

**KANSAS BOARD OF REGENTS  
ACADEMIC AFFAIRS STANDING COMMITTEE**

**VIRTUAL MEETING AGENDA  
Tuesday, March 1, 2022  
9:00 – 10:30 a.m.**

The Board Academic Affairs Standing Committee (BAASC) will meet virtually via Zoom. You can listen to the meeting at the Board offices, located at 1000 SW Jackson, Suite 520, Topeka, Kansas, 66612. Meeting information will be sent to participants via email, or you may contact [arobinson@ksbor.org](mailto:arobinson@ksbor.org).

- |  |                         |       |
|--|-------------------------|-------|
| <b>I. Call to Order</b>  | Regent Kiblinger, Chair |       |
| A. Roll Call and Introductions   |                         |       |
| B. Approve minutes from February 16, 2022  |                         | p. 3  |
| <br>   |                         |       |
| <b>II. Consent Items</b>   |                         |       |
| A. Act on Request to Seek Doctorate in Clinical Laboratory Science (DCLS) Accreditation – KUMC     | Robert Klein            | p. 5  |
| B. MS in Health Data Science – KUMC  | Robert Klein            | p. 8  |
| <br>   |                         |       |
| <b>III. Other Matters</b>  |                         |       |
| A. Receive State Authorization Reciprocity Agreement (SARA) Report                                 | Jennifer Armour         | p. 20 |
| <br>   |                         |       |
| <b>IV. Suggested Agenda Items for March 16<sup>th</sup> Meeting</b>                                |                         |       |
| A. Request for New Certificate of Approval for Degree Granting Authority for Visible Music College |                         |       |
| B. 2021 Apply Kansas Annual Report   |                         |       |
| <br>   |                         |       |
| <b>V. Adjournment</b>  |                         |       |

**BOARD ACADEMIC AFFAIRS STANDING COMMITTEE**

Four Regents serve on the Board Academic Affairs Standing Committee (BAASC), established in 2002. The Regents are appointed annually by the Chair and approved by the Board. BAASC meets virtually approximately two weeks prior to each Board meeting. The Committee also meets the morning of the first day of the monthly Board meeting. Membership includes:

Shelly Kiblinger, Chair

Jon Rolph

Allen Schmidt

Wint Winter

**Board Academic Affairs Standing Committee  
AY 2022 Meeting Schedule**

<i><b>BAASC Academic Year 2021- 2022 Meeting Dates</b></i>			
<b>Meeting Dates</b>	<b>Location</b>	<b>Time</b>	<b>Agenda Materials Due</b>
August 31, 2021	Virtual Meeting	9:00 a.m.	August 10, 2021
September 15, 2021	Hybrid Meeting	1:30 p.m.	August 25, 2021
	*No Meetings in October		
November 2, 2021	Virtual Meeting	9:00 a.m.	October 12, 2021
November 17, 2021	Hybrid Meeting	10:30 a.m.	October 27, 2021
November 29, 2021	Virtual Meeting	9:00 a.m.	November 9, 2021
December 15, 2021	Hybrid Meeting	11:00 a.m.	November 24, 2021
January 4, 2022	Virtual Meeting	9:00 a.m.	December 14, 2021
January 19, 2022	Virtual (Topeka option available)	10:30 a.m.	December 29, 2021
February 1, 2022	Virtual Meeting	9:00 a.m.	January 11, 2022
February 16, 2022	Topeka (Virtual option available)	10:30 a.m.	January 26, 2022
March 1, 2022	Virtual Meeting	9:00 a.m.	February 8, 2022
March 16, 2022	Topeka (Virtual option available)	11:00 a.m.	February 23, 2022
April 5, 2022	Virtual Meeting	9:00 a.m.	March 15, 2022
April 20, 2022	FHSU	11:00 a.m.	March 30, 2022
May 3, 2022	Virtual Meeting	9:00 a.m.	April 12, 2022
May 18, 2022	Topeka	11:00 a.m.	April 27, 2022
May 31, 2022	Virtual Meeting	9:00 a.m.	May 10, 2022
June 15, 2022	Topeka	11:00 a.m.	May 25, 2022

\*Please note virtual meeting times have changed to 9 a.m., and Board day meetings have changed to 11 a.m. unless otherwise noted.

**Board Academic Affairs Standing Committee  
MINUTES**

**Wednesday, February 16, 2022**

The February 16, 2022, meeting of the Board Academic Affairs Standing Committee (BAASC) of the Kansas Board of Regents (KBOR) was called to order by Regent Kiblinger at 10:32 a.m. The meeting was held at the Board office, with a virtual option through Zoom.

**In Attendance:**

Members:	Regent Kiblinger Regent Rolph	Regent Winter	Regent Schmidt
Staff:	Daniel Archer Tara Lebar Judd McCormack Marti Leisinger	Sam Christy-Dangermond Karla Wiscombe Leah Nicholson Scott Smathers	Amy Robinson Hector Martinez Lisa Beck Tobias Wood
Others:	Adam Borth, Fort Scott CC Brenda Koerner, ESU Elaine Simmons, Barton CC Janet Stramel, FHSU Jennifer Roberts, KU Kim Morse, Washburn Monette DePew, Pratt CC Remy Lequesne, KU Shirley Lefever, WSU Tiffany Masson, KHSC Joel Dickerman, KHSC	Aron Potter, Coffeyville CC Brent Thomas, Gary Wyatt, ESU Jason Sharp, Labette CC JoLanna Kord, ESU Linnea GlenMaye, WSU Michelle Schoon, Cowley CC Robert Klein, KUMC Stanton Gartin, SATC Tanya Gonzalez, K-State	Amber Knoettgen, Cloud County CC Cindy Hoss, Hutchinson CC Howard Smith, PSU Jean Redeker, KU Kim Zant, Cloud County CC Luke Dowell, SCCC Marlon Thornburg, Coffeyville CC Scott Lucas, Taylor Crawshaw, Independence CC Tricia Paramore, Hutchinson CC

Roll call was taken for members and presenters.

**Approval of Minutes**

Regent Schmidt moved to approve the February 1, 2022, meeting minutes, and Regent Rolph seconded the motion. With no corrections, the motion passed.

**Kansas Health Science Center (KHSC) Update**

Dr. Tiffany Masson, President, and Dr. Joel Dickerman, Dean/Chief Academic Officer, from the Wichita-based Kansas Health Science Centers (KHSC) College of Osteopathic Medicine (KansasCOM), presented a progress update. They completed phase three, pre-accreditation, in December 2021, which allows them to recruit students to begin classes in August 2022. They anticipate 85 students in this first class, which will increase to 170 by year three, and 680 students annually when fully operational. Full accreditation in phase four will occur when the first class of students graduates in 2026. After the initial cohort graduates, the Commission on Osteopathic College Accreditation (COCA) will finalize the KHSC accreditation. The projected timeline for the inaugural class includes clinical rotations starting in 2024, graduating and beginning a residency in 2026, and completing residency and beginning their practice by 2028. The KHSC will have a strong focus in western Kansas due to physician needs, and they are working toward building a scholarship fund to eliminate student debt burdens. Regents thanked them for the update and expressed interest in visiting the center in the future.

### **2021 Transfer and Articulation Council (TAAC) Quality Assurance Report**

Tricia Paramore, 2020 Quality Assurance Subcommittee Chair and faculty from Hutchinson Community College, presented the 2021 TAAC Quality Assurance Report. The full report is available at [https://www.kansasregents.org/academic\\_affairs/transfer-articulation/transfer\\_articulation\\_council](https://www.kansasregents.org/academic_affairs/transfer-articulation/transfer_articulation_council). Tricia highlighted the following data:

- Kansas transfer students who begin at two-year institutions are completing at four-year institutions after six years at higher rates than the national average
- Native university students and system college transfer students have common success rates as measured by GPA in the second course of sequential courses
- At the 2021 KCOG conference, six new courses were added, and 13 courses were reviewed for updating outcomes
- Faculty participation at KCOGs remains high, with 412 faculty registered in 2021

### **AAS in Unmanned Aircraft Systems Update**

Previously K-State submitted an AAS in Unmanned Aircraft Systems for approval, which was tabled to allow collaborative discussions between K-State, Cloud County Community College, and WSU Tech. At this time, K-State is pulling the proposal from the process and will likely submit it at some point in the future. Regents expressed the importance of collaboration among institutions.

### **Advantage KS Coordinating Council (AKCC) Update**

Regent Kiblinger stated they received positive news on their Governor's budget recommendations. Most notably, a Department of Commerce position will be created to manage the council's work. AKCC wants to meet next to put evaluation metrics in place and prefers to do this work in person.

### **Direct Support Professional (DSP) Update**

Regent Schmidt provided the update. He noted the shortage of workers in this field is critical, and providing a curriculum to high school and college students into this workforce is essential. WSU created [eight badges](#) that create opportunities for students to obtain skillsets that will benefit them in this field of work.

### **Adjournment**

The next BAASC meeting is scheduled for March 1, 2022, at 9:00 a.m.

Regent Winter moved to adjourn the meeting, and Regent Rolph seconded. With no further discussion, the meeting adjourned at 11:42 a.m.

## Request to Seek Accreditation for Doctorate in Clinical Laboratory Science – University of Kansas Medical Center

### Summary and Recommendation

The University of Kansas Medical Center seeks approval to pursue programmatic accreditation for its Doctorate in Clinical Laboratory Science from the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). The total cost of initial accreditation is estimated at \$4,850, with an anticipated annual continuing accreditation fee of \$2,692<sup>1</sup>. Board staff recommends approval.

*March 1, 2022*

### Background

Board policy (II.7.1.i.) on accreditation requires state universities to seek approval prior to pursuing initial accreditation for an academic program.

### Request: Accreditation for Doctorate in Clinical Laboratory Science

The University of Kansas Medical Center requests approval to seek accreditation for its new Doctorate in Clinical Laboratory Science (DCLS) from the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). NAACLS accredits the KUMC undergraduate Bachelor of Science in Clinical Laboratory Science programs. Further, it is recognized by the Council for Higher Education Accreditation (CHEA), a national advocate and institutional voice for self-regulation of academic quality through accreditation.

NAACLS accreditation is essential to students who earn the DCLS degree so that they can practice professionally. Graduates can serve in various roles and practice in many venues. The DCLS practitioner is prepared to act as a consultant to health care providers, serve as a clinical laboratory director, educate patients and health care providers, conduct and disseminate research on evidence-based practice and test utilization, and enter academic positions. These professional responsibilities require completion of an accredited program and national certification. For example, to serve as a Clinical Laboratory Director, the [Code of Federal Regulations](#) states that qualifications include: (i) hold an earned doctoral degree in a chemical, physical, biological, or clinical laboratory science from an accredited institution, and (ii) be certified by a Board approved by the US Department of Health and Human Services (HHS). To meet the first qualification, the KUMC DCLS program will need appropriate accreditation. To meet the second Clinical Laboratory Director qualification, a DCLS holder will need certification. That certification, awarded by the American Society for Clinical Pathology [Board of Certification](#), (ASCP-BOC, an HHS-approved Board), will be dependent upon completion of a NAACLS-accredited DCLS program.

The following costs are associated with this accreditation:

Costs for Accreditation	
Fee	Amount
Initial Application Fee	\$600
Site Visit Preparation Fee	\$500
Initial Site Visit Cost	\$3,750
<b>Total for Initial Accreditation</b>	<b>\$4,850</b>
<b>Continuing Accreditation Annual Fee</b>	<b>\$2,692<sup>1</sup></b>

**Recommendation:** Total cost of initial accreditation is \$4,850, with an anticipated annual renewal fee of \$2,692 thereafter, for a total of \$7,542. As this accreditation is necessary for graduates of the DCLS program to practice professionally, Board staff recommends approval of this request.

<sup>1</sup> This amount is subject to change according to the NAACLS website.



February 11, 2022

Daniel Archer, M.S., Ed.D.  
 Vice President,  
 Academic Affairs  
 Kansas Board of Regents 1000 SW Jackson, Suite 520  
 Topeka, KS 66612

Dear Dr. Archer,

The University of Kansas Medical Center (KUMC) requests approval to seek accreditation for our [Doctorate in Clinical Laboratory Science](#) (DCLS) program from the [National Accrediting Agency for Clinical Laboratory Sciences](#) (NAACLS). NAACLS is the premier accrediting agency for clinical laboratory science educational programs and is the agency that accredits our undergraduate Bachelor of Science in Clinical Laboratory Science - Medical Laboratory Scientist and Diagnostic Molecular Scientist programs. The organization is recognized by the Council for Higher Education Accreditation (CHEA) which is a national advocate and institutional voice for self-regulation of academic quality through accreditation.

As a new degree program at KUMC, our program is not accredited. The fees associated with obtaining and maintaining NAACLS accreditation are as follows:

Fee Name	Amount	Rationale
Initial Application Fee	\$600	One-time fee due with the submission of initial application form and preliminary report
Site Visit Preparation Fee	\$500	One-time fee due when the self-study is submitted
Initial Site Visit Cost	\$3,750	Estimated costs associated with 3-member site visit team conducting an in-person site visit
Continuing Accreditation Annual Fee*	\$2,692	Annually invoiced in June each year

*\*subject to change per NAACLS website*

Statement of Need

The DCLS is the terminal practice degree for the Clinical Laboratory Science profession. The DCLS practitioner provides a critical interface between practice, research, and health care policy. They assure the effective and appropriate utilization of laboratory tests, *"the right test, for the right patient, at the right time,"* resulting in

decreased costs, earlier diagnosis, and improved patient outcomes. By providing such information to health care providers and consumers, the DCLS is instrumental in providing safe, effective, patient-centered, and equitable health care as envisioned by the National Academy of Medicine.

Individuals who hold the DCLS degree can serve many roles in the healthcare team and can practice in many venues including clinical facilities, reference laboratories, physician practices, public health agencies, government facilities, and academic institutions. The DCLS practitioner is prepared to act as a consultant to health care providers, serve as a clinical laboratory director, educate patients and health care providers, conduct and disseminate research on evidence-based practice and test utilization, and enter academic positions. These professional responsibilities require completion of an accredited program and national certification. For example, to serve as a Clinical Laboratory Director, the [Code of Federal Regulations](#) states that qualifications include: (i) hold an earned doctoral degree in a chemical, physical, biological, or clinical laboratory science from an accredited institution, and (ii) be certified by a Board approved by the US Department of Health and Human Services (HHS). To meet the first qualification, the KUMC DCLS program will need appropriate accreditation. As mentioned above, NAACLS is the premier clinical laboratory science accrediting body in the United States. To meet the second Clinical Laboratory Director qualification, a DCLS holder will need certification. The American Society for Clinical Pathology [Board of Certification](#) (ASCP-BOC) is an HHS-approved Board and is the preeminent certification agency for clinical laboratory science. The ASCP-BOC is developing a certification process for individuals who hold a DCLS degree, and qualification for that certification will include completion of a NAACLS-accredited DCLS program.

For its graduates to practice professionally, the KUMC DCLS program needs NAACLS accreditation. Therefore, we request approval to seek accreditation from NAACLS with the intent of establishing and maintaining that accreditation.

Please let me know if any further documentation is required for our request.

Respectfully submitted,



Robert M. Klein, Ph.D., F.A.A.A.  
Vice Chancellor for Academic and Student Affairs (KUMC)  
Chancellor's Club Professor

CC: Samantha Christy-Dangermond  
Eric Elsinghorst, Ph.D., MPH, MLS(ASCP)<sup>cm</sup> MB<sup>cm</sup>  
Douglas Girod, M.D., F.A.C.S.  
Robert D. Simari, M.D.

## **Program Approval**

### **Summary**

*Universities may apply for approval of new academic programs following the guidelines in the Kansas Board of Regents Policy Manual. The University of Kansas Medical Center has submitted an application for approval and the proposing academic unit has responded to all of the requirements of the program approval process. Board staff concurs with the Council of Presidents and the Council of Chief Academic Officers in recommending approval.*

*March 1, 2022*

### **I. General Information**

#### **A. Institution**

University of Kansas Medical Center

#### **B. Program Identification**

Degree Level: Masters  
Program Title: Health Data Science  
Degree to be Offered: Master's in Health Data Science  
Responsible Department or Unit: University of Kansas/School of Medicine/Department of Biostatistics & Data Science  
CIP Code: 30.7001  
Modality: Hybrid  
Proposed Implementation Date: Fall 2022

Total Number of Semester Credit Hours for the Degree: 36

**II. Clinical Sites:** Does this program require the use of Clinical Sites? No

### **III. Justification**

The Master's Degree in Health Data Science is proposed by the Department of Biostatistics & Data Science at the University of Kansas Medical Center with full support of the leadership of the University of Kansas Medical Center. This online and in-person program will be on the cutting edge for several reasons. It is the first in the region focused on producing graduate-trained health data scientists with the high level of biostatistics and computing skills demanded by a rapidly emerging healthcare analytics workforce. In addition, online access to all required coursework provides flexibility to accommodate working professionals seeking advanced health data science training.

Due to the advent of new technologies, a large amount of data is being generated in healthcare industries. For example, new sensor technologies have dramatically increased the frequency and reliability of the data being generated by individual patients. Therefore, there is a high demand for expertise in tracking, managing, analyzing, and interpreting the high volume of data being generated. In addition, interdisciplinary research is a point of emphasis in academia, government, and industry. To support effective interdisciplinary collaborations, data scientists need to possess statistical, computing, and domain-level expertise. The application of data science has already had a tremendous impact on the diagnosis and treatment of many medical conditions. However, clinicians/researchers usually do not have formal training in data science in their degree programs. The proposed MS in Health Data Science will fill this significant gap.



Besides clinicians and researchers already working in their field, the proposed program will be an attractive career choice for beginners. Integrating clinical data with other diverse data sources, like sleep cycles, sedentary vs active life, diet, and nutrition, etc., allows a greater level of understanding of the association and casual factors. Moreover, each of us carries diverse genetic variants and lifestyle factors that can be combined with phenotypic and demographic data to inform our understanding of physiology, which will eventually help in advancing personalized medicine. Analyzing the vast amount of available data to generate actionable information for clinicians, requires advanced training in health data science.

Highly personalized data comes with a unique management challenge due to the Health Insurance Portability and Accountability Act (HIPPA). Both law and ethics require that the patients’ personal information must be kept secure. On the other hand, utilization of as much clinical research data as possible is vital for the development of personalized medicine. The complexity of securing such information and using it effectