting this feature of our School as a strength has facilitated all areas of our work. We are proud to continue working to establish a vibrant educational and professional space for all students, staff and faculty.

Our many successes are entirely attributable to the hard work and dedication of our students, staff, and faculty as well as state financial support and assistance from our partners at the University of Missouri in Columbia, Missouri State University, UMKC, and the University of Missouri System.

Please enjoy reviewing all of the outstanding accomplishments of our students, staff, and faculty in this annual report.

Sincerely,

Russell B. Melchert, Ph.D.
Dean and Professor

Table of Contents

School of Pharmacy 2016 Annual Report	Page Number
Introduction	1
The SOP Strategic Plan 2015 – 2020	2
Placing Student Success At The Center	3
Doctor of Pharmacy/Professional Degree Program	3 – 15
Interdisciplinary Program	16 – 22
Advancing Statewide Engagement	23
School of Pharmacy Faculty and Staff Engagement	23
School of Pharmacy Student Engagement	24 - 26
School of Pharmacy Alumni Engagement	26 - 28
School of Pharmacy Fundraising	28 - 29
School of Pharmacy Communication	29
Promote Diversity	31
School of Pharmacy Recruitment Activities and Diversity Initiatives	31 - 32
Diversity Surveys and Data	32 - 33
School of Pharmacy Faculty Diversity	34 - 37
School of Pharmacy Staff Diversity	38 - 39
Lead in Life and Health Sciences: Excel in Research and Promote Economic Development	40
School of Pharmacy Research	40
School of Pharmacy Grant Proposals	40 - 41
School of Pharmacy Faculty Scholarly Activity	42 - 58
Acknowledgements	59

Introduction

The University of Missouri–Kansas City (UMKC) is comprised of 12 academic units, and the School of Pharmacy (SOP) is one of four health science units. The SOP contributes significantly to the university’s mission to lead in the life and health sciences, to develop a professional workforce, to collaborate on urban issues and create a vibrant learning experience.

UMKC mission statement

UMKC’s mission is to lead in life and health sciences; to deepen and expand strength in the visual and performing arts; to develop a professional workforce and collaborate in urban issues and education; and to create a vibrant learning and campus life experience.

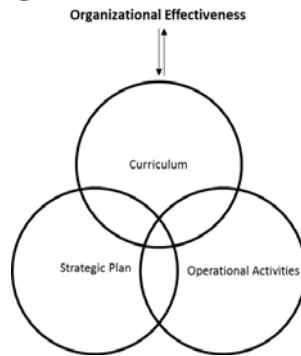
SOP mission statement

To educate, innovate, discover, engage, and serve to improve health.

The school prepares pharmacists through the *doctor of pharmacy degree program* and *advanced practice residencies* and prepares scientists through the *interdisciplinary doctor of philosophy programs* and *post-doctoral fellowships*.

The SOP programmatic assessment plan provides the framework for the continuous improvement of school operations, the curriculum and the learning experiences provided for professional and graduate students.

Programmatic Effectiveness



The plan is designed to sustain a culture of assessment. Data are collected from key constituents regarding progress towards strategic initiatives, curricular effectiveness and faculty/staff alignment of work with the core mission.

<i>Internal Key Constituents</i>	<i>External Key Constituents</i>
Current students Alumni Faculty Staff School committees School administration and leadership	Employers Community members UMKC academic leadership Professional organizations Educational accrediting bodies Partner programs and institutions

Key findings are shared with internal and external constituents through the SOP Annual Report.

The SOP Strategic Plan 2015–2020

Several steps were involved in the development and approval of the 2015–2020 SOP Strategic Plan. The first step in the process was the adoption of the UMKC Strategic Plan Goals with appropriate modifications by the SOP Leadership Team in the Spring of 2013. This was followed by the creation of new Vision and Mission Statements by faculty and staff during the Summer of 2013. Faculty, staff, professional and graduate students, alumni, preceptors and the Dean’s Advisory Council then worked to develop objectives and action steps for each Strategic Plan Goal by Fall 2014. The 2015–2020 SOP Strategic Plan (indicated below) was ratified by SOP faculty and staff on November 24, 2014.

Place Student Success at the Center

To provide the optimal learning environment for all students: outstanding academic programs and experiences, seamless student support and a vibrant campus community.

Objectives:

1. Advance student skill development through performance-based instruction and assessment such as simulated, authentic and interprofessional experiences.
2. Foster and maintain skills and expertise in methods to enhance student success through professional development opportunities for faculty, preceptors, and staff.
3. Create and assess innovative strategies to enhance student engagement in curricular and extracurricular activities across the programs’ multiple sites.
4. Gain diverse and highly-qualified students across degree programs by using data-driven recruitment and admissions strategies.

Advance Statewide Engagement

To become a model school of pharmacy that enhances education, public health and economic development in the state of Missouri.

Objectives:

1. Promote interest in the science and practice of pharmacy through student recruitment and public awareness initiatives.
2. Equip pharmacists to provide quality, progressive patient care services and to support public health initiatives.
3. Partner with other health professions to promote health and wellness initiatives.
4. Advocate for the advancement of pharmacist delivered care.
5. Foster relationships with pharmacy stakeholders to support the School and the profession.

Promote Diversity

To promote diversity and inclusiveness in all aspects of school life.

Objectives:

1. Cultivate an environment committed to inclusiveness, civility, respect, and connectivity to the School.
2. Provide a diverse learning and life experience and create culturally competent citizens.
3. Recruit and retain a diverse community of students, staff, and faculty.
4. Ensure that diversity initiatives are actively reviewed and owned by the students, faculty, and staff.

Lead in Life and Health Sciences: Excel in Research and Promote Economic Development

To attain national and international recognition for excellence in research; produce world-class scholarship and creative activity; encourage entrepreneurship, foster innovation, and increase technology transfer; and build relationships that create economic and workforce development.

Objectives:

1. Develop innovative health care services, practice-based research and translational research.
2. Increase national and international recognition in research and health care services.
3. Implement innovative professional, doctoral, inter-professional education and research initiatives.
4. Expand available opportunities for extraordinary scholarship and creative activity.
5. Increase technology transfer and support interdisciplinary research and community partnerships.

Placing Student Success at the Center

Doctor of Pharmacy/Professional Degree Program.

Accreditation. The Doctor of Pharmacy program is accredited by the Accreditation Council for Pharmacy Education (ACPE). The customary on-site accreditation review cycle is scheduled every eight years. The professional degree program is granted accreditation status if the program complies with accreditation standards including the appropriateness of the program’s mission and goals, the adequacy of resources and organization to meet the mission and goals and outcomes which indicate that the mission and goals are being met. The UMKC SOP’s on-site evaluation occurred in November of 2015. The evaluation team report, in addition to the school’s self-study, was used by the ACPE Board of Directors to determine accreditation action at their January 2016 meeting. ACPE granted the UMKC SOP accreditation status through June 30, 2024.

Application and Admission Process. A number of changes occurred in the admission process for professional degree seeking students. The following represents a timeline of changes.

Year	Change
2012	<p>UMKC SOP begins participating in PharmCAS, an online application program supported by the American Association of College of Pharmacy (AACP) with the entering class of 2012.</p> <p>Admissions Committee begins using a “whole file” review process for screening Doctor of Pharmacy applicants whereby committee members consider all materials in the applicant’s file.</p> <p>The Early Decision program was implemented in 2012. The Early Decision program is a binding option for applicants who have decided that a particular doctor of pharmacy program is their first choice and will enroll if accepted to that program. The first Early Decision students entered the doctor of pharmacy program in Fall of 2013.</p> <p>Curriculum changed from 1-5 to 2-4 program.</p>
2013	AACP refined the definition of “applicant” to be prospective students who complete the entire application process (i.e., submit a PharmCAS application and submit a supplemental UMKC application).
2014	The application process and definitions were unchanged in 2014 and 2015 with one exception: alumni interviewers were given access to the applicant’s work and volunteer experience prior to the interview.
2016	The SOP began to accept students into an Early Assurance program which makes them eligible for admission into UMKC SOP in Fall 2018. In 2016, 74 high school seniors applied. Sixty-five of the seniors completed their applications. The deadline for applying was moved to March 1 st and in the future, applications will be processed sooner by way of a rolling admission process. Students must have a minimum score of 25 on the ACT or 1200 on the SAT to apply as well as a 3.50 GPA. Twenty-four applicants were admitted into the final Early Assurance class. Once accepted into the program, students receive benefits that set them apart from other pre-health students.

Applicant Data.

University of Missouri – Kansas City, School of Pharmacy Applicant Data, 2013 – 2016				
Applicants	2013	2014	2015	2016
Number of applicants who indicated UMKC in PharmCAS	519	540	500	441
Number of completed applications	354	350	370	336
Number of incomplete applications	74	123	85	56
Number of applicants denied admission	132	94	88	86
Number of applicants that withdrew	53	48	51	50
Number of offers declined	38	54	59	52
Number of offers rescinded	7	10	6	7
Number of applicants that matriculated	124	143	155	141
Number of applicants on the alternate list	0	0	11	0

Key Findings for 2016 Applicants:

The number of applicants who indicated UMKC in PharmCAS declined in 2016 when compared to 2015. The number of completed applications decreased by 34 in 2016 as did the number of incomplete applications. However, the number of Early Decision applicants increased and the number of applicants who declined an offer slightly decreased from the two previously admitted classes. No students remained on the alternate list after class matriculated.

Early Decision Program.

University of Missouri – Kansas City, School of Pharmacy Early Assurance Program Data, 2013–2016									
Start Year	Grad Year	Kansas City		Columbia		Springfield		Total	
		#ED (% ED)	Total Applicants	#ED (% ED)	Total Applicants	#ED (% ED)	Total Applicants	#ED (% ED)	Total Applicants
2013	2017	9 (10%)	94	4 (13%)	30	N/A	N/A	13 (10%)	124
2014	2018	9 (10%)	90	4 (17%)	23	5 (17%)	30	18 (13%)	143
2015	2019	29 (30%)	97	8 (26%)	31	6 (22%)	27	43 (28%)	155
2016	2020	24 (27%)	89	16 (67%)	24	9 (32%)	28	49 (35%)	141

Early Assurance Program.

University of Missouri – Kansas City, School of Pharmacy Early Assurance Program Data, 2016			
	Applicants	Eligible for Admission	Accepted to EA Program
	N=65	N=42	N=24
Average ACT Composite (range)	27.2 (19-34)	29.1 (25-34)	28.8 (25-32)
Average Non-weighted GPA (range)	3.763 (2.74-4.0)	3.891 (3.542-4.0)	3.872 (3.52-4.0)
% Female / % Male	69% / 31%	74% / 26%	75% / 25%
% Missouri resident	86%	86%	92%
<i>Racial/Ethnic Data</i>			
• White	68%	74%	76%
• Asian	17%	14%	16%
• Black	5%	2%	4%
• Hispanic	1.5%	0%	0%
• Nonresident	5%	2%	0%
• No answer	5%	7%	4%

Admissions Data.

University of Missouri – Kansas City, School of Pharmacy Admissions Data, 2013–2016				
Entering Pharm.D. Class Data	2013	2014	2015	2016
Accepted Applicants	170	208	221	200
Applicants Matriculated	124	143	155	141
Matriculated Applicants with Missouri Residency	89%	81%	83%	82%
Matriculated Applicants Identifying as Female	61%	64%	56%	57%
Matriculated Applicants with a Previous Baccalaureate Degree	32%	48%	37%	28%
Average Age of Matriculated Applicants	22	22	22	21
Average Cumulative Grade Point Average	3.51	3.47	3.52	3.50
Average Science and Math Grade Point Average	3.40	3.33	3.43	3.38
Average Number of Credit Hours Earned	98	110	98	96
Ethnicity				
White	82%	72%	72%	76.5%
Asian / Pacific Islander	8%	16%	10%	8.5%
Black or African American	5%	6%	9%	4.2%
American Indian or Alaskan Native	3%	0%	0%	0.9%
Hispanic or Latino	2%	1%	3%	0%
Two or More Races	0%	3%	3%	1.4%
International / Foreign	4%	1%	2%	5.0%
Not Specified	0%	1%	1%	3.5%
PCAT Percentages				
Verbal	60	57	58	54
Biology	63	64	62	61
Reading Comprehension	55	58	51	54
Quantitative Ability	51	53	57	57
Chemistry	62	64	63	61
Composite	61	59	60	59

Student Learning Outcomes and Educational Goals. The essential premise of the Center for Advancement of Pharmaceutical Education (CAPE) Educational Outcomes of 2013 is that pharmacists now and in the future must be capable of 1) functioning collaboratively as members of an interprofessional team, 2) advocating for patients and demonstrating leadership, 3) providing care for diverse patient populations, 4) contributing to the health and wellness of individuals and communities, 5) educating a broad range of constituents, and 6) effectively managing a highly technical workplace. CAPE Educational Outcomes of 2013 were designed to represent all areas of pharmacy and guide the academy's efforts to educate Doctor of Pharmacy students.

Student Learning Outcome 1.

Domain 1-Foundational Knowledge. Develop, integrate and apply knowledge from the foundational sciences (pharmaceutical, social/administrative/behavioral, and clinical sciences) to evaluate the scientific literature, explain drug action, solve therapeutic problems and advance population health and patient-centered care.

The Pharmacy Curriculum Outcomes Assessment. The Pharmacy Curriculum Outcomes Assessment (PCOA) is a comprehensive test developed by the National Association of Boards of Pharmacy to measure student performance. The PCOA can assist in determining whether

the UMKC SOP curriculum is meeting the desired educational outcomes. The PCOA is required for all pharmacy students nearing completion of their didactic curriculum to meet Standard 24 of the 2016 ACPE Standards. The 2016 Standards became effective July 1, 2016 therefore the SOP has decided to administer the test in the last semester of the third professional year. Students completed the PCOA in April of 2016.

Student Learning Outcome 2.

Domain 2-Essentials for Practice and Care.

- 2.1. Patient-Centered Care (Caregiver) - Provide patient-centered care as the medication expert (collect and interpret evidence, prioritize, formulate assessments and recommendations, implement, monitor and adjust plans, and document activities).
- 2.2. Medication Use Systems Management (Manager) - Manage patient healthcare needs using human, financial, technological, and physical resources to optimize the safety and efficacy of medication use systems.
- 2.3. Health and Wellness (Promoter) - Design prevention, intervention, and educational strategies for individuals and communities to manage chronic disease and improve health and wellness.
- 2.4. Population-Based Care (Provider) - Describe how population-based care influences patient-centered care and influences the development of practice guidelines and evidence-based best practices.

Pharmacotherapy. Students complete 7 credit hours of Pharmacotherapy in both the spring and fall semesters of the third didactic year. Pharmacotherapy II and III are designed to develop the student's ability to assess patients and provide pharmaceutical care. The courses focus on developing and applying problem-solving strategies for complex illnesses commonly encountered in pharmacy practice. The student's ability to apply knowledge is assessed by completing 4-5 cases per exam and 4-5 exams per semester. For each case, students must:

1. Identify and prioritize medical and drug related problems.
2. Establish patient care goals.
3. Assess medical condition and medication therapy and provide rationale for treatment plan.
4. Recommend pharmacologic and non-pharmacologic therapy.
5. Suggest monitoring for safe and effective drug use.

Each case section above as well as the overall case score is analyzed to determine if and where students struggle so that global course changes can be implemented when necessary. The following table provides a summary of data evaluated.

Case Section	Problems	Goals	Assessment	Plan	Monitoring	Total
Section Worth	5 points	5 points	10 points	10 points	5 points	35 points
Spring 2015	4.6 (92%)	4.6 (92%)	8.8 (88%)	8.4 (84%)	4.1 (82%)	30.6 (87%)
Fall 2015	4.5 (90%)	4.6 (92%)	8.9 (89%)	8.5 (85%)	4.3 (86%)	30.8 (88%)
Spring 2016	4.6 (91%)	4.6 (92%)	8.9 (89%)	8.5 (85%)	4.3 (87%)	30.9 (88%)
Fall 2016	4.6 (92%)	4.6 (92%)	8.8 (88%)	8.6 (86%)	4.4 (87%)	29.5 (88%)

Student Learning Outcome 3.

Domain 3-Approach to Practice and Care.

- 3.1. Problem Solving (Problem Solver) – Identify problems; explore and prioritize potential strategies; and design, implement, and evaluate a viable solution.
- 3.2. Educator (Educator) - Educate all audiences by determining the most effective and enduring ways to impart information and assess understanding.
- 3.3. Patient Advocacy (Advocate) - Assure that patients' best interests are represented.
- 3.4. Interprofessional Collaboration (Collaborator) – Actively participate and engage as a healthcare team member by demonstrating mutual respect, understanding, and values to meet patient care needs.
- 3.5. Cultural Sensitivity (Includer) - Recognize social determinants of health to diminish disparities and inequities in access to quality care.
- 3.6. Communication (Communicator) – Effectively communicate verbally and nonverbally when interacting with an individual, group, or organization.

Student Learning Outcome 4.

Domain 4-Personal and Professional Development.

- 4.1. Self-Awareness (Self-aware) - Examine and reflect on personal knowledge, skills, abilities, beliefs, biases, motivation, and emotions that could enhance or limit personal and professional growth.
- 4.2. Leadership (Leader) - Demonstrate responsibility for creating and achieving shared goals, regardless of position.
- 4.3. Innovation and Entrepreneurship (Innovator) - Engage in innovative activities by using creative thinking to envision better ways of accomplishing professional goals.
- 4.4. Professionalism (Professional) - Exhibit behaviors and values that are consistent with the trust given to the profession by patients, other healthcare providers, and society.

Completion of inventories. Asking students to complete validated tests followed by differing learning activities and self-reflection is a strategy to develop self-awareness of motivation, metacognition and skills. Surveys or inventories are administered to students in the first and second professional year in preparation for discussion. In-class activities allow students, with and without advisors present, to interact and discuss similarities and differences in survey or inventory results. Reflection-based assignments document students' understanding of the personal characteristics in relation to their development.

ACT Engage. Engage was developed to measure student behaviors and psychosocial attributes (motivation and skills, social engagement, self-regulation) which are critical components of academic success. Results help students and advisors identify strengths and areas for improvement.

	Academic Success Index	Retention Index	Academic Discipline	Academic Self-Confidence	Commitment to College	General Determination
Fall 2015 (Class of 2019)	84	82	69	59	67	69
Fall 2016 (Class of 2020)	80	79	65	57	64	67
National (2016)	51	52	52	52	55	53

Data reported as a percentile.

Motivated Strategies for Learning Questionnaire (MSLQ). The MSLQ assesses the types of learning strategies and academic motivation used by college students. Results can help students improve motivation to study, study habits and course performance.

	Intrinsic Goal Orientation	Extrinsic Goal Orientation	Control of Learning	Basic Rehearsal Strategies	Elaboration Strategies	Critical Thinking	Help Seeking Behavior
Fall 2015 (Class of 2019)	5.02	5.26	5.61	4.89	4.91	4.08	4.45
Fall 2016 (Class of 2020)	5.63	4.87	6.09	5.35	5.59	4.60	5.05
National (2016)	5.03	5.03	5.74	4.53	4.91	4.16	3.84

Data reported are averages.

The results of the MSLQ indicate that our students demonstrate above-average strengths that facilitate their learning and growth. These results are predictive because the students demonstrate the capacity to excel academically and to matriculate through the program.

Attrition.

Graduation and Attrition Statistics for the Pharm.D. Program

University of Missouri – Kansas City, School of Pharmacy Graduation and Attrition Statistics for the Pharm.D. Program Class of 2011 – Class of 2016								
Year of Entry	Year of Graduation	Overall and By Site	Number Admitted	On Time Graduation (%)	Delayed Finish (%)	Attrition: Personal (%)	Attrition: Academic (%)	Graduation Rate of Original Class (%)
2009	2013	Total	138	121 (88%)	3 (2%)	2 (1%)	12 (9%)	124/138 (90%)
		Kansas City	110	98 (89%)	1 (1%)	2 (2%)	9 (8%)	99/110 (90%)
		Columbia	28	23 (86%)	2 (7%)	0 (0%)	3 (11%)	25/28 (89%)
2010	2014	Total	136	122 (90%)	1 (<1%)	4 (3%)	9 (7%)	123/136 (90%)
		Kansas City	108	98 (91%)	1 (<1%)	3 (3%)	6 (6%)	99 (92%)
		Columbia	28	24 (85.7%)	0	1 (4%)	3 (11%)	24 (86%)
2011	2015	Total	138	122 (88.4%)	4 (2.9%)	2 (1.4%)	10 (7.2%)	126/138 (91.3%)
		Kansas City	110	97 (88.2%)	4 (3.6%)	1 (0.9%)	8 (7.3%)	101/110 (91.8%)
		Columbia	28	25 (89.3%)	0 (0.0%)	1 (3.6%)	2 (7.1%)	25/28 (89.3%)
2012	2016	Total	123	116 (94.3%)	3 (2.4%)	1 (0.8%)	3 (2.4%)	119/123 (96.7%)
		Kansas City	95	89 (93.6%)	2 (2.1%)	0 (0%)	3 (3.2%)	91/95 (95.7%)
		Columbia	28	27 (96.4%)	1 (3.6%)	1 (3.3%)	0 (0%)	28/28 (100%)

Overall attrition rates are well within the standards set by ACPE. However, attrition due to academic dismissal for the classes of 2013, 2014 and 2015 exceeded the 5% limit set forth by ACPE. For the class of 2016, attrition due to academic dismissal did not exceed that limit. The SOP is working to reduce attrition through the stringent and thorough admission process and close monitoring of student progression through the program. A student success program was implemented in the Fall of 2011 to detect academic struggle throughout the semester and to intervene as needed. In addition, the curriculum changed from a 1-5 to a 2-4 program with the entering class of 2012 (graduating class of 2016). More than a third of the overall attrition occurred during the first year of the 1-5 program; therefore, changing to a 2-4 curriculum should and has slow attrition.

Student Scholarships and Awards.

Number of Scholarships Awarded by Class.

University of Missouri – Kansas City, School of Pharmacy Number of Scholarships Awarded By Class Fall 2016				
Year of Study	Fall of 2013	Fall of 2014	Fall of 2015	Fall of 2016
P1	19	26	17	24
P2	25	33	42	28
P3	24	27	27	33
P4	24	20	31	25
Graduate	3	5	8	6
Students Receiving Multiple Scholarships	9	9	8	11
Total Scholarships Awarded	104	120	135	127

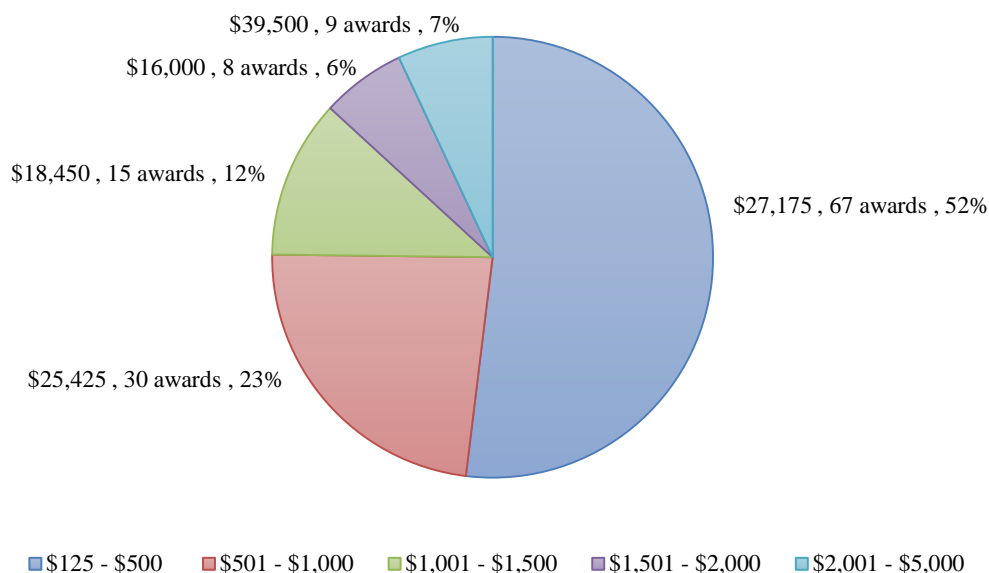
- Four additional P1 students each received a \$1,000.00 scholarship from annual Walgreens money that was not used for recruitment efforts/camps. The money is not available for scholarships in 2015-2016. These students are not represented in the above table.
- Three P1 students received Chancellor’s Historically Underrepresented Minority Nonresident Award worth the differential between out-of-state and in-state tuition. These students are not represented in the above table.

Percentage of Students that Received a Scholarship.

University of Missouri – Kansas City, School of Pharmacy Percentage of Students That Received a Scholarship Fall 2016				
Type of Student	Fall 2013	Fall of 2014	Fall of 2015	Fall of 2016
All Students	62%	80%	80%	66%
Pharm.D. Students	68%	85%	85%	69%
Graduate Students	17%	33%	33%	40%

Scholarship Award Distribution.

Distribution of Awards, Fall 2016



Recognition of Student Honors and Accomplishments.

Achievers of Excellence. School of Pharmacy scholarship awardees are recognized at the Achievers of Excellence awards program each fall. The reception for students and their families, scholarship donors, faculty, staff and alumni is sponsored by the Pharmacy Foundation. Each student has his or her photograph taken with the scholarship donor, if possible, and a copy is sent to the donor. A brief biography submitted by each scholarship recipient is printed in the awards program booklet. Over 300 people attended the event in 2016 including the UMKC Provost, Dr. Bichelmeyer.

UMKC Women’s Council. The UMKC Women’s Council presents their annual Graduate Assistance Awards at a reception in the spring. Doctor of pharmacy students are among the women recognized for their research projects. In 2013, one Doctor of Pharmacy student received an award. No Doctor of Pharmacy student received an award in years 2012, 2014, 2015 or 2016.

Doctor of Pharmacy Graduating Class. Each spring, award recipients in the Doctor of Pharmacy graduating class are recognized during the commencement ceremony and during the graduation banquets. Awards are given for superior academic achievement, leadership and service. Sponsors of the awards are invited to attend the ceremony and be recognized.

Licensure.

North American Pharmacist Licensure Examination.

North American Pharmacist Licensure Examination (NAPLEX) Pass Rates. Both the UMKC and national NAPLEX pass rates for first time test takers declined from previous year’s results. UMKC performed below the national average in 2016. By the end of 2016, 95.7% of the Class of 2016 was licensed. The majority of unlicensed students had not tried a second attempt by the end of 2016. The reasons for the decline in pass rates are currently being evaluated locally within the school and nationally by AACP, ACPE and NABP.

University of Missouri – Kansas City School of Pharmacy National Pass Rate Comparison for NAPLEX 2013-2016		
Calendar Year	UMKC	National
2013	95.31%	95.36%
2014	96.06%	94.35%
2015	94.53%	92.64%
2016	81.5%	85.86%

NAPLEX Pass Rates for UMKC and Comparator Schools. UMKC NAPLEX pass rates were lower than most but not all neighboring programs. The first time pass rates varied widely in 2016.

School Name	2013 Graduates				2014 Graduates				2015 Graduates				2016 Graduates			
	All attempts	Pass rate (%)	First-time attempts	Pass rate (%)	All attempts	Pass rate (%)	First-time attempts	Pass rate (%)	All attempts	Pass rate (%)	First-time attempts	Pass rate (%)	All attempts	Pass rate (%)	First-time attempts	Pass rate (%)
University of Nebraska	65	100	65	100	41	97.56	40	97.50	65	98.15	60	98.11	65	95.38	62	95.16
University of Oklahoma	108	95.37	105	95.24	112	99.11	111	99.10	104	98.08	104	98.08	117	84.62	104	84.62
*Creighton University	180	96.67	178	97.19	154	98.05	151	98.01	171	97.66	168	97.62	191	90.58	179	89.94
Southern Illinois University-Edwardsville	81	95.06	78	94.87	82	92.68	77	92.21	74	97.30	73	97.26	80	92.50	74	91.89
University of Kansas	104	98.08	103	98.06	149	98.66	147	98.64	159	96.23	154	96.75	182	85.16	157	84.17
University of Iowa	115	93.91	109	93.58	101	97.03	100	97.00	110	94.85	106	95.28	111	90.99	105	94.29
University of Missouri-Kansas City	128	95.31	123	95.93	127	96.06	124	95.97	128	94.53	123	95.12	140	81.43	119	81.51
*St. Louis College of Pharmacy	174	97.70	170	97.65	195	91.79	182	92.86	223	86.10	203	88.18	244	77.46	204	79.90

Multistate Pharmacy Jurisprudence Exam.

Multistate Pharmacy Jurisprudence Exam (MPJE) Pass Rates. Both the UMKC and national MPJE pass rates for first time takers and all attempts fell from previous years' results. UMKC performed above the national average in 2016.

University of Missouri – Kansas City School of Pharmacy National Pass Rate Comparison for MPJE 2012-2016		
Calendar Year	UMKC	National
2013	95.45%	92.80%
2014	96.97%	93.15%
2015	97.12%	92.89%
2016	84.48%	83.48%

MPJE for UMKC and Comparator Schools. UMKC MPJE pass rates were comparable to other schools in the region. Among 7 schools in the Midwest area, UMKC MPJE pass rates were the fourth highest. In 2016, for the first time at UMKC and across the schools in this region, pass rates decreased from the pass rates recorded in past years.

School Name	2013 Graduates				2014 Graduates				2015 Graduates				2016 Graduates			
	All attempts	Pass rate (%)	First-time attempts	Pass rate (%)	All attempts	Pass rate (%)	First-time attempts	Pass rate (%)	All attempts	Pass rate (%)	First-time attempts	Pass rate (%)	All attempts	Pass rate (%)	First-time attempts	Pass rate (%)
Creighton University	40	95.00	38	94.74	31	100	31	100	44	100	44	100	47	97.87	47	97.87
University of Kansas	92	100	92	100	118	99.15	117	99.15	136	99.26	135	99.26	126	96.03	121	95.87
University of Iowa	76	96.05	73	97.26	56	98.21	55	98.18	72	98.61	71	98.59	72	80.56	63	84.13
University of Nebraska	49	100	49	100	35	100	35	100	50	98.00	49	97.96	64	95.31	61	95.08
University of Missouri-Kansas City	110	95.45	106	96.23	99	96.97	96	96.88	104	97.12	101	97.03	116	84.48	102	85.29
St. Louis College of Pharmacy	139	94.96	133	94.74	132	94.70	127	95.28	127	93.31	120	92.50	174	78.74	143	79.72
Southern Illinois University-Edwardsville	61	96.72	60	96.67	59	94.92	56	94.64	52	92.31	50	94.00	66	78.79	53	79.25

Note: UAMS graduates do not take the MPJE exam and are therefore not included in this table.

Post-Graduate Training and Employment. During the timeframe of March–June 2016 when the Class of 2016 students completed the Exit Survey, 86% of students stated they were employed or pursuing post-graduate training. According to the AACP Graduating Student survey, less than 1% of the Class of 2016 was planning to work in pharmacy in the upcoming year.

Career Choices.

University of Missouri – Kansas City, School of Pharmacy Post-Graduate Employment and Training for Pharm.D. Graduates 2013 – 2016				
Career Choices	2013	2014*	2015	2016
Total N=	123	88**	123	124
Residency/Fellowship	23%	26%	29%	22%
Community Chain	49%	49%	42%	48%
Community Independent	9%	10%	7%	10%
Hospital	6%	10%	6%	5%
Industry (Sales, Clinical Residency)	0%	0%	0%	0%
Graduate School	0%	1%	1%	1%
Government, Military, Nuclear, Benefits, Mail Order	1%	2%	1%	0%
Unknown	0%	0%	0%	0%
Undecided	12%	0%	18%	14%

* The 2014 Pharm.D. exit survey was administered in October to assess employment at 6-months post-graduation. The response rate was lower than in previous years (70% vs ~100%). The 2014 data reflects only those responses. The graduating class size was 126 (98 in KC and 28 in Col).

Residency Placement.

In 2016, twenty-nine students (24% of the class) were accepted into postgraduate residency or fellowship training programs. Twenty-four of these students attended classes in Kansas City and five students attended classes in Columbia. Students accepted positions in thirteen different states.

Residency Placement Data 2013-2016.

University of Missouri – Kansas City, School of Pharmacy Residency Programs: Pharm.D. Graduate Placement 2013-2016			
	Received Placement on Match Day	Received Placement during Scramble	Placement in Program not Participating in Match
Percentage of Class Applied (2013)	18.6	1.3	0.0
Percentage of Applicants Placed (2013)	73.6	0.1	0.0
Percentage of Class Applied (2014)	20.0	0.4	0.6
Percentage of Applicants Placed (2014)	65.2	2.7	<0.1
Percentage of Class Applied (2015)	21.9	4.0	4.0
Percentage of Applicants Placed (2015)	64.2	11.9	11.9
Percentage of Class Applied (2016)	19.4	0.8	4.0
Percentage of Applicants Placed (2016)	63.2	2.6	13.2

University of Missouri – Kansas City, School of Pharmacy Residency and Fellowship Placement Data 2013 - 2016						
Year	% of UMKC Applicants Placed Through the ASHP Residency Match *	% of National Applicants Placed Through the ASHP Residency Match*	Number of UMKC Applicants who Placed Through Scramble	Number of UMKC Applicants who Placed in Non-ASHP Accredited Programs	Number and % of UMKC Students Who Applied and Placed in a Residency or Fellowship Program	Number and % of Graduating Class Who Completed a Residency or Fellowship Program
2013	73.6% (28/38)	65.2%	2	0	75.0% (30/40)	24.2% (30/124) KC: 22 / COL: 8
2014	65.2% (30/46)	65.4%	4	1	68.8% (35/51)	27.8% (35/126) KC: 28 / COL: 7
2015	65.2% (27/42)	66.3%	4	5	70.6% (36/51)	29.2% (36/123) KC: 31 / COL: 5
2016	63.2% (22/42)	68.0%	1	5	76.3% (29/38)	24% (29/120) KC: 24 / COL: 5

*UMKC data to compare to ASHP National Rate

*From ASHP Resident Matching Program – remaining placement data collected from graduating students and faculty reports.

**Includes students who received residency through match and scramble and placed in programs not affiliated with ASHP.

*** Data not available as to whether residency from scramble or from a non-accredited residency program.

Twenty-two of forty-two UMKC student applicants (63.2%) were placed into a Postgraduate Year One Residency (PGY-I) versus 68.0% of all 2016 applicants (nationwide) for Phase I of the ASHP Resident Matching Program (the “Match”). Of note, the National Matching Service, who provides this data, does not report on placements made through the scramble process (Phase II) or for programs that do not participate in the Match.

In 2016, six additional UMKC students were placed into residency programs during Phase II or outside of the Match:

- One student placed during the scramble (Phase II).
- Five students placed in programs that do not participate in the Match.

Students from Previous Graduating Classes that Matched in Programs in 2016.

Class of 2015

Five students matched in Phase 1 (4 in PGY-2 and 1 in PGY-1), 4 from KC and 1 from Columbia. Three students (all from KC) placed in PGY-2 through Early Commitment. Two students (both from KC) unmatched for PGY-2 in Phase I and nonparticipant in Phase II. Four students were nonparticipant in Phase I and II. Two were from KC and two from Columbia.

- 5/7 (71.4%) who participated in PGY-II match were matched versus 75% nationally
- 8/10 (80.0%) of applicants who sought a PGY-II residency placed either through the match or early commitment. Five were from KC and 3 were from Columbia
 - **Location for Class of 2015 placements:** MO-2; KS-2; OH-2; TX-1; MI-1

Class of 2013

One student (from KC) nonparticipant in Phase I and unmatched in Phase II.

Class of 2011

One student (from KC) unmatched in Phase I and matched in Phase II
 One student (from Columbia) nonparticipant in Phase I and Phase II

Other Training and Degrees.

University of Missouri – Kansas City, School of Pharmacy Other Training and Degrees 2016	
2016 AACP Graduating Student Survey	Number of Students
Pharm.D. / M.B.A.	0
Pharm.D. / M.S.	1
Other	1
“Current plans upon your graduation from the College/ School of Pharmacy”	
Pharmacy Residency Program	26
Pharmacy Master’s Program	5
M.B.A. Program	1
Other Health Professions	0
Fellowship	3
No Plans for Further Education	90

Interdisciplinary Program.

Enrollment. Graduate students enrolled in nine or more credits during a regular semester or five credits during a summer session are considered full-time students. All students registered for fewer than those specified totals are classified as part-time students, unless they hold a teaching or research appointment at UMKC. Full-time enrollment for students holding graduate teaching assistant or graduate research assistant (GTA/GRA) appointments is six hours in a regular semester or three hours in a summer session. Continuous enrollment is required.

Graduate Student Enrollment in 2016.

- Spring:
 - Thirty-two students in the Division of Pharmaceutical Sciences
 - Ten students in the Division of Pharmacology and Toxicology
- Fall:
 - Thirty-four students in the Division of Pharmaceutical Sciences
 - Sixteen students in the Division of Pharmacology and Toxicology

Pharmaceutical Sciences IPh.D. Learning Outcomes. The mission of the Graduate Program in the *Division of Pharmaceutical Sciences* is to prepare graduate students to be the next generation of productive scientists by training them in the techniques and concepts of cutting edge research in the pharmaceutical sciences, including the sub-disciplines of pharmaceutics and medicinal chemistry.

Program Goals.

- Students will learn fundamentals of discipline through course work.
- Students will read and analyze scientific literature.
- Students will apply knowledge through cutting edge research.

Student Learning Outcomes.

- Students will master broad fundamentals of the discipline.
- Students will be able to read, analyze and apply lessons from scientific literature.
- Students will be able to perform scientific research in their sub-discipline, including the mastery of techniques and concepts specific to their projects.
- Students will gain skill in presentation of scientific materials, including writing, posters and public speaking.

Pharmacology and Toxicology IPh.D. Learning Outcomes. The mission of the graduate program in the *Division of Pharmacology and Toxicology* is to educate and train the next generation of competitive, skilled, and knowledgeable pharmacologists and toxicologists who are competent to conduct health-related research.

Program Goal.

- To help students develop the knowledge and skills essential for becoming innovators in the fields of Pharmacology and Toxicology.

Student Learning Outcomes.

- Mastery of fundamental and advanced knowledge in Pharmacology and Toxicology along with appropriate knowledge in related interdisciplinary scientific fields.
- Understanding of the appropriate conduct of scientific investigations and competency in writing reports, manuscripts, and grant proposals, as well as oral presentations related to the dissemination of experimental results.
- Competency in developing professional collaborations with colleagues engaged in scientific research.

Research Publications, Posters, and Presentations.

University of Missouri – Kansas City, School of Pharmacy IPh.D. Discipline Enrollment 2016		
IPh.D. Disciplines	Publications	Posters / Presentations
Pharmaceutical Sciences	18	3
Pharmacology and Toxicology	6	9

Graduate students demonstrate research proficiency through participation in faculty research, development of their own related studies and the dissemination of their work through peer-reviewed publications as well as presentations at scientific meetings. Typically, graduates from our doctoral programs have published multiple peer-reviewed articles and are engaged in an ongoing program of research. UMKC SOP IPh.D graduates are well-trained to work as independent scientists in industry and/or academe.

Publications.

Book Chapters

Ramya Krishna Vadlapatla, Dhananjay Pal, Ashim K. Mitra, “Uptake and Permeability Studies to Delineate the Role of Efflux Transporters”, Jose Rueff and Antonio Sebastiao Rodrigues (Editors) **Cancer Drug Resistance Overviews and Methods**, (Chapter 5 out of 17 Chapters) Volume 1395 of the series Methods in Molecular Biology, Springer (Publisher) New York, pp 69-74, February 25, 2016.

Refereed Manuscripts

Ronghe A, Chatterjee A, Singh B, Dandawate P., **Abdalla F.**, Bhat NK., Padhye S., Bhat HK. 4-(E)-{(p-tolylimino)-methylbenzene-1,2-diol}, 1 a novel resveratrol analog, differentially regulates estrogen receptors α and β in breast cancer cells. *Toxicology and Applied Pharmacology*. 2016; 301: 1-13.

Agrahari V, Mandal A, Agrahari V, Trinh HM, Joseph M, Ray A, Hadji H, Mitra R, Pal D, Mitra AK. A comprehensive insight on ocular pharmacokinetics. *Drug Delivery and Translational Research*. 2016; 6(6): 735-754.

Agrahari V, Agrahari V, Hung W-T, Christenson LK, Mitra AK. Nanocarrier fabrication and macromolecule drug delivery: challenges and opportunities. *Therapeutic Delivery*. 2016; 7(4):257-78. doi: 10.4155/tde-2015-0012.

Agrahari V, Agrahari V, Hung WT, Christenson LK, Mitra AK., Composite Nanoformulation Therapeutics for Long-Term Ocular Delivery of Macromolecules. *Molecular Pharmaceutics*. 2016; 13(9): 2912-2922.

Jain A, **Barve A**, Zhao Z, Jin W, Cheng K. Comparison of avidin, neutravidin, and streptavidin as nanocarriers for efficient siRNA delivery. *Molecular Pharmaceutics*. 2016; 14(5): 1517-1527.

Barve A, Jain A, Liu H, Jin W, Cheng K. An Enzyme-Responsive Conjugate Improves the Delivery of a PI3K inhibitor to Prostate Cancer. *Nanomedicine: Nanotechnology, Biology, and Medicine*. 2016; 12(8): 2373-2381.

- Jin W, Qin B, **Barve A**, Cheng K. Discovery of PSMA-Specific Peptides for Targeted Drug Delivery to Prostate Cancer. *International Journal of Pharmaceutics*. 2016; 513:138-147.
- Jin W, **Barve A**, Cheng K. PSMA-Specific Ligands in Prostate Cancer Diagnosis and Therapy. *European Medical Journal Urology*. 2016. 4(1): 62-69.
- Shah A., Gangwani MR, **Chaudhari NS**, Glazyrin A., Bhat HK, and Kumar A. Neurotoxicity in the Post-HAART Era: Caution for the Antiretroviral Therapeutics. *Neurotoxicity Research*. 2016; 30(4): 677-697.
- Cholkar K**, Gilger BC, Mitra AK. Topical delivery of aqueous micellar resolving E1 analog (RX-10045). *International Journal Pharmaceutics*. 2016; 498(1-2):326-34.
- Kandel S**, Thapa R. Assessment and comparison of efficacy of midazolam and diazepam as preoperative medication. *International Journal of Pharmaceutical Sciences and Research*. 2016; 7(8): 3355-3360.
- Mandal A**, Pal D, Mitra AK. Circumvention of P-gp and MRP2 mediated efflux of lopinavir by a histidine based dipeptide prodrug. *International Journal of Pharmaceutics*. 2016; 512(1): 49-60.
- Mandal A, Agrahari V, Khurana V**, Pal D, Mitra AK. Transporter effects on cell permeability in drug delivery. *Expert Opinion on Drug Delivery*. 2016; 14(3): 385-401.
- Bisht R, **Mandal A**, Rupenthal ID, Mitra AK. Ex vivo investigation of ocular tissue distribution following intravitreal administration of connexin43 mimetic peptide using the microdialysis technique and LC-MS/MS. *Drug Delivery Translational Research*. 2016; 6(6): 763-770.
- Ngo AN**, Ezoulin MJ, Murowchick JB, Gounev AD, **Youan BB**. (2016). Sodium Acetate Coated Tenofovir-Loaded Chitosan Nanoparticles for Improved Physico-Chemical Properties. *Pharmaceutical Research*. 2016; 33(2): 367-383.
- Stancil SL**, Miller M, Briggs H, Lynch D, Goggin K, Kearns GL. Contraceptive Provision to Adolescent Females Prescribed Teratogenic Medications. *Pediatrics*. 2016; 137(1): e20151454.
- Patel SP, Vaishya R, Patel A, Agrahari V**, Pal D, Mitra AK. Optimization of novel pentablock copolymer based composite formulation for sustained delivery of peptide/protein in the treatment of ocular diseases. *Journal of Microencapsulation*. 2016; 33(2):103-13.
- Ray A, Cholkar K**, Earla R, Mitra AK. Doxorubicin prodrug for cytoplasmic and nuclear delivery in breast cancer cells. *Drug Development and Therapeutics*. 2016; 7(1): 13-19.
- Ray A, Mandal A, Joseph M**, Mitra AK. Recent patents on nanoparticles and nanoformulations for cancer therapy. *Recent Patents on Drug Delivery and Formulation*. 2016; 10(1): 11-23.
- Trinh HM, Joseph M, Cholkar K**, Pal D, Mitra AK. Novel strategies for the treatment of diabetic macular edema. *World Journal of Pharmacology*. 2016; 5(1):1-14.

Articles

Agrahari V, Agrahari V, Mandal A, Pal D, Mitra AK. How are we improving the delivery to back of the eye? Advances and challenges of novel therapeutic approaches. *Expert Opinion Drug Delivery*. 2016; 14(3):1145-1162.

Agrahari V, Agrahari V, Mitra AK. Next generation drug delivery: Circularoty cells-mediated nanotherapeutic approaches. *Expert Opinion on Drug Delivery*. 2016; 14(3): 285-289.

Silverstein PS, **Aljouda NA, Kumar A.** Recent developments in vertical transmission of ZIKA virus. *Oncotarget*. 2016; 7(39): 62797-62798.

Posters and Presentations

Abdalla F, Nookala A, Kumar A, and Bhat HK. *Resveratrol Analog TIMBD Modifies HIV-1 gp120 Associated Inflammation in Astrocytes*. UMKC School of Pharmacy Health Sciences Research Summit. Kansas City, MO, April 13, 2016.

Abdalla F, Nookala A, Kumar A, and Bhat HK. *Resveratrol Analog TIMBD Modifies HIV-1 gp120 Associated Inflammation in Astrocytes*. Society of Neuroscience. San Diego, CA, November 14, 2016.

Agrahari V, Hung W, Christenson L, Mitra AK. *Composite Nanotherapeutics for Long Term Ocular Delivery of Macromolecules* (Poster). American Association of Pharmaceutical Scientists. Denver, CO, November 14, 2016.

Alsousi A, Igwe O. *Oxidant –induced release of high mobility group box 1(HMGB1) and inflammatory cytokines in synovial fibroblasts, Effect on cell death* (Poster). Society for Neuroscience. San Diego, CA, November 16, 2016.

Alsousi A, Igwe O. *Oxidant - mediated release of High mobility group box 1(HMGB1) and inflammatory cytokines in synovial fibroblasts*. Pharmaceutical Graduate Research Meeting. Kansas City, MO, June 17, 2016.

Barve A, Jain A, Liu H, Jin W, Cheng K. *Development of Prostate Cancer Targeted Peptide-Drug Conjugate*. American Association of Pharmaceutical Scientists. Denver, CO, November 15, 2016.

Barve A, Cheng K. *Development of Prostate Cancer Targeted Peptide-Drug Conjugate*. Pharmaceutical Graduate Research Meeting. Kansas City, MO, June 17, 2016.

Mandal A, Pal D, Mitra AK. *Circumvention of P-gp and MRP2 Mediated Efflux of Lopinavir by a Histidine Based Dipeptide Prodrug*. American Association of Pharmaceutical Scientists. Denver, CO, November 14, 2016.

Ngo A, Ezoulin MJM, Gounev A, Gounev T, Youan B. *Enhanced Water Solubility of Docetaxel by sodium acetate Hydrotropy*. American Association of Pharmaceutical Scientists. Denver, CO, November 14, 2016.

Miller MK, Champassak S, Delurgio SD, Dowd MD, **Stancil S**, Apodaca TR, Goggin K. *Intervention to Increase Access to Sexual Health Services* (Poster). Pediatric Academic Societies. Baltimore, MD, April 30, 2016.

Stancil SL, Vyhlidal C, Kearns GL, Leeder JS, Pearce RE. *Induction of CYP2A6 by Metronidazole in Primary Human Hepatocytes*. American Society of Pharmacology and Experimental Therapeutics. San Diego, CA, April 5, 2016.

Miller MK, Champassak S, Delurgio SD, Dowd MD, **Stancil S**, Apodaca TR, Goggin K. *An Emergency Department Intervention to Increase Adolescent Access to Key Sexual Health Services: Feasibility and Impact* (Poster). Society of Adolescent Health and Medicine. Washington, DC, March 11, 2016.

Progression.

Spring 2016 – Fall 2016.

University of Missouri – Kansas City, School of Pharmacy		
Progression Data, 2016		
	Total Number of Students	
	Students Enrolled	Students Graduated
Division of Pharmaceutical Sciences	33	5
Division of Pharmacology and Toxicology	16	2

To mark progression through the graduate programs, a white coat ceremony was instituted in the 2012- 2013 academic year. Students who have completed two full years of study in one of the Ph.D. programs and who have filed a plan of study with the graduate school are eligible to participate in the white coat ceremony.

Students receive a white laboratory coat and take the oath of the scientist signifying their commitment to upholding the highest standards in their scientific contributions to new knowledge. In the inaugural white coat ceremony in May of 2013, 36 graduate students received their white coats. Five students received a white coat in April 2014, and 10 students received their white coat in April 2015. Four students received their white coat in April 2016.

Graduate Student Awards.

The UMKC Women’s Council. The UMKC Women’s Council presents their annual Graduate Assistance Fund Awards at a reception in the spring. Ph.D. and doctor of pharmacy students are among the women recognized for their research projects. In spring of 2016, four SOP graduate students were among the 67 awardees.

Division of Pharmaceutical Sciences.

- Agrahari, Vibhuti
- Giri, Namita
- Joseph, Mary
- Trinh, Hoang
- Vemula, Harika

Division of Pharmacology and Toxicology.

Abdalla, Fatma
Aljouada, Nour
Alsousi, Asmaa
Zhang, Yan

Health Sciences Student Research Summit. At the 2016 Health Sciences Student Research Summit, one pharmacy graduate student received the best poster award.

Division of Pharmaceutical Sciences.

Agrahari, Vibhuti

Graduate Student Honors and Awards.

Division of Pharmaceutical Sciences.

Agrahari, Vibhuti

- Quality by Design and Product Performance Graduate Student Award, American Association of Pharmaceutical Scientists
- Biotechnology Graduate Student Research Award, American Association of Pharmaceutical Scientists

Barve, Ashutosh

- School of Graduate Studies Travel Award, UMKC, 2016
- Rho Chi Pharmacy Honor Society

Division of Pharmacology and Toxicology.

Abdalla, Fatma.

- School of Graduate Studies Travel Award, UMKC, 2016
- School of Pharmacy Dean's Travel Award, UMKC, 2016

Alsousi, Asmaa.

- School of Graduate Studies Travel Award, UMKC, 2016
- Best Poster Award in Biological and Chemical Sciences Discipline, School of Graduate Studies Community of Scholars Symposium

2016 Graduations.

Graduates and Mentor.

Division of Pharmaceutical Sciences.

Chen, Zhijin. (Cheng)
Giri, Namita (Lee)
Oh, Byeongtaek (Lee)
Ray, Animikh (Mitra)
Shah, Sujay (Mitra)

Division of Pharmacology and Toxicology.

Gangwani, Mohit (Kumar)

Cao, Lu (Kumar)

IPh.D. Graduate Job Placement.

University of Missouri – Kansas City, School of Pharmacy Job Placement of IPh.D. Graduates 2016					
Name	Advisor	Class	Employer	Location	Position
Cao, Lu	Kumar	2016	University of Massachusetts	Worcester, MA	Postdoctoral Associate
Chen, Zhijin	Cheng	2016	FDA, Center for Drug Evaluation	Washington, DC	Post-Doctoral Fellow, ORISE Fellow
Gangwani, Mohit	Kumar	2016	UCLA	Los Angeles, CA	Post-Doctoral Fellow
Giri, Namita	Lee	2016	West Coast University (WCU) Center for Graduate Studies	Los Angeles, CA	Assistant Professor, Pharmaceutics
Oh, Byeongtaek	Lee	2016	Stanford University	Palo Alto, CA	Post-Doctoral Fellow
Ray, Animikh	Mitra	2016	ABH Nature's Products, Inc.	Edgewood, NY	Lead Formulation Scientist, QA/QC Manager
Shah, Sujay	Mitra	2016	Insys Therapeutics, Inc.	Chandler, AZ	Formulation Scientist

Advancing Statewide Engagement

School of Pharmacy Faculty and Staff.

Faculty Engagement.

Clinical Practice Information. Within the Division of Pharmacy Practice and Administration, there were thirty-one clinical faculty located in twenty-two practice sites in the Kansas City Metropolitan Area, Columbia and Springfield.

- Center for Behavioral Medicine, Kansas City. (2).
- Centerpoint Medical Center, Kansas City. (1).
- Cox Health Steeplechase Family Physicians Clinic, Springfield. (1).
- Cox Health System South, Springfield. (1).
- Clay County Public Health Center/Samuel Rodgers. (1).
- Faith Community Health, Branson. (1).
- Goppert-Trinity Family Care Clinic. (2).
- Jordan Valley Community Health Center, Springfield. (1).
- Kansas City CARE Clinic. (2).
- Mercy Hospital, Springfield. (1).
- MSU Care, Springfield. (1).
- North Kansas City Hospital, Kansas City. (1)
- Red Cross Community Pharmacy, Kansas City. (1).
- Research Medical Center, Kansas City. (1).
- St. Luke's Multispecialty Clinic, Kansas City. (1).
- Truman Medical Center Behavioral Health, Kansas City. (1).
- Truman Medical Center–Hospital Hill, Kansas City. (3).
- Truman Medical Center–Lakewood, Kansas City. (1).
- UMKC Drug Information Center, Kansas City. (3).
- University of Missouri Hospital, Columbia. (3).
- Harry S. Truman Memorial Veteran's Administration Hospital, Columbia. (1).
- Veterans Affairs Medical Center Honor Annex, Kansas City. (1).
- University of Missouri Physicians Fairview Internal Medicine Clinic, Columbia. (1).
- University of Missouri Physicians Family and Community Medicine Clinic, Columbia. (1).

Faculty Involved in Post-Graduate Training.

- The school offers the following practice-based residencies.
 - Three PGY-I community pharmacy residencies in affiliation with Balls Food Stores, Red Cross Pharmacy, and Walgreens Pharmacy.
 - One PGY-I residency in public health at the Kansas City Care Clinic.
 - Three PGY-II in ambulatory care at Cox Health.
 - Two fellowships in Drug Information.
- The school also provides faculty support for the following residency programs.
 - Center for Behavioral Medicine. (2).
 - Truman Medical Center. (5).
 - University Hospital at MU. (3).

School of Pharmacy Student Engagement.

Doctor of Pharmacy: Student Organization

Membership.

- Academy of Managed Care Pharmacy. (21).
- American Pharmacists Association Academy of Student Pharmacists. (341).
- Kappa Epsilon. (66).
- Kappa Psi (Kansas City). (127).
- Kappa Psi (Springfield). (39).
- National Community Pharmacists Association. (138).
- Public Health Organization. (41).
- Phi Lambda Sigma. (58).
- Rho Chi. (94).
- Student National Pharmaceutical Association. (20).
- Student Society of Health-System Pharmacists. (82).
- Student College of Clinical Pharmacy. (34).

Examples of Community Service Provided by Doctor of Pharmacy Student Organizations.

- DEA National Drug Take-Back Day
- Operation Breakthrough
- Medicare Part D Signup Sessions
- Shepherd's Center
- Vampire Cup Blood Donation
- Harvesters
- Race For the Cure
- Organ Donor Awareness
- Generation Rx
- Operation Self Care

Examples of Patient Care Provided by Doctor of Pharmacy Student Organizations.

- MedZou Project Homeless Connect
- Black Health Care Coalition Health Screenings
- Operation Immunization, Diabetes, Heart and Self Care
- ROO 4 Health
- Healthy for Life: the University of Missouri's Faculty and Staff Wellness Program
- Missouri State Fair Health Screenings
- Sojourner Clinic
- International Medical Mission Trips to Dominican Republic and Peru
- Bone Density Screenings at Assisted Living Facilities
- Falls Prevention

Examples of Philanthropy Provided by Doctor of Pharmacy Student Organizations.

- CRUSH Hunger Event
- Annual AIDS Walk
- KC Kidney Walk
- RxFactor
- Susan G. Komen Race for the Cure
- Harvesters
- Ronald McDonald House
- Bowling for Breast Cancer
- Marine Toys for Tots
- Vial of Life
- Adopt-A-Family
- Volley for Charity
- Angel Tree

Examples of Leadership, Clinical and Professional Skills Development Provided by Doctor of Pharmacy Student Organizations.

- Multicultural Lunch
- Clinical Pearls Discussions
- Professional Development Seminars
- Research Skills Seminars
- Clinical Pharmacy Challenge
- Clinical Skills Competition
- Attendance at National Meetings
- Residency Roundtable
- Strategies for Effective Networking
- National Patient Counseling Competition
- Advocacy and Legislative Days
- Compounding Competition
- Financial Planning
- Mock Interview Day
- Etiquette Lunch
- Pharmacy and Therapeutics Competition
- Rho Chi Clinical Pearls
- General Medicine I Roundtable
- Student Practice Research Networks
- Clinical Case Presentations
- CPR/First Aid Training

Examples of Social Events Provided by Doctor of Pharmacy Student Organizations. Baseball games, movie nights, game and trivia nights, casino night, formals, roller skating, holiday parties, laser tag, welcome picnics and dinners.

Student Community Engagement. T.E. Atkins UM Wellness Program (Healthy for Life) is the University of Missouri’s established employee wellness program which spans all four system locations and serves all benefit-eligible employees. In 2010, the School of Pharmacy established a collaboration with this program to conduct health screenings and flu shot clinics annually for employees. Our P3 IPPE students are actively involved in providing services at these events, allowing them to utilize therapeutic knowledge and employ many direct patient care skills. Students screen patients seeking immunization, obtain consent and administer flu shots. Biometric screenings are also performed where students measure blood pressure, perform a finger-stick to obtain a blood sample for blood glucose and lipid panel readings, and obtain patient height and weight to calculate body mass index. This collaboration engages students and faculty and allows our students to demonstrate the knowledge, skills, and impact that pharmacists can have on community health and wellness. Biometric Screenings are offered every other year.

Healthy For Life Summary. The table below summarizes the SOP involvement with Healthy for Life.

University of Missouri – Kansas City, School of Pharmacy								
Healthy for Life Involvement								
2012 - 2016								
	2012-2013		2013-2014		2014-2015		2015-2016	
	KC	MU	KC	MU	KC	MU	KC	MU
Flu Shots Administered	515	652	375	682	680	693	914	733
Biometric Screenings and Education	377	202	*	*	694	350	*	*
Students	128		124		120		124	
Faculty	14		8		10		10	

SOP immunization protocol was established in 2011.

Doctor of Pharmacy Student Organization Awards and Honors.

Academy of Managed Care Pharmacy.

- 2015-2016 AMCP Chapter of the Year: Third Place.

APhA-ASP Awards, National.

- APhA-ASP Division AA 1st Runner Up National Chapter Achievement Award: 2015-16.
- APhA-ASP National 2nd Runner Up OTC Medication Safety Award.
- APhA-ASP Boyle Family Scholarships, APhA Foundation – Elizabeth Rodman.

APhA-ASP Awards, Local.

- Outstanding Service Program of the Year.
- Outstanding Leader of the Year (Elizabeth Rodman, Kansas City President).
- Outstanding Leader Award (Kelly Cochran, Faculty Advisor, MU site).
- Outstanding Graduate/Professional Award (TJ Pham, Kansas City Graduate).

Kappa Psi.

- Mid America Province, 2015-2016 MAP Philanthropy Award.

Individual Student and Other Organization Awards and Honors.

- *Kappa Epsilon*
 - Zada M. Cooper Scholarship. Vincent Cascone.
- *Clarion National Case Competition*
 - University of Missouri Team, Second Place.
- *American Association of Colleges of Pharmacy: Walmart Scholars.*
 - Student – Sarah Massey/Faculty Mentor – Valerie Ruehter.
 - Student – Janna Brown/Faculty Mentor - Lisa Cillessen.
- *American Society of Health-System Pharmacists: National Clinical Skills Competition, Top 10 Finish*
 - Paige Melling and Miranda Verdier.

IPh.D. Student Engagement.

Graduate Student Organizations – Memberships.

- American Association of Pharmaceutical Scientists (30).
- Pharmaceutical Sciences Graduate Student Association (33).

School of Pharmacy Alumni Engagement.

Alumni Numbers. As of July 2016, the campus advancement office records showed that the School of Pharmacy had 4,663 presumed living alumni members; 3,716 are listed as “potentially contactable,” 3,077 have a mailing address, 2,256 have a known phone number and 2,372 have a known email address.

University Rank for Volunteer Engagement. For the eleventh year, pharmacy remains first in total volunteer hours provided by alumni and preceptors. As of July 1, 2016, volunteers contributed almost 129,000 hours of time and service in 2015-2016 representing 61% of all volunteer service hours recorded by the UMKC campus.

Number of Alumni Preceptors. 413 pharmacy professionals are on the 2015-2016 list of preceptors for the Division of Pharmacy Practice and Administration, and a large percentage of them are alumni.

- 2012-2013: preceptors provided 119,760 volunteer hours.
- 2013-2014: preceptors provided 122,280 volunteer hours.
- 2014-2015: preceptors provided 151,682 volunteer hours.
- 2015-2016: preceptors provided 128,960 volunteer hours.

Alumni Participation: School Committees and Events.

Alumni Service on School Committees.

- Admissions. (1).
- Curriculum. (1).
- Task Force on Diversity. (1).

Dean's Advisory Council. Thirty of the thirty-five members of the Dean's Advisory Council were School of Pharmacy alumni. The council invites students to their spring and fall meetings to meet one-on-one with the members.

Pharmacy Foundation. In 2016, twenty-two of the twenty-six members of the Pharmacy Foundation Board of Directors were School of Pharmacy alumni. Board members have opportunities to interact with students at the annual golf tournament, the Achievers of Excellence program, and other school activities.

Pharmacy Alumni Association. Fifteen alumni serve on the Pharmacy Alumni Association.

- Several alumni serve as guest speakers in required and elective pharmacy courses.
- APhA-ASP invites alumni to speak at some of their events and supervise at health screenings.
- Alumni attend Kappa Psi's annual Volley for Charity event and Kappa Epsilon's Bowling for Breast Cancer fundraisers.

Volunteer Hours.

In addition to preceptors, the school reported the following volunteer hours for events and meetings of the Pharmacy Alumni Association, Pharmacy Foundation and Dean's Advisory Council.

- 2012-2013: 323 hours.
- 2013-2014: 242 hours.
- 2014-2015: 213 hours.
- 2015-2016: 159 hours.
 - The Pharmacy Alumni Association sponsors annual student appreciation day at all three sites.
 - Pharmacy alumni serve as speakers each year at the Achievers of Excellence. Alumni have also been invited to participate in the White Coat ceremony.

- In the spring of 2013, 2014, 2015 and 2016, alumni served as the keynote speakers for the School of Pharmacy commencement ceremonies and a representative from the Pharmacy Alumni Association also speaks each year.

School of Pharmacy Fundraising.

Fundraising Numbers. The campus advancement office reports fundraising data on a fiscal year basis. Fundraising for the School of Pharmacy for 2012-2016 is presented in the following table.

University of Missouri – Kansas City, School of Pharmacy Fundraising Numbers 2012 - 2016		
Fiscal Year	Funds Raised	Number of Donors
Fiscal year 2012 (July 1, 2011-June 30, 2012)	\$181,102.02	398
Fiscal year 2013 (July 1, 2012-June 30, 2013)	\$513,502.16	413
Fiscal year 2014 (July 1, 2013-June 30, 2014)	\$148,865.69	304
Fiscal year 2015 (July 1, 2014-June 30, 2015)	\$225,936.01	378
Fiscal year 2016 (July 1, 2015-June 30, 2016)	\$224,159.85	287

Only includes annual fund, scholarship or other major cash gifts

The UMKC campus was engaged in a capital campaign, including annual, major and estate gifts, from July 1, 2009 to January 31, 2016. During this time, the School of Pharmacy raised \$9,238,895.00 for the recording time period of the campaign.

Scholarships Offered. The capital campaign goal and project list including scholarship support with goals to raise.

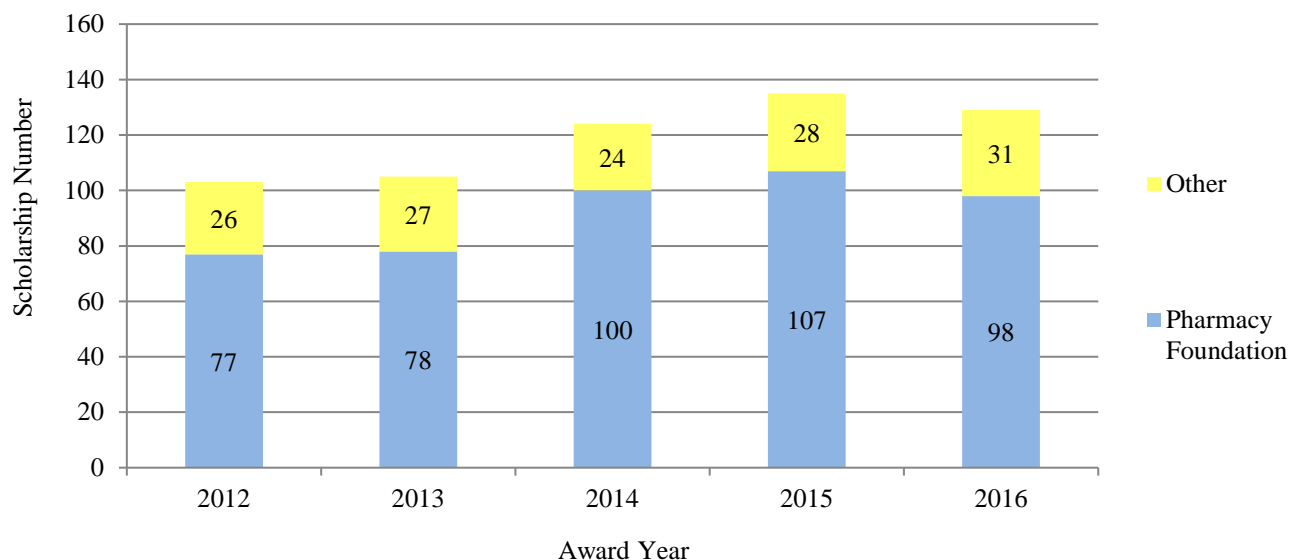
Private Funding. The original goal in 2009 was to establish new scholarships specifically for the Springfield campus. However, as we have grown as a School in the past eight years, our messaging to the community and our alumni has been “one school/three locations.” As a result, nearly all of our donors who establish new endowments or annual fund scholarships do not stipulate a specific school or location, but instead tend to favor what the student’s future intention is in pharmacy.

Pharmacy Foundation. In 2016, twenty-two of the twenty-six members of the Pharmacy Foundation Board of Directors were School of Pharmacy alumni. Board members have opportunities to interact with students at the annual golf tournament, the Achievers of Excellence program, and other school activities

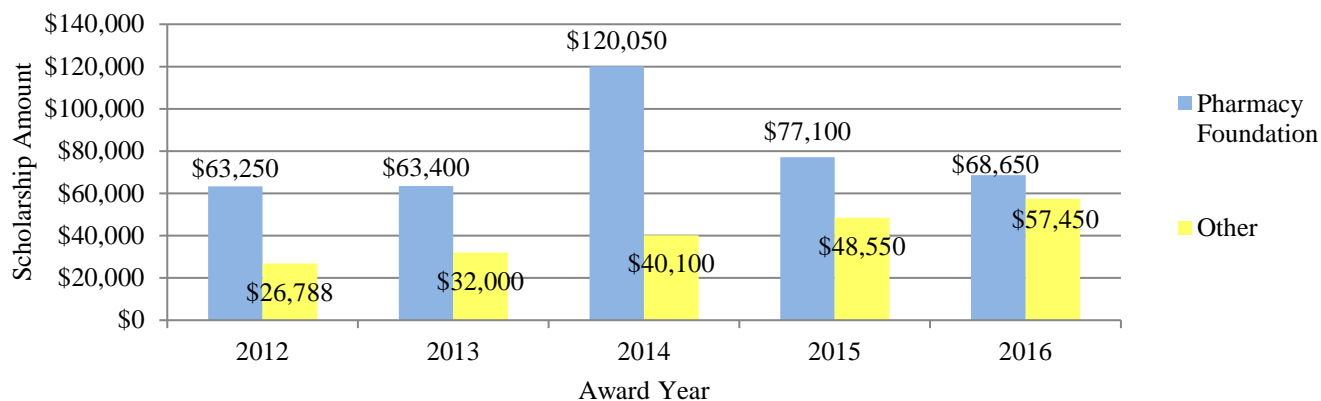
New Pharmacy Foundation Scholarships.

- Fall 2013: One new endowed scholarship; five new annual scholarships; one one-time scholarship.
- Fall 2014: Two new endowed scholarships; six new annual scholarships; one one-time scholarship.
- Fall 2015: Five new annual scholarships.
- Fall 2016: One new endowed scholarship; four new annual scholarships.

Number of Scholarships Awarded.



Total Scholarship Amounts Awarded.



School of Pharmacy Communication.

Development and Dissemination of Communication.

The school employs a full-time staff member in the position of coordinator of communication and promotions, who serves as the resource and contact for news and information for the campus public relations department and the school as a whole. The coordinator is responsible for the dissemination of school news to campus public relations, social media, web site and appropriate news outlets and/or organizations. The coordinator also maintains and updates the School of Pharmacy’s web page and Facebook site.

The school’s web site has a page dedicated to news releases related to students, faculty, staff, alumni, awards, and upcoming events (<http://pharmacy.umkc.edu/news/>). The page includes a link for online submission of news items. School of Pharmacy news releases also

appear on the web page of the UMKC office of public relations (<http://www.umkc.edu/news/>) and “UMatters,” the web page for UMKC faculty and staff news (<http://info.umkc.edu/umatters/>).

Pharmacy Events and Programs.

- All university alumni are invited to the UMKC Alumni Awards luncheon. The invitation is produced and mailed by main campus each year.
- Alumni Association, Pharmacy Foundation and Dean’s Advisory Council members receive regular communications for relevant specific events such as student appreciation days, wellness fairs, the Health Sciences Student Research Summit, career fair and commencement.
- The Pharmacy Foundation golf tournament player brochure is e-mailed to over 1,300 people – alumni, past players, constituent group members, SOP faculty and staff.
- The Pharmacy Alumni reunion weekend brochure is e-mailed to all alumni of the SOP, Alumni and Pharmacy Foundation board members, Dean’s Advisory Council members and friends of the SOP each fall.
- The Pharmacy Alumni Board annually sponsors a wine tasting event. This tradition began in the fall of 2003. Invitations are e-mailed to over 1,500 alumni each year.
- The Tiger-Roo Tailgate tradition began in the fall of 2011. Each fall, approximately 900 e-mail invitations are sent to area alumni to attend a tailgate party prior to a Mizzou home football game, usually in October.
- The Roo Night at the Cardinals tradition began in summer 2015 to celebrate the alumni, students, faculty, staff and friends of the UMKC SOP at MSU. Invitations were emailed to approximately 900 Missouri alumni for the June event.

The UMKC Advancement division produces a monthly e-blast newsletter known as *eRoos* with all known alumni related information from across the campus. This newsletter is sent to all UMKC alumni with a known e-mail account. The UMKC Alumni Association includes news about alumni on their web page (<http://www.umkcalumni.com>) under “Roos in the News” and “Class Notes” and in their printed magazine *Perspectives* and *eRoos*, the online alumni newsletter. *Perspectives* is also mailed to over 3,000 pharmacy alumni each year.

Promote Diversity

School of Pharmacy Recruitment Activities and Diversity Initiatives.

Summary of 2015-2016 UMKC School of Pharmacy Recruitment Activities

School of Pharmacy Hosted and/or in Collaboration with other Programs Events – 50% of events were focused on underrepresented students.

- Springfield Student Appreciation Day
- Columbia Student Appreciation Day
- Kansas City Student Appreciation Day
- Admission Interviews – seven dates
- BESt Group Visit*
- College for a Day - PrepKC*
- Urban Universities and AHEC (Area Health Education Consortium)*
- Pathways to Prosperity Teacher Prep/Development Day - PrepKC*
- Saturday Academy Program – UMKC School of Medicine*
- Harmon High School Teacher Development Day - PrepKC*
- HealthTracks Summer Camp - AHEC/KC STEM Alliance*
- HealthStart Summer Camp – PrepKC/UMKC health professional schools*
- Our Kids Program – KC Police Department*
- School of Pharmacy Summer Camp – Kansas City
- School of Pharmacy Summer Camp – Columbia
- Pharmacy 7100A class
- UMKC Pre-Pharmacy Society monthly meetings
- Welcome Center-School of Pharmacy visit days – nine dates

Volker Campus Hosted Events - 15% of events were focused on underrepresented students.

- Freshman and Transfer Orientations – nine dates
- UMKC Convocation
- Fall 2015 UMKC Preview Days – three dates
- Spring 2016 UMKC Preview Days – three dates
- Experience UMKC Day
- UMKC A&S 115 Prehealth Class
- UMKC University College 101 Class
- UMKC College of Arts and Sciences Pre-Professional Seminar/Luncheon
- Junior Achievement Keep Calm and Career On College Fair*
- African Centered Prep Academy*
- Community College Counselor Connection Day

Off Campus High School Events– 50% of events were focused on underrepresented students.

- Career Jumping – Allen Village*
- Agricultural Education Field Day
- Career Jumping – Grandview*
- Missouri Western Regional College Fair
- Infinite Scholars (Sept.) - Ferguson, MO*
- Infinite Scholars (Sept.) - St. Louis, MO*
- Mid-Missouri Regional College Fair
- NACAC (National Association for College Admission Counseling) Kansas City
- Liberty College Fair
- Career Jumping – Center*
- St. Louis Public Schools Fair*
- Springfield College Fair
- Lee's Summit District Fair
- St. Louis NACAC (Oct.)*
- Career Jumping – Hickman Mills*
- JCCC (Johnson County Community College) Health Sciences Fair

- Lee's Summit West Career Fair
- Blue Valley Northwest Career Fair
- Infinite Scholars (Feb.) – Ferguson, MO*
- Infinite Scholars (Feb.) – St. Louis, MO*
- Missouri School Counselors Association Conference
- Career Jumping – Schlagle*
- Lincoln Prep –Kansas City (SNPhA visit)*

Off Campus College Events – 0% of events were focused on underrepresented students.

- KSU (Kansas State University) Prepharmacy Club
- JCCC PrePharmacy Club Visit
- University of Arkansas Pre-Pharmacy Society
- MSSU (Missouri Southern State University) Career Fair
- Mizzou HS 1000 class
- MO Western University Pre-Health Club
- Westminster Pre-Health Club
- Mizzou School of Health Professions (SHP) Career Fair (Oct.)
- Mizzou Professional Panel
- Career Expo University of MO Hospital
- Truman State Career/Grad Expo (Sept.)
- Mizzou Pre-Pharmacy Society
- Longview Community College Showcase
- Avila University Pre-Health Class
- Mizzou SHP Career Fair (March)
- MSU (Missouri State University) Majors Fair
- Truman State Career/Grad Expo (Feb.)
- Mizzou Scrub-in For Health
- MSU Pre-Pharmacy Society

*Focused on underrepresented students

Diversity Surveys and Data.

AACP Graduating Student Survey. Results from the 2016 AACP Graduating Student Survey revealed that 97.5% of students feel that the SOP is welcoming to students with diverse backgrounds. This number is slightly higher than data reported in 2015 (95%).

Diversity of Doctor of Pharmacy Students.

University of Missouri – Kansas City, School of Pharmacy								
Demographic Data of Enrolled Student: Number of Students and Percentage by Groups								
Race	2013		2014		2015		2016	
White	393	78.6%	391	76.3%	407	74.8%	419	74.3%
Black or African American	18	3.6%	22	4.2%	34	6.3%	37	6.5%
Hispanic or Latino	11	2.2%	12	2.3%	14	2.6%	9	1.6%
Asian or Pacific Islander	48	9.6%	58	11.3%	60	11.0%	59	1.0%
American Indian or Native Alaska	3	0.6%	3	<1%	1	<1%	0	0%
Other/Unknown	16	3.2%	12	2.3%	9	1.7%	12	2.1%
Foreign	2	0.4%	2	<1%	5	0.9%	12	2.1%
Two or More Ethnicities	9	1.8%	12	2.3%	14	2.6%	14	2.5%
Grand total	500		512		544		564	

2016 U.S. Census Data: Racial Diversity in Missouri*

Race	%
White	79.8
Black or African American	11.8
Hispanic or Latino	4.1
Asian	2.0
American Indian and Alaskan Native	0.6
Native Hawaiian and Other Pacific Islander	0.1
2 or more races	2.2

**Obtained from U.S. Census Bureau website.*

School of Pharmacy Faculty Diversity.

Qualification and Diversity of Faculty.

The school seeks to recruit, retain, and support a highly qualified and diverse faculty. Our faculty represent a range of ethnicities/races. Faculty demographics as of September 2016 are provided below.

University of Missouri – Kansas City, School of Pharmacy Qualification and Diversity of Faculty 2016			
Clinical/Non-clinical	Female	Male	Total
Clinical Academic			
Hispanic or Latinx	1	0	1
White	27	7	32
Total	28	7	35
Non-clinical Academic			
Asian	0	6	6
Black or African American	0	2	2
White	2	5	7
Total	2	13	15
Administrative			
Asian	0	2	2
Black or African American	0	0	0
White	2	4	6
Total	2	6	8
Grand Total	32	26	58
Race and Rank			
Asian			
Associate Research	0	1	1
Associate Professor	0	4	4
Professor	0	4	4
Total	0	9	9
Black or African American			
Associate Professor	0	1	1
Professor	0	1	1
Total	0	2	2
Hispanic or Latino			
Clinical Associate	1	0	1
Total	1	0	1
White			
Assistant Research	0	1	1
Clinical Assistant Professor	17	5	22
Clinical Associate	8	1	9
Clinical Professor	1	2	3
Assistant Professor	0	1	1
Associate Professor	1	0	1
Professor	3	6	9
Total	30	16	46
Grand Total	31	27	58

Full-Time Faculty. At the start of the 2016 fall semester, the School of Pharmacy had fifty-eight (Division of Pharmacy Practice and Administration: forty-four, Division of Pharmacology and Toxicology: six, Division of Pharmaceutical Sciences: eight) full-time faculty. Thirty-five were clinical, non-tenure track appointees. One was a research, non-tenure track appointee. Twenty-one were tenure track appointees. Eight faculty were located in Columbia and eight were located in Springfield. The remainder were located in Kansas City.

Faculty Recruitment. In 2016, the school recruited for eight positions.

- One Assistant Clinical Professor for the Division of Pharmacy Practice and Administration at the Kansas City site.
- One Assistant Clinical Professors for the Division of Pharmacy Practice and Administration at the Columbia site.
- One Assistant Clinical Professors for the Division of Pharmacy Practice and Administration at the Springfield site.

Faculty Hires, Promotion and Turnover.

Faculty hires from 2015-2016.

- 2010: Russell Melchert, Eric Wombwell, Daniel Aistrope, David Phillips, Kelly Cochran, Lauren Odum, Mark Patterson.
- 2011: Lynn Anliker, Andrew Bzowycy, Angela Brownfield, Mark Sawkin.
- 2012: N/A.
- 2013: Kylie Barnes, Amanda Stahnke.
- 2014: Paul Gubbins, Heather Lyons-Burney, Diane McClaskey, Dominick Salvatore, Roger Sommi (promotion to Associate Dean at MU).
- 2015: Sarah Billings, Lisa Cillessen, Elizabeth Englin, Kendall Guthrie, Barbara Kasper, Jamie Koerner, Heather Taylor, Maqual Graham (promotion to Associate Dean for Academic Affairs).
- 2016: Kathryn Holt, Sarah Cox, April Porter

Retention of new hires. From 2010 through 2016, there were 29 new hires, two of which were internal transfers. Twenty-five of the hires are still with the school for an 86% retention rate.

Progress toward promotion and tenure with award effective September 1, 2016. Two tenure track faculty members applied for and received promotions in 2016. In addition, three non-tenure track faculty were promoted.

University of Missouri – Kansas City, School of Pharmacy Faculty Progress Toward Promotion and Tenure 2015					
Faculty Progress	2012	2013	2014	2015	2016
Under Tenure Review	3	1	0	0	0
Awarded Tenure	3	1	0	0	0
TT Promoted	3	3	0	0	2
NTT Promoted	1	2	3	2	3
TT Annual Reviews	4	1	1	0	0

Faculty turnover. From 2012 through 2016, 20 faculty members left the School of Pharmacy.

- 2012: (3; includes 1 retiree who is now emeritus faculty).
- 2013: (3).
- 2014: (5; one was an early retirement, one was an internal transfer).
- 2015: (8; two retirements, one internal transfer).
- 2016: (1; faculty member passed away).

SOP faculty, staff and students mourn the loss of Dr. Elizabeth (Beth) Winans. Dr. Winans passed away December 15, 2016 after a long and brave battle against cancer. Dr. Winans joined the UMKC SOP in 2007 as a Clinical Associate Professor in the Division of Pharmacy Practice and Administration. Dr. Winan's clinical practice site was located at Truman Medical Center's Behavioral Health Department where she not only taught student pharmacists how to care for patients, she was also invaluable in teaching the medical teams. She was recently recognized nationally by the College of Psychiatric and Neurologic Pharmacists with the Innovative Practice Award, signifying her hard work, dedication, and creativity in behavioral health. During her last months, Dr. Winans continued to give her all to the SOP by working in every way possible to help the school, including efforts towards curricular concerns and Higher Learning Commission accreditation initiatives during her difficult treatments. Dr. Winans will be missed by many and for many years to come.

Faculty Certifications and Licensure Status. In the Division of Pharmacy Practice and Administration, 27 out of 44 faculty (61%) have board certifications; 42 out of the 44 faculty (95%) have active pharmacist licenses in one or more states.

In the Division of Pharmaceutical Sciences, one faculty member is a registered pharmacist—Thomas Johnston (Kansas active; Minnesota inactive). Ashim Mitra holds a State License for Bureau of Narcotics and Dangerous Drugs, Missouri Department of Health and Federal License for Controlled Substances/US Drug Enforcement Administration.

In the Division of Pharmacology and Toxicology, two faculty members are registered pharmacists—Orisa Igwe (Louisiana inactive; Minnesota inactive; Ohio inactive) and Russell Melchert (Arkansas active; Oklahoma active).

Faculty Awards.

- Teacher of the Year awards (awarded Spring 2016)
 - Class of 2016
 - Simon Friedman
 - Class of 2017
 - First place: Valerie Ruehter
 - Runner up: Dominick Salvatore
 - Class of 2018
 - First place: Russell Melchert
 - Runner up: Thomas Johnston
 - Class of 2019
 - First place: Mridul Mukherji
 - Runner up: Simon Friedman
- Rho Chi Teacher of the Year 2016
 - Kylie Barnes

Bzowyckj A.

- American Association of Diabetes Educators Rising Star Award Summer 2016.

Cochran KA

- New Educator Award, American College of Clinical Pharmacy, 2016.
- Advisor of the Year, UMKC Outstanding Organization, 2016.

Graham, MR.

- Matthew “Bill” Wilson Alumnus of the Year, 2016.

Knell ME.

- Preceptor of the Year, UMKC School of Pharmacy, 2016.

Melchert RB.

- Outstanding Interdisciplinary Faculty Award , UMKC Graduate Student Council, 2016.

Mitra AK.

- President’s Faculty Award for Sustained Career Excellence, University of Missouri System, 2016.

Ruehter V.

- Alumni of the Year, Phi Lambda Sigma Chapter, 2016.

Santee J.

- Chancellor’s Award for Excellence in Diversity, 2016.

Smith AJ.

- Pharmacist of the Year, Greater Kansas City Society of Health System Pharmacists, 2016.

Taylor H.

- Mercy Hospital Springfield Patient Safety Champion Recognition, 2016.

Wombwell E.

- UMKC Faculty Member of the Year, Missouri Pharmacist Association, 2016.

School of Pharmacy Staff Diversity.

Qualification and Diversity of the SOP Staff.

Staff Demographics.

University of Missouri – Kansas City, School of Pharmacy Staff Demographics 2016			
Race	Male	Female	Total
American Indian	0	0	0
Black or African American	0	2	2
Hispanic or Latinx	0	1	1
White	3	19	22
Asian	0	0	0
Two or more races	0	1	1
Not reported	0	0	0
Total	3	23	26

Staff Recruitment. In the hiring of one staff member in 2016, UMKC Human Resources screened applicants and forwarded three applications to the school for the position. Interviews took place and offers were made to the most qualified candidates.

Staff Development. All staff (100%) completed professional development training in 2016. All staff (100%) participated in the development of the SOP strategic plan. The development process took place throughout the year with all school meetings, development sessions offered by Human Resources and through myLearn.

Staff Retention.

- 2012: 96% retention rate; twenty-three staff positions; one staff member left. Instructional technology support staff retired and the position was centralized. One position was added for the Springfield expansion.
- 2013: 96% retention rate; twenty-three staff positions. Division of Pharmacology and Toxicology staff left and was replaced. In addition, we had a shared advancement officer and a shared development officer.
- 2014: 84% retention rate; twenty-five staff positions; four staff members left. One new position was created in the Office of Experiential Learning to address a concern of the accrediting body. One position within the Office of Student Affairs was not recruited due to budgetary reasons and lack of need within the department. Three positions were recruited and filled. In addition, we had a shared advancement officer and a shared development officer.
- 2015: 88% retention rate; twenty-five staff positions; three staff members left. One position was recruited in 2015, remainder of positions were filled in 2016. The shared advancement officer and a shared development officer was terminated mid-year and the decision was made not to fill that position due to funding.
- 2016: 80% retention rate; twenty-six staff positions; five staff members left. One new position was recruited (Springfield Campus) and five open positions were filled in 2016.

Staff Awards. In December 2016, the dean hosted a holiday luncheon for the faculty and staff in Kansas City. Staff awards were presented at the luncheon. The recipients were nominated and selected by a vote of all faculty and staff in the school. The names of the winners in each category were engraved on a plaque in the second-floor hallway of the Health Sciences

Building. The names were also submitted to the campus staff awards committee as the School of Pharmacy's nominees for the campus awards.

Human Resources Campus Collaboration Award.

- Shannon Vacek, Office of Student Affairs

Chancellor's Education First Award.

- Christina Berg, Office of Experiential Programs.

Chancellor's True Unsung Hero Award.

- Shana Eisentrager, Business Office

Student Mentor Award.

- Steve McDonald, Office of Student Affairs

Lead in Life and Health Sciences: Excel in Research and Promote Economic Development

School of Pharmacy Research.

Faculty Research Grant Institutional Ranking.

University of Missouri – Kansas City, School of Pharmacy American Association of Colleges of Pharmacy Data Fiscal Year 2016					
Scope of Funding Awards	Total Funded Faculty Investigators	National Average for Funded Investigators	Total Funding	National Average for Total Funding	Institution Rank
Total National Institutes of Health Research	3	9.0	\$889,475	\$4,086,627	55 (n=94)
Total Other Federal Research	0	3.6	\$0.00	\$982,017	NA (n=71)
Total Research Funding–All Federal Sources	3	10.4	\$889,475	\$4,584,506	60 (n=99)
Total Research Funding Awards from Non-Federal Sources	4	6.6	\$601,289	\$1,308,438	69 (n=103)
Total Extramural Research	7	13.0	\$1,022,925	\$4,941,501	64 (n=113)

School of Pharmacy Grant Proposals.

Active Grants. In 2016, faculty in the School of Pharmacy had thirty-three active grants: seven through the National Institutes for Health, one through the National Science Foundation, one through the United States Department of Defense, and twenty-four grants that are industry/foundation/other.

The University of Missouri-Kansas City Active Grants 2016				
Principal Investigator	Agency	Active Dates	Direct Costs	Indirect Costs
Hari Bhat	University of Missouri Research Board	1/14/2015-1/13/2017	\$40,000.00	
Kun Cheng	NIH National Institute on Alcohol Abuse and Alcoholism	9/15/2012–8/31/2018	\$974,074.00	\$403,828.00
Kun Cheng	American Cancer Society	7/01/2015-6/30/2018	\$120,194.00	\$23,256.00
Lisa Cillessen	Missouri Dept. of Health and Senior Services	7/1/2016-6/30/2017	\$6,000.00	
Lisa Cillessen	Missouri Primary Care Association	6/1/2016-12/31/2017	\$10,000.00	
Lisa Cillessen	Missouri Dept. of Health and Senior Services	7/1/2015-6/30/2016	\$10,000.00	
Lisa Cillessen	ASHP Foundation	1/1/2015-6/30/2016	\$4,506	\$360.00
Kelly Cochran	Farmers Central States Center for Agricultural Safety and Health -- NIOSH Center	2/1/2016--	\$20,000.00	
Simon Friedman	NIH National Institute of Health	8/1/2015-7/31/2019	\$164,225.00	\$71,043.00
William Gutheil	NIH National Institute of Allergy and Infections	3/15/2016 – 2/28/2018	\$71,228.53	\$31,418.33
William Gutheil	University of Missouri Research Board	6/01/2015-7/31/2016	\$26,000.00	

Orisa Igwe	NIH National Institute of Dental And Craniofacial Research	7/1/2011–6/30/2016	\$295,553.00	\$143,328.00
Jamie Koerner	St. Louis University	7/1/2016 – 6/30/2017	\$5921.00	
Anil Kumar	NIH National Institute on Drug Abuse	9/30/2008–3/31/2016	\$1,383,534.00	\$375,249.00
Anil Kumar	NIH National Institute on Drug Abuse	4/1/2009–3/31/2016	\$975,147.00	\$464,933.00
Anil Kumar	NIH National Institute on Alcohol Abuse and Alcoholism	9/10/2012–6/30/2016	\$825,045.00	\$356,197.00
Anil Kumar	NIH National Institute on Alcohol Abuse	7/1/2016 – 6/30/2018	\$0.00	\$0.00
Cameron Lindsey	North Kansas City Hospital	7/1/2016-	\$950.00	
Cameron Lindsey	National Center for Interprofessional Practice and Education	9/1/2016--12/1/2018	\$50,000.00	
Cameron Lindsey	Missouri Telehealth Network	7/1/2015--6/1/2016	\$8,337.68	
Cameron Lindsey	Missouri Telehealth Network	7/1/2015--6/30/2016	\$8,187.50	
Yifei Liu	The American Pharmacists Association Foundation	12/1/2015--06/1/2016	\$1,000.00	
Heather Lyons-Burney	ACT Missouri	6/1/2016--7-1-2017	\$4,804.76	
Heather Lyons-Burney	Drug Responsibility education and Advocacy Movement (DREAM Coalition)	04/01/2016--6-30-2016	\$1,000.00	
Heather Lyons-Burney	City of Branson	01/01/2016--01/01/2017	\$12,000.00	
Ashim Mitra	Anida Pharma Inc.	2/1/2016--1/31/2018	\$119,700.00	
Ashim Mitra	University of KS Med Center Research Institute	3/1/2015 - 2/29/2016	\$10,000.00	
Mridul Mukherji	US Army Medical Research	6/20/2013–6/19/2018	\$284,025.00	\$89,757.00
Mridul Mukherji	St Luke’s Hospital	2/1/2013–01/31/2016	\$26,000.00	
Leigh Anne Nelson	The Feinstein Institute For Medical Research	9/21/2011–3/1/2016	\$77,217.00	
Leigh Anne Nelson	The Feinstein Institute For Medical Research	4/1/2014-2/28/2017	\$9,171.00	\$2,385.00
Leigh Anne Nelson	The Feinstein Institute For Medical Research	1/1/2015-3/31/2016	\$15,402.00	\$4,005.00
Leigh Anne Nelson	Janssen Scientific Affairs LLC	12/21/2015-05/9/2018	\$2,500.00	
Leigh Anne Nelson	Janssen Scientific Affairs LLC	12/21/2015-05/9/2018	\$990.00	\$257.40
Leigh Anne Nelson	Teva Pharmaceutical Industries Ltd	1/30/2015 – 1/30/2016	\$20,917.00	
Mark Patterson	American Association of Colleges of Pharmacy	1/1/2016 – 12/31/2016	\$5,920.00	
Roger Sommi	Auspex Pharmaceuticals	8/1/2014–7/31/2017	\$33,297.00	\$10,3225.00
Roger Sommi	Auspex Pharmaceuticals	1/21/2015-12/31/2016	\$3,500.00	
Roger Sommi	Auspex Pharmaceuticals	1/21/2015-12/31/2016	\$24,756.00	\$7,674.00
Roger Sommi	Florida Atlantic University	8/1/2015-7/31/2017	\$2,500.00	
Roger Sommi	Florida Atlantic University	8/1/2015-7/31/2017	\$9,196.00	\$2,391.00
Roger Sommi	Alkermes INC	1/11/2015-1/10/2016	\$3,500.00	
Roger Sommi	Alkermes INC	1/11/2015-1/10/2016	\$5,856.00	\$1,815.00
Roger Sommi	Janssen Scientific Affairs LLC	9/4/2016 – 6/30/2017	\$0.00	
Heather Taylor	ACT Missouri	7/01/2016 --	\$5,000.00	
BiBotti Celestin Youan	NIH National Institute of Allergy And Infectious Diseases	8/20/2011–07/31/2016	\$1,013,786.00	\$371,081.00
BiBotti Celestin Youan	Fastrack Technology for Pharmaceuticals	06/30/2016 - 05/31/2017	\$50,000.00	
TOTAL			\$6,740,940.47	\$2,452,202.73

School of Pharmacy Faculty Scholarly Activity.

Peer-Reviewed National and International Journal Research and Literature Review

Articles. The following are publications with a print date of 2016 including articles in peer-reviewed national and international journals, book chapters, and other scholarly work, such as viewpoints and brief research reports. School of Pharmacy faculty names are bolded.

University of Missouri – Kansas City, School of Pharmacy Number of Scholarships Awarded By Class Fall 2016			
Division	Posters and Presentations	Research Manuscripts	Book Chapters
Pharmaceutical Sciences	12	13	2
Pharmacology and Toxicology	1	5	0
Pharmacy Practice and Administration	101	12	5
Total	114	30	7

Note: Some publications and posters are cross-divisional.

Book Chapters in 2016.

Barnes KN, Yancey AM. Menopause Transition. *Pharmacotherapy Self-Assessment Program: 2016 Book 3 Men and Women's Health*. Murphy J, Lee M, eds. Lenexa, KS: American College of Clinical Pharmacy, 2016.

Hardinger KL, Igha IA, Brennan DB. Immunosuppressive agents. In: Ljungman P, et al. editors. *Transplant Infections*, 4th edition. (pp. 31-46). Switzerland: Springer International Publishing, Switzerland, 2016.

Graham MR and Aistrop D. Overweight and Obesity. In: *Pharmacotherapy Principles and Practice*. 4th ed. Chisholm MA, Schwinghammer TL, Wells BG, Malone PM, Kolesar JM and Dipiro JT, eds., (pp. 1523-1533). New York, NY: McGraw-Hill, Inc., 2016.

Byeongtaek Oh and **C.H. Lee**. In vitro coating of cardiovascular stents with cells (EPCs). Gerard Wall, Halina Podbielska and Magdalena Wawrzynska (& Laura Overend: Acquisitions Editor) *Functionalized cardiovascular stents*. Chapter 15. Elsevier, 2016.

McQueen CE. Complementary and Alternative Therapies. *Pharmacotherapy Casebook: A Patient-Focused Approach*. 10th edition. Schwinghammer TL and Koehler JM, editors. New York City, NY: McGraw-Hill, 2016.

Ramya Krishna Vadlapatla, **Dhananjay Pal**, **Ashim K. Mitra**. Uptake and Permeability Studies to Delineate the Role of Efflux Transporters: Jose Rueff and Antonio Sebastiao Rodrigues (Editors) *Cancer Drug Resistance Overviews and Methods, Methods in Molecular Biology*, 1395(5), (pp. 69-74). New York, NY: Springer Publishing, 2016.

Stoner SC, **Ruehter VL**. Eating Disorders, *Pharmacotherapy: A Pathophysiologic Approach*, 10th Edition. (Chapter 64) New York, NY: McGraw-Hill, Inc., 2016.

Refereed Original Research Publications in 2016.

Shah A, Vaidya NK, **Bhat HK** and **Kumar A**. HIV-1 gp120 induces type-1 programmed cell death through ER stress employing IRE1 α , JNK and AP-1 pathway. *Scientific Reports*. 2016; 6:18929.

Ronghe, A., Chatterjee, A., Dandawate, P., Murphy, L., Padhye, S., and **Bhat, H.K.** (2016). 4-(E)-{(p-tolylimino)-methylbenzene-1, 2-diol}, a novel resveratrol analog differentially regulates estrogen receptors α and β in breast cancer cells; *Toxicol. Appl. Pharmacol.*, 301:1-13 [PMID: 26970359]. (IF 3.7).

Ronghe A, Chatterjee A, Bhat NK, Padhye S, and **Bhat HK**. Tamoxifen synergizes with 4-(E)-{(4-hydroxyphenylimino)-methylbenzene, 1, 2-diol} and 4-(E)-{(p-tolylimino)-methylbenzene-1,2-diol}, novel azaresveratrol analogs, in inhibiting the proliferation of breast cancer cells. *Oncotarget*. 2016; 7(32): 51747–51762.

Brownfield AS, Garavalia L, **Gubbins PO**, **Ruehter V**. Exploration of Methods Used by Pharmacy Professional Programs to Contract with Experiential Rotation Sites. *American Journal of Pharmaceutical Education*. 2016; 80(2): Article 26.

Cahn PS, **Bzowyckyj AS**, Collins L, Dow A, Goodell K, Johnson A, Klocko D, Knab M, Parker K, Reeves S, Zierler BK. A design thinking approach to evaluating interprofessional education. *Journal of Interprofessional Care*. 2016; 30(3):378–80.

Jin W, Qin B, Chen Z, Liu H, Barve A, **Cheng K**. Discovery of PSMA-Specific Peptide for Targeted Drug Delivery to Prostate Cancer. *International Journal of Pharmaceutics*. 2016; 513(2): 138–147 (*Highlighted by Uro Today on 09/08/16*).

Barve A, Jain A, Liu H, Jin W, **Cheng K**. An Enzyme-Responsive Conjugate Improves the Delivery of a PI3K Inhibitor to Prostate Cancer. *Nanomedicine: Nanotechnology, Biology, and Medicine*. 2016; 12(8), 2373–2381.

Shukla RSS, Jain A, Zhao Z, **Cheng K**. Intracellular Trafficking and Exocytosis of a Multi-Component siRNA Nanocomplex. *Nanomedicine: Nanotechnology, Biology, and Medicine*. 2016; 12(5): 1323–1334.

Cochran KA, **Ottis EJ**, Aistrope DS, Garavalia LS, **Graham MR**. Implementation and evaluation of activities to foster a sense of community among pharmacy students. *Currents in Pharmacy Teaching and Learning*. 2016; 8(3): 305-315.

Regunath H, **Cochran KA**, Cornell K, Shortridge J, Kim D, Akbar S, Boshard B, Chitima-Matsiga R, Reddy J, Keithahn S, Koller JP. Is it painful to manage chronic pain? A cross-sectional study of physicians in-training in a university program. *Missouri Medicine*. 2016; 113(1): 72-78.

Sarode BR, Kover K, Tong PY, Zhang C, **Friedman SH**. Light Control of Insulin Release and Blood Glucose Using an Injectable Photoactivated Depot *Macromolecular Bioscience*. 2016; 13(11), 3835–3841.

Sarode B, Jain PK, **Friedman SH**. Polymerizing Insulin with Photocleavable Linkers to Make Light-Sensitive Macropolymer Depot Materials. *Macromolecular Bioscience*. 2016; 16(8): 1138-1146 (Featured on Back Cover).

- Heldenbrand SD, Flowers SK, Bordelon BJ, O'Brien C, **Gubbins PO**, Stowe CD, Martin BC. (2016). Multiple mini-interview performance predicts academic difficulty in the Pharm D curriculum. *American Journal of Pharmaceutical Education*. 2016; 80(2), Article 27.
- Heldenbrand SD, Martin BC, **Gubbins PO**, Hadden K, Renna C, Shilling R, Dayer LE. Assessment of medication adherence apps' features, functionality, health literacy level and the creation of a searchable web-based adherence app resource for health care professionals and patients. *Journal of the American Pharmacists Association*. 2016; 56(3): 293–302.
- Vemula H, Ayon NJ, and **Gutheil WG**. Cytoplasmic peptidoglycan intermediate levels in *Staphylococcus aureus*. *Biochimie*. 2016; 121: 72-78.
- Morris G, **Hardinger KL**, Tsapepas D, Tichy E. A comparison of histamine receptor antagonist versus proton pump inhibitor stress ulcer prophylaxis in kidney transplant recipients. *Prog Transplant*. 2016; 27(1): 4–9.
- Zabihi NA, **Johnston TP**, Sahebkar A. Is there a role for curcumin supplementation in the treatment of non-alcoholic fatty liver disease? The data suggest yes. *Current Pharmaceutical Design*. 2016; 23(7): 969–982.
- Korolenko TA, **Johnston TP**, Lykov AP, Shintyapina AB, Khrapova MV, Goncharova NV, Korolenko E, Machova E, Nescakova Z, Bgatova NP. A comparative study of the hypolipidemic effects of a new polysaccharide, mannan *C. albicans* serotype A, and atorvastatin in mice with poloxamer 407 induced hyperlipidemia. *A Journal of Pharmacy and Pharmacology*. 2016; 68(12): 1516-1526.
- Nookala AR, Li J, Ande A, Wang L, Vaidya NK, Li W, Kumar S, **Kumar A**. Effect of Methamphetamine on Spectral Binding, Ligand Docking and Metabolism of Anti-HIV Drugs with CYP3A4. *PLoS One*. 2016; 11(1), e0146529.
- Shah A and **Kumar A**. Methamphetamine-mediated endoplasmic reticulum (ER) stress induces type-1 programmed cell death in astrocytes via ATF6, IRE-1 α and PERK pathway. *Oncotarget*. 2016; 7(29):46100–46119.
- Oh B and **Lee CH**: Development of Thiolated-Graphene Quantum Dots for Regulation of ROS in macrophages. *Pharmaceutical Research*. 2016; 33(11): 2736-47.
- Giri N, Oh B, **Lee CH**: Stimuli-sensitive nanoparticles for multiple anti-HIV microbicides. *Journal of Nanoparticle Research*. 2016; 18: 140.
- Wong KR, **Nelson LA**, Elliott ESR, Liu Y, **Sommi RW**, Winans EA. Utilization of antipsychotic therapeutic drug monitoring at a state psychiatric hospital. *Mental Health Clinician*. 2016; 6(1): 1-7.
- Gardner KN, Diefenderfer LA, **Nelson LA**, Iuppa C, Elliott E, Kleinhesselink K, Sass D, **Sommi RW**. (2016). Cost avoidance and qualitative analysis of clinical pharmacy interventions by psychiatric pharmacy residents at state psychiatric facilities. *American Journal of Health-System Pharmacy*. 2016; 73(1): e46-e53.

Ottis E and Gregory G. An interprofessional nursing and pharmacy student simulation in acute pain management. *Pharmacy Education*. 2016; 16(1): 18–25.

Patterson ME, Pace HA. (2016). A Cross-sectional Analysis Investigating Organizational Factors That Influence Near-Miss Error Reporting Among Hospital Pharmacists. *Journal of Patient Safety*. 2016: 12(2), 114-7.

Patterson-ME, Miranda-D, Schuman-GL, Eaton-CM, **Smith-AJ**, and Silver- B. “A Focus Group Exploration of Automated Case-Finders to Identify High-Risk Heart Failure Patients within an Urban Safety- NetHospital,” *eGEMs (Generating Evidence & Methods to improve patient outcomes)*. 2016; 4(3): Article 11.

Youm I, Musazzi UM, Gratton MA, Murowchick JB, & **Youan B-BC**. Label-Free Ferrocene-Loaded Nanocarrier Engineering for In Vivo Cochlear Drug Delivery and Imaging. *Journal of Pharmaceutical Sciences*. 2016; 105: 3162–3171.

Agrahari V, Meng J, Ezoulin MJ, Youm I, Dim DC, Molteni A, **Youan B-BC**. Stimuli-sensitive thiolated hyaluronic acid based nanofibers: synthesis, preclinical safety and in vitro anti-HIV activity. *Nanomedicine (London)*. 2016; 11(22): 2935–2958.

Meng, J, Agrahari, V, Ezoulin, MJ, Zhang, C, Purohit SSS, Molteni A, **Youan B-BC**. Tenofovir Containing Thiolated Chitosan Core/Shell Nanofibers: In Vitro and in Vivo Evaluations. *Molecular Pharmaceutics*. 2016; 13(11): 4129–4140.

Faculty Peer Reviewed Articles in 2016.

Shah A, Gangwani MR, Chaudhari NS, Glazyrin A, **Bhat HK** and **Kumar A**. Neurotoxicity in the post-HAART era: Caution for the antiretroviral therapeutics. *Neurotoxicity Research*. 2016; 30(4): 677–696.

Brownfield, A., Ludwig S, Butkievich L, Camden R, Koerner J, Sommi, RW. Many Doors, One Key: An IPPE Collaboration Targeting APPE Readiness, Faculty Workload, and Patient Outcomes. *American Journal of Pharmaceutical Education*. 2016; 80(2): Article S2.

Bzowyckyj AS. Embracing the insulin revolution in the ambulatory care setting. *Diabetes Spectrum*. 2016; 29(3):140–145.

Janke KK, Nelson MH, **Bzowyckyj AS**, Fuentes DG, Rosenberg E, Dicenzo R. Deliberate integration of student leadership development in Doctor of Pharmacy programs. *American Journal of Pharmaceutical Education*. 2016; 80 (1), Article 2.

Jin W, Barve A, **Cheng K**. PSMA-Specific Ligands in Prostate Cancer Diagnosis and Therapy. *European Medical Journal Urology*. 2016; 4(1): 62-69. (selected as the ‘Editor’s Pick’ by the Editor-in-Chief.)

Hardinger, KL, Sunderland D, Wiederrich J. Belatacept: A comprehensive review of safety and efficacy in kidney transplantation. *International Journal of Nephrology Renovascular Disease*. 2016; 9: 139–50.

Korte C, Garber J, Descourouez J, Richards K, **Hardinger KL**. Pharmacists' guide to organ donor management. *American Journal of Health-System Pharmacy*. 2016; 73(18): 1829–1839.

- Panahi, Y. Ahmadi Y, Teymouri M, **Johnston TP**, Sahebkar A. Curcumin as a potential candidate for treating hyperlipidemia: a review of cellular and metabolic mechanisms. *Journal of Cellular Physiology*. 2016; 233(1): 141–152.
- Teymouri M, Pirro M, **Johnston TP**, Sahebkar A. Curcumin as a multifaceted compound against human papilloma virus infection and cervical cancers: a review of chemistry, cellular, molecular, and preclinical features. *BioFactors*. 2016; 43(3): 331–346.
- Momtazi AA, Shahabipour F, Khatibi S, **Johnston TJ**, Pirro M, Sahebkar A. Curcumin as a microRNA regulator in cancer: a review. *Reviews of Physiology, Biochemistry, and Pharmacology*. 2016; 171: 1-38.
- Mandal A, Pal D, **Mitra AK**. Circumvention of P-gp and MRP2 mediated efflux of lopinavir by a histidine based dipeptide prodrug. *International Journal of Pharmaceutics*. 2016; 512 (1): 49–60.
- Cholkar K, Gilger BC, **Mitra AK**. Topical delivery of aqueous micellar resolvin E1 analog (RX-10045). *International Journal of Pharmaceutics*. 2016; 498 (1): 326–334.
- Lindsey CC**, Rodman, E. (2016). Development of an Assessment Process for a Co-Curriculum through Mapping, Surveys, and Focus Groups. *AJPE*. 2016; 80 (5), Article S2: 58-9.
- McQueen CE**. Cannabinoid Medicine in Missouri: A Brief Introduction. *Missouri Pharmacist*. 2016; 90(3): 27-29.
- McQueen CE**. Dietary supplements: defective products, defective standards. *Hospital Pharmacy*. 2016; 51(3): 195-198. *Invited editorial*.
- Melchert RB**. Scope of Practice: Pharmacists are providing more patient care services than ever, but their scope of practice still has room to grow. *Elements*. 2016; 5(2): 6-7.
- Vavilala DT, Subhani S, **Mukherji M**. HIF inhibitors for ischemic retinopathies and cancers: options beyond anti-VEGF therapies. *Angiogenesis*. 2016; 19(3): 257-73.
- Naglich A, **Nelson LA**, Hornstra R. Two cases of iloperidone-related tardive dyskinesia. *Journal of Clinical Psychopharmacology*. 2016; 36(6): 742-743.
- Shah A and **Kumar A**. Zika virus infection and development of a murine model. *Neurotoxicity Research*. 2016; 30(2): 131-134.
- Shah A and **Kumar A**. HIV-1 gp120-mediated mitochondrial dysfunction and HIV-associated neurological disorders. *Neurotoxicity Research*. 2016; 30(2): 135-137.

Faculty Peer Reviewed Case Studies in 2016.

- Hill JD, **Wombwell E**, Miller J, Rochetti GM. Tetanus: A Case Report following an Upper Extremity Injury. *Clinical Medical Reviews and Case Reports*: 2016; 3(2): 90–93.

Faculty Non-Peer Reviewed Publications in 2016.

Gregory JR, **Barnes KN**. Flibanserin. *ACCP Women's Health Practice and Research Network Winter Newsletter*. Epub.

Bzowyckj AS, Cornell S. Eleven things every clinician should know about the Egregious Eleven. *iForumRx*. 2016. <http://www.iforumrx.org/node/348>.

Bzowyckj AS. Concentrated insulin – U-500 making a comeback?! *American Association of Diabetes Educators – Pharmacy Community of Interest Blog*. 2016. <http://www.myaadenetwork.org/p/bl/ar/blogaid=1489> [membership required].

Snodgrass C, **Stahnke A**. Steroid Induced Hyperglycemia. *American Association of Diabetes Educators*. Website. November 2016.

Beard M, **Stahnke A**. Glycemic Control among Patients with Gestational Diabetes. *American Association of Diabetes Educators*. Website. September 2016.

Schneider L, **Stahnke A**. (2016). Insulin Storage during the Summer Months. *American Association of Diabetes Educators*. Website. August 2016.

Silverstein, PS, Aljouda, NA, **Kumar, A**. Recent developments in vertical transmission of Zika virus. *Oncotarget*. 2016; 7(39): 62797-62798.

Taylor H. Pharmacists Role in Transitions of Care. *Missouri Society of Health System Pharmacists Newsletter*. August 2016.

Faculty Presentations and Posters in 2016.

Barnes KN, Graham MR. *Impact of Teaching OSCE Implementation on Student Performance in a Pharmacotherapy Course* (Poster). American College of Clinical Pharmacy. Hollywood, FL, October 25, 2016.

Barnes KN. *Contraception in Perimenopausal Women: Who, what, when, where, why, and how?* American College of Clinical Pharmacy. Hollywood, FL, October 24, 2016.

Barnes KN. *Item Development Workshop: Curriculum Vitae and Letter of Intent*. Missouri Pharmacy Association. Lake of the Ozark, MO, September 23, 2016.

Barnes KN. *Sterile Products Used During Delivery and the Postpartum Period: An update in Pregnancy CE*. Continuing Education Presentation for Pharmacists and Pharmacy Technicians at PharMEDium (online platform). February 17, 2016.

Abdalla F, Nookala A, **Kumar A**, and **Bhat HK**. *Resveratrol analog TIMBD modifies HIV gp120 associated inflammation in astrocytes*. Society of Neuroscience, San Diego, CA, November 14, 2016.

Brownfield, A. *Effective Feedback, Preceptor Development*. Missouri Society of Health System Pharmacists, St. Louis, MO. September 28, 2016.

- Brownfield A**, Ludwig S, Butkievich L, Camden R, **Koerner J**, **Sommi R**. (2016). *Many Doors, One Key: An IPPE Collaboration Targeting APPE Readiness, Faculty Workload, and Patient Outcomes*. American Association of Colleges of Pharmacy. Anaheim, CA, July 27, 2016.
- Lu W, **Bryant P**, **Sperry M**, and **Pace H**. *Pharmacy Students' Exposure to Career Options in the Pharmaceutical Industry*. Medical Affairs and Scientific Communications (Poster). Kissimmee, FL, March 21, 2016.
- Bzowyckyj A**, Aquilante C, Drees B. MeRIT. *Leveraging the electronic medical record to identify predictors of attendance to a Diabetes Self-Management Education (DSME) program* (methodology). American College of Clinical Pharmacy. Hollywood, FL, October 23, 2016.
- Bzowyckyj A**, Cascone V, Rodman E. *Clinical and programmatic outcomes of a Diabetes Self-Management Education (DSME) program*. American Association of Diabetes Educators. San Diego, CA, August 13, 2016.
- Bzowyckyj A**. *Diabetes Medicines and New Insulin Therapies*. Diabetes Educator Retreat, Kansas City, MO, November 15, 2016.
- Leffert J, Lewis C, Parrish DM, **Bzowyckyj A**, Farhat M, Grunberger G. *Patient Access to Medications*. American Association of Clinical Endocrinologists. Boston, MA, October 10, 2016.
- Bzowyckyj A**. *DPPA Legislative & Policy Update*. UMKC Division of Pharmacy Practice & Administration. Kansas City, MO. June 15, 2016.
- Bzowyckyj A**. *New Insulin Delivery Recommendation*. Truman Medical Centers Endocrinology Section Meeting. Kansas City, MO, October 07, 2016.
- Bzowyckyj A**. *Pioglitazone use and risk of bladder cancer: a population based cohort study*. Truman Medical Centers Endocrinology Section Meeting. Kansas City, MO, May 28, 2016.
- Bzowyckyj A**. *Empagliflozin, Cardiovascular Outcomes, and Mortality in Type 2 Diabetes (EMPA-REG OUTCOME) – a critical review*. Truman Medical Centers Endocrinology Section Meeting. Kansas City, MO, January 17, 2016.
- Bzowyckyj A**. *Provider Status – Fact or Fiction?* Missouri Pharmacy Association Annual Meeting. Osage Beach, MO, September 29, 2016.
- Bzowyckyj A**. *Mellitus* Co-Presenter S Cornell. *Individualizing Insulin Therapy for Type 2 Diabetes*. American Society of Health-System Pharmacists Advantage Program Live Continuing Education (online platform). August 24, 2016.
- Bzowyckyj A**. Co-Presenter (A Crowl). *Diabetes Management across the Spectrum of Kidney Function* American Association of Diabetes Educators. San Diego, CA. August 09, 2016.
- Bzowyckyj A**. *Maximizing Communication Opportunities That Empower Patients to Take Control of Their Health*. Kansas Pharmacists Association / Community Health Council of Wyandotte County CPE Program Live Continuing Education. Kansas City, KS, May 12, 2016.
- Bzowyckyj A**. *Reimbursement Strategies for Ambulatory Care Pharmacist Services*. Kansas Council of Health-System Pharmacy & Missouri Society of Health-System Pharmacy. Kansas

City, MO, April 15, 2016.

Bzowickyj A. Co-Presenter: K. Snella, **P. Kuehl**, **S. Schauner**, K. DiDonato. *Delivering Medication Therapy Management in the Community – APhA Certificate Program*. Live Continuing Education, UMKC School of Pharmacy MU. Columbia, MO, January 31, 2016.

Barve A, Jain A, Liu H, Jin W, **Cheng K.** *Development of an Enzyme-Responsive Drug Conjugate for Prostate Cancer*. American Association of Pharmaceutical Scientists. Denver, CO, November 15, 2016.

Zhao Z, Li Y, **Cheng K.** (2016, November). *Development of Nanocomplex for Hepatic Stellate Cells with High Binding Affinity Ligands*. American Association of Pharmaceutical Scientists. Denver, CO, November 16, 2016.

Cheng K. *Opportunities and challenges of using siRNA in breast cancer therapy* Regional Translational Medicine Meeting. Kansas City, MO, April 03, 2016.

Cheng K. *Avidin-Based Nanocomplex for siRNA Delivery*. American Association of Pharmaceutical Scientists National Biotechnology Conference. Boston, MA, May 15, 2016.

Cochran K. *Training student pharmacists to become partners in agricultural health and safety*. Midwest Rural Agricultural Safety & Health Conference. Sioux Center, IA, November 02, 2016.

Cochran K. *Pharm to Farm: on-site farmstead medication management to improve the health and medication safety of farmers* (Poster). American College of Clinical Pharmacy. Hollywood, FL, October 24, 2016.

Cochran K. *Linking Education and Care: Preparing Teams to Improve Care. Round Table Speaker T3 Train-the-Trainer Faculty Development Program: Interprofessional Education Faculty Development for Educators* University of Missouri School of Medicine. Columbia, MO, September 15, 2016.

Cochran K. *Pharm to Farm: Making Clinical Pharmacy Services Accessible to Missouri Farmers*. Missouri Pharmacy Association Annual Meeting. Osage Beach, MO, September 21, 2016.

Cochran K. *Applied Clinical Skills in Pharmacy*. UMKC Pharmacy Camp. In collaboration with **Angela Brownfield**. University of Missouri-Kansas City School of Pharmacy at MU. Columbia, MO, July 29, 2016.

Cochran K. *Pain Management in Primary Care*. Internal Medicine Grand Rounds In collaboration with Robert Lancey, Clayton Butcher, Laura Henderson-Kelley, and Abby Emerson. University of Missouri School of Medicine. Columbia, MO, May 19, 2016.

Cochran K. *Diving into the DPP4-Inhibitor Adverse Effects*. Endocrine Fellow Didactic Cosmopolitan International Diabetes and Endocrinology Center. University of Missouri. Columbia, MO, April 20, 2016.

Cochran K. *SGLT2-Inhibitors*. Endocrine Fellow Didactic Cosmopolitan International Diabetes and Endocrinology Center. University of Missouri. Columbia, MO. March 04. 2016.

- Cox SR.** *Health Literacy in the Heart Failure Population.* Midwest Pharmacy Residency Conference. Omaha, NE, May 15, 2016.
- Cox SR.** *Billing for Pharmacy Services.* Houston Methodist Hospital Pharmacy Staff. Houston, TX, January 14, 2016.
- Fox L, **Englin E.** *Impact of admission pharmacy services on patient care transitions in a community hospital setting.* American Society of Health-System Pharmacists Midyear Clinical Meeting and Exhibition. Las Vegas, NV, December 14, 2016.
- Friedman SH.** *Controlling Biomedical Processes with Light.* California Institute of Technology. Pasadena, CA, March 16, 2016.
- Friedman SH.** *The Minimally-Invasive and Controlled Delivery of Insulin with Light.* Kansas City Life Sciences Regional Translational Medicine Meeting. Kansas City, MO, April 04, 2016.
- Friedman SH.** *Controlled Delivery of Insulin Without Pumps or Cannulae: Successful In-Vivo Demonstration of the Insulin Photoactivated Depot.* NIH Fourth Artificial Pancreas Workshop, NIH. Bethesda, MD, July 14, 2016.
- Graham MR.** *Assessment of Student Performance.* UMKC School of Pharmacy Residency Teaching Certificate Program. Kansas City, MO, November 17, 2016.
- Marken PA, Graham MR, Hardinger KL, Janasz SM, Nelson LA, Melchert RB.** *Addressing Retention Challenges – One School’s Experience with a Student Success Program* (Poster). American Association of Colleges of Pharmacy. Anaheim, CA, July 27, 2016.
- Gubbins PO.** *Introducing the UMKC School of Pharmacy at MSU.* Rotary Club of Downtown Springfield. Springfield, MO, February 01, 2016.
- Gubbins PO.** *Adult pneumococcal vaccinations: The vital role of the pharmacist in improving outcomes.* Live SIDP/ProCE National Webinar for Pharmacists Universal Activity Number 0221-9999-16-323-L01-P (online platform). October 27 and November 2, 2016.
- Hardinger KL, Dalal PK, Murillo DM.** *Rabbit anti-thymocyte in simultaneous kidney-pancreas transplantation: does duration matter?* World Transplant Congress. Hong Kong, August 28, 2016.
- Holt K.** *Real-world application of once daily self-titration of insulin at an Academic Family Medicine Clinic.* Southeastern Residency Conference (SERC) Athens, GA, May 31, 2016.
- Johnston TP, Korolenko T, Tuzikov F, Tuzikova N, Pupyshv A, Spiridonov V, Goncharova N, Maiborodin I, Zhukova N.** *Early-stage atherosclerosis in poloxamer 407-induced hyperlipidemic mice: pathological features and changes in the lipid composition of serum lipoprotein fractions and subfractions.* American Association of Pharmaceutical Scientists. Denver, CO, November 15, 2016.
- Kasper B.** *The Role of the Ambulatory Care Pharmacist in the VA.* American Pharmacists Society-Academy of Student Pharmacists, UMKC School of Pharmacy. Columbia, MO, April 20, 2016.
- Kasper B.** *Current Controversies in Lipid Management.* HSTVA pharmacists and pharmacy students. Columbia, MO, February 24, 2016.

Knell M. *Pharmacology Part II*. University of Missouri Dental School National Board Dental Examination Part II Online Review Course, Nationally available course at <https://www.cewebinar.com/umkc/> (online platform). Kansas City, MO, June 19, 2016.

Knell M. *Developing a Game Plan for the Management of Chronic Pain: Outlining Strategies for the Pharmacist's Playbook*. Missouri Pharmacy Association Annual Conference and Expo. Lake of the Ozarks, MO, September 18, 2016.

Knell M. *Influenza, Pneumococcal, Varicella and Zoster vaccinations*. Pharmacy-based Immunization Delivery Training for Pharmacists (American Pharmacists Association Training Program). University of Missouri–Kansas City. Kansas City, MO, June 18, 2016.

Koerner J. *New Drugs on the Block*. 38th Annual Family Medicine Update University of Missouri Health Care Family Medicine Audience. Columbia, MO, April 13, 2016.

Ravin A, Bergin L, **Koerner J**, Yancey AM, Brinkmeyer J, Dingman JS, Miller C, Thompson J, Bilyeu A, Forinash AB. *Rates of Adherence to Tdap Vaccination Guidelines in Pregnancy*. American Congress of Obstetrics and Gynecology Annual and Clinical Meeting. Washington, DC, May 16, 2016.

Barry A, **Kuehl PG**. *A feasibility study to implement a transition of care service in a community pharmacy*. American Pharmacists Association. Baltimore, MD. March 15, 2016.

Mattingly A, Blom J, **Liu Y, Kuehl PG**. *Identification of medication-related problems by community pharmacists in patients taking oral anticancer medications*. American Pharmacists Association. Baltimore, MD. March 16, 2016.

Yeruva T, Oh B, and **Lee CH**. (2016, November). *Development of Mucus Penetrating Carriers for vaginal drug delivery*. American Association of Pharmaceutical Scientists. Denver, CO, November 15, 2016.

Giri N, Yeruva T, and **Lee CH**. (2016, November). *Surface Engineered Nanoparticles for Mucosal Microbicide Delivery*. American Association of Pharmaceutical Scientists. Denver CO, November 17, 2016.

Oh B, Yeruva T, and **Lee CH**. *Development and evaluation of a theranostic nano-carrier against lipid-laden macrophages*. American Association of Pharmaceutical Scientists. Denver CO, November 16, 2016.

Lindsey CC, Rodman, E. *Development of an Assessment Process for a Co-Curriculum through Mapping, Surveys, and Focus Groups*. American Association of Colleges of Pharmacy. Anaheim, CA, July 10, 2016.

Burton L, Diman M, Egli D, **Lindsey C**, Miller S, Tunstill T, and Washburn, L. *The Development of a Systematic Process to Increase Rates of Adult Vaccinations Delivered through a Federally Qualified Health Center, a Public Health Department, and a School of Pharmacy Partnership*. Missouri Public Health Association. Columbia, MO, September 29, 2016.

- Wen L, Yang L, **Liu Y**, Wu J. *Comparing the hospitalization and rehospitalization expenditures of myocardial infarction patients in Beijing, 2012-2013*. 19th Annual European Congress. Vienna, Austria, October 30, 2016.
- Liu Y**, Cai J, Okah FA. *Asians' mental health status in a U.S. Midwestern metropolis, 2004 -2013* (Poster) International Society for Pharmacoeconomics and Outcomes Research 7th Asia-Pacific Conference. Singapore, September 17, 2016.
- Walker RE, **Nelson LA**, **Liu Y**, McKinley C, Iuppa C, Diefenderfer LA, Elliott E, **Sommi RW**. *Medication formulation preference and acceptability for the treatment of acute agitation in a psychiatric population*. Midwest Social and Administrative Pharmacy Conference. Ann Arbor, MI, August 30, 2016.
- Mattingly AM, Blom J, **Liu Y**, **Kuehl PG**. *Identification of medication-related problems by community pharmacists in patients taking oral anticancer medications*. Annual Midwest Pharmacy Residents Conference, Omaha, NE. May 18, 2016.
- Patton AP, **Liu Y**, Hartwig DM, May JR, Stoner SC, **Guthrie KD**. *Impact of community pharmacist-led transitions of care services on rural hospital readmission rates: a pilot study*. Annual Midwest Pharmacy Residents Conference. Omaha, NE, May 19, 2016.
- Liu Y**, Skup M, Lin J, Chao J. *Impact of non-medical switching on healthcare costs: a claims database analysis. Encore electronic poster presentation of research*. Annual Meeting of the American Academy of Dermatology. Washington, DC, March 15, 2016.
- Lyon-Burney H**. *Impact of Access to Pharmacy Services on Diabetes in an Underserved Population*. American Association of Colleges of Pharmacy/Nonprescription Medicines Academy Conference. February 13, 2016.
- Lyons-Burney H**. *Aligning priorities with the Million Hearts Initiative*. Million Hearts Conference, Missouri Pharmacy Association. Springfield, MO, October 12, 2016.
- McClaskey DM**. *Decision 2017: On the Road to Residency*. Keynote speaker for UMKC Student Society of Health System Pharmacists Residency Roundtable. Kansas City, MO, October 18, 2016.
- McClaskey DM**. *Precepting – Going for Gold!* Missouri Pharmacy Association Conference. Lake of the Ozark, MO, September 23, 2016.
- McClaskey DM**. *MSHP Technician PAI Workshop*. MSHP/KCHP Spring Meeting. Columbia, MO, April 15, 2016.
- Melchert, RB**. Deans Networking Session III: *Fostering an Entrepreneurial Spirit in Schools of Pharmacy*. American Association of Colleges of Pharmacy Annual Meeting. Anaheim, CA, July 18, 2016.
- Nelson LA**. *Second Generation Antipsychotic Long-acting Injectables: Potential Benefits and Obstacles to Appropriate and Effective Utilization*. Annual Meeting of the College of Psychiatric and Neurologic Pharmacists. Colorado Springs, CO, April 28, 2016.
- Naglich A, **Nelson LA**, Iuppa C, Diefenderfer LA, Elliott E, **Sommi RW**. *Clinical Utilization of Plasma Insulin Levels in Forensic Inpatient Psychiatric Practice*. Annual

Meeting of the College of Psychiatric and Neurologic Pharmacists. Colorado Springs, CO, April 17, 2016.

Ottis E. *A Taste of the T3 Program.* National Center for Interprofessional Practice and Education NEXUS Summit. Minneapolis, MN, August 06, 2016.

Ottis E and Odegard P. (2016, July). *Interprofessional Faculty Development—A Train-the-trainer Model.* American Association of Colleges of Pharmacy Annual Meeting. Anaheim, CA, July 07, 2016.

Pilla D, **Sperry M, Pace H, Bryant P.** *Pharmacy student interest and involvement in provider status efforts.* UMKC Health Sciences Student Research Summit. Kansas City, MO. April 18, 2016.

Pace HA. *Opioid Roundtable.* Town Hall Discussion with Senator Claire McCaskill. Kansas City, MO, July 30, 2016.

Pace HA. *Driving while sleeping, think twice before taking that sleeping pill before going to bed.* Missouri Bar Association, Bernard Edelman DWI Law & Science Conference, Osage Beach, MO. July 10, 2016.

Pace HA. *Statistics Review.* Truman Medical Center Staff. Kansas City, MO, January 13, 2016.

Spoutz PM, Pandya PK, Schaefer MG, **Patterson ME.** *The association between PPI and H2RA use and 12 week sustained viral response (SVR12) in patients with hepatitis C treated with direct acting antivirals.* American Association for The Study of Liver Diseases (AASLD). Boston, MA, November 19, 2016.

Patterson ME, Schuman G, Eaton C, Miranda D, **Smith A,** Silver B. *Exploring the Value of Using Data Mining Tools on Unstructured Clinical Notes to Identify High-Risk Heart Failure Patients.* Academy Health Annual Research Meeting (ARM). Boston, MA, June 13, 2016.

Risner, A. *Integration of a Clinical Pharmacy Team into the Patient Centered Medical Home to Improve Transitions of Care for Missouri Medicaid Patients.* Midwest Pharmacy Residents Conference. Omaha, NE, May 26, 2016.

Risner, A. *Transitions of Care – Ambulatory Care Pharmacist.* Business Plan. CoxHealth leadership, pharmacy team, and students. Springfield, MO, June 18, 2016.

Ruehter VL. *Gearing up for Interprofessional Education in Pharmacy Practice Experiences.* Missouri Society of Health Systems Pharmacists Annual Meeting. Kansas City, MO, April 28, 2016.

Schwartz A, **Santee J,** Hempstead L, Cheng A. *Effects of medication reconciliation on medication-related problems in an ambulatory care setting.* American Society of Health-System Pharmacists Midyear Clinical Meeting. Las Vegas, NV, December 12, 2016.

- Sawkin MT.** *Inquiring Minds Want to Know: PEP vs. PrEP.* Pharmacy Grand Rounds oral presentation for the clinical pharmacy and emergency department staff at Truman Medical Center. Kansas City, MO. September 18, 2016.
- Sawkin MT.** *Coordinated Management and Care Retention Strategies to Transform Patient Outcomes in HIV.* Oral presentation for the Kansas Pharmacist Association's Association of Managed Care Pharmacy Chapter CE program. Overland Park, KS, June 21, 2016.
- Schauner S.** *Hormonal Contraceptives: where do we begin?* Missouri Pharmacy Association Annual Conference and Expo. Osage Beach, MO, September 11, 2016.
- Schauner S.** *Overview of FDA Approved Drugs in 2015.* Osteopathic Family Physicians at the Solutions for Family Medicine Winter Scientific Seminar. Independence, MO, January 22, 2016.
- Lehn J, Angelo K, DeCelles J, **Smith AJ.** *An Evaluation of the Demographics and Management of Patients Discharged with Atrial Fibrillation at an Urban Safety Net Hospital.* ASHP Midyear Clinical Meeting. Las Vegas, NV, December 19, 2016.
- Chittum M, Peterson K, Donovan N, **Smith AJ.** *Evaluation of Post-Percutaneous Coronary Intervention Education at an Urban Safety-Net Hospital.* ASHP Midyear Clinical Meeting. Las Vegas, NV, December 19, 2016.
- Harry KM, Marszalek JM, Eways KR, Clark JMR, **Smith AJ.** *Psychometric Properties of the Cardiac Self-Efficacy Scale Among Underrepresented Patients with Cardiovascular Disease.* Bennett-KK. Association for Psychological Science Annual Meeting. Chicago, IL, May 16, 2016.
- Deffenbaugh-C, Gaul-M, Lam-C, Harrell-M, Ngugi-N, Williams-M, **Smith-AJ.** *Evaluation of Heart Failure Education Consults at an Urban Safety Net Hospital (ENCORE).* KCHP/MSHP Annual Meeting. Kansas City, MO, April 18, 2016.
- Sumner J, **Smith AJ,** Huke T. *Improving appropriate proton-pump inhibitor use in patients on dual antiplatelet therapy.* KCHP/MSHP Annual Meeting. Kansas City, MO, April 19, 2016.
- Clark JMR., Bennett KK, Harry KM., Eways KR, **Smith AJ,** Catley D. *Medication adherence and depressive symptoms in recently discharged patients with heart disease.* Society of Behavioral Medicine Annual Meeting and Scientific Sessions. Washington, DC, March 14, 2016.
- Clark JMR., Bennett KK, Harry KM., Eways KR, **Smith AJ,** Catley D. *Motivational interviewing to improve medication adherence in heart disease patients: Efficacy, acceptability, and barriers.* Society of Behavioral Medicine Annual Meeting and Scientific Sessions. Washington DC, March 13, 2016.
- Sommi RW.** *Brief Psychiatric Rating Scale Training.* Center for Behavioral Medicine/UMKC Department of Psychiatry. Kansas City, MO, November 17, 2016.
- Sommi RW.** *Genomics and Pharmacology.* Annual Psychiatric-Mental Health Update. University of Missouri Sinclair School of Nursing. Columbia, MO, November 04, 2016.
- Sommi RW.** *Psychotropics Made Simple.* KU School of Social Welfare Field Forum, University of Kansas Edwards Campus. Overland Park, KS, October 31, 2016.

- Sommi RW** and Cutler A. *Is It Bipolar Depression? Navigating Diagnosis and a Treatment Option.* College of Psychiatric and Neurologic Pharmacists Annual Meeting. Colorado Springs, CO, April 13, 2016.
- Kerr JE, **Stahnke A**, Rochester C, Mead L. *Weight Loss Medications in Prediabetes and Type 2 Diabetes: Who, When, How?* American Association of Diabetes Educators Annual Meeting. San Diego, CA, August 30, 2016.
- Peterson A, Li C, **Stahnke A**. *Evaluating the use of dalfampridine in veterans with multiple sclerosis.* American Society of Health-System Pharmacists Midyear Clinical Meeting. Las Vegas, NV, December 14, 2016.
- Stahnke A**, Kerr JE, Shealy, KM. *Member Level of Confidence Regarding Anti-obesity Medication Knowledge and Providing Patient Education. Pharmacy Community of Interest (COI).* American Association of Diabetes Educators, San Diego, CA, August 18, 2016.
- Stoner S**. *Psychopharmacology Update for the Treatment of Depression, Bipolar Disorder, and Anxiety Disorders.* Children's Campus of Kansas City for Mental Health America of the Heartland. Kansas City, MO, October 20, 2016.
- Stoner S**. *Psychiatric Medicine in Primary Care.* UMKC School of Nursing and Health Sciences Annual Pharmacology Update. Kansas City, MO, September 09, 2016.
- Stoner S**. *The Art and Science of Effective.* Reviewing co-presenter, AACP Annual Meeting. Anaheim, CA, July 02, 2016.
- Stoner S**. *Careers in Pharmacy.* ASP-ASHP Student Chapter Monthly Meeting, UMKC School of Pharmacy. Kansas City, MO, April 01, 2016.
- Taylor H**. *Exploring Transition of Care Pharmacy Services.* Missouri Pharmacy Association Annual Meeting. Kansas City, MO, September 10, 2016.
- Taylor H**. *Improving Transitions of Care at Mercy Hospital through Pharmacist Involvement.* Mercy Hospital. Springfield, MO, January 16, 2016.
- Leeser K, Chittum M, **Wombwell E**. *Effects of short-term proton pump inhibitors on rates of Clostridium difficile infection.* ASHP Midyear Clinical Meeting and Exhibition. Las Vegas, NV, December 18, 2016.
- Chu M, **Wombwell E**, Peterson K, Briner K, Ngugi N. *Review of patient controlled analgesia orders in a medical and surgical hospital.* ASHP Midyear Clinical Meeting & Exhibition. Las Vegas, NV, December 03, 2016.
- Peterson K, **Wombwell E**, Chu M. *Assessment of student perceptions following incorporation of a recitation period into the pharmacotherapy course series.* ASHP Midyear Clinical Meeting & Exhibition. Las Vegas, NV, December 04, 2016.

Faculty Media Appearances/Interviews.

Gubbins PO. (2016). UMKC School of Pharmacy, MSU Team Up For #BearTheBandaid Interview by KOLR10 News at 5 and 6, <http://www.ozarksfirst.com/news/umkc-school-of-pharmacy-msu-team-up-for-bearthebandaid> October 2016

McQueen CE. (2016). *Changes in Dietary Supplement Use and Evidence* Fox4 in-depth interview with health reporter MerylLin McKean.

Patterson ME. (2016). *The High Costs of Prescription Drugs*. Host: Brian Ellison. Panelists: Dr. Mark E. Patterson, Dr. John C. Hall, Mr. Doug Albers, Mr. Brent Johnson. Up-To-Date. KCUR 89.3 FM. Kansas City, MO. Radio. <http://kcur.org/post/high-cost-prescription-drugs>.

Editorial Boards for 2016.

Bhat, Hari.

- Annals of Pharmacology and Pharmaceutics
- Integrative Journal of Cancer Biology and Research
- Journal of Medical Hypothesis and Research
- Journal of Biochemical and Molecular Toxicology
- Advances in Medicine
- Journal of Pharmacology and Clinical Toxicology

Bzowickyj, Andrew.

- Currents in Pharmacy Teaching and Learning

Cheng, Kun.

- World Journal of Clinical Oncology (associate editor)
- BioMed Research International
- UK Journal of Pharmaceutical and Biosciences
- Journal of NanoMedicine and Applications
- International Scholarly Research Notices
- Liver Research
- BioMed Research International
- Open Pharmaceutical Sciences

Gubbins, Paul.

- Current Medical Research and Opinion (international advisory board)
- Antimicrobial Agents and Chemotherapy
- Pharmacology and Pharmacodynamics of Antifungal Agents, Current Fungal Infection Reports (section editor)
- Current Fungal Infection Reports (associate editor)
- International Journal Pharmacokinetics

Gutheil, William.

- UK Journal of Pharmaceutical Sciences
- Symbiosis Open Journal of Pharmacy and Pharmaceutical Sciences

Hardinger, Karen.

- Conference Papers in Medicine
- Dataset Papers in Medicine
- World Journal of Transplantation

Igwe, Orisa.

- SOJ Anesthesiology and Pain Management
- SOJ Pharmacy and Pharmaceutical Sciences
- UK Journal of Pharmaceutical and Biosciences
- Journal of Biotechnology and Cell Biology
- Journal of Toxicology

Johnston, Thomas.

- Journal of Pharmacy and Pharmacology
- Journal of Ocular Biology, Diseases, and Informatics
- Annals of Pharmacology and Pharmaceutics

Kuehl, Peggy.

- Research in Social and Administrative Pharmacy

Kumar, Anil.

- Journal of Neurovirology
- Journal of Neuroimmune Pharmacology
- Journal of Neuroinflammation
- Scientific Reports
- PLOSone

Lee, Chi.

- Journal 'ImmunoTargets and Therapy' (Honorary Editorial Board)
- Journal of Stem Cell Research & Regenerative Medicine
- Journal of Biomedical Engineering and Informatics (JBEI)
- Henry Journal of Nanoscience, Nanomedicine & Nanobiology
- Journal of Pharmaceutical Analytics & Insights
- World Journal of Methodology
- Journal of Nanoparticle & Nanotechnology

Liu, Yifei.

- Research in Social and Administrative Pharmacy
- Advances in Therapy
- Journal of the American Pharmacists Association (editorial advisory board member)
- Dermatology and Therapy (advisory board member)

Melchert, Russell.

- Toxicology In Vitro
- Cardiovascular Toxicology
- Regenerative Medicine Research

Mitra, Ashim.

- Journal of Ophthalmology & Clinical Research
- Current Updates in Stem Cell Research and Therapy
- Open Access Journal of Pharmaceutical Research
- American Journal of Drug Delivery and Therapeutics
- Annals of Pharmacology & Pharmaceutics
- Pharmaceutical Analytical Chemistry
- Editorial Panel member for EC Ophthalmology
- Journal of Materials & Applied Science
- Pharmaceutical Analytical Chemistry
- Journal of Pharmaceutics, Drug Delivery & Safety
- Annals of Carcinogenesis - Austin Publishing Group
- The Open Access Journal of Science and Technology
- Journal of Pharmacokinetics and Experimental Therapeutics
- Journal of Drug Delivery Science and Technology
- European Journal of Drug Metabolism and Pharmacokinetics
- Experimental Eye Research/Elsevier Editorial System
- OA Drug Design and Delivery (an Open Access Journal)
- Eye Research (Research Signpost-Transworld Research Network)
- Drug Delivery Research
- Pharmaceutical Research
- Expert Opinion on Drug Delivery (Informa Healthcare, UK Limited)
- Recent Patents in Drug Delivery and Formulation
- Ophthalmology and Eye Diseases
- Journal of Epithelial Biology and Pharmacology
- Ocular Drug Delivery in Pharmaceutical Research (guest editor)
- Journal of Ocular Pharmacology and Therapeutics
- Journal of Experimental Pharmacology
- International Journal of Pharmaceutics
- The AAPS Journal
- Clinical Research and Regulatory Affairs
- Current Eye Research
- Current Pharmaceutical Design
- Current Drug Metabolism
- World Journal of Pharmacology

Mukherji, Mridul.

- Dataset Papers in Science, Biochemistry Section, Hindawi Publishing Corporation
- Asian Journal of Pharmacology and Toxicology, Literati Publishers
- Journal of Biotechnology and Cell Biology, Imprints

Pal, Dhananjay.

- Applied Clinical Pharmacology and Toxicology and EC Ophthalmology

Wang, Jianping.

- Neuroscience Journal
- World Journal of Psychiatry
- Journal of Applied Clinical Pharmacology and Toxicology

Acknowledgements

This report is compiled with great appreciation to those who contributed to the collection and organization of the data contained in the 2016 Annual Report. Special mention to Ms. Christine Adams, Ms. Nancy Bahner, Ms. Jana Boschert, Dr. Allan Davis, Dr. Maqual Graham, Ms. Y. Joyce Johnson, Dr. Patricia Marken, Ms. Jackelyn Nofsinger, Ms. Jane Poe, Dr. Valerie Ruehter, Ms. Sharon Self and Dr. Steve Stoner.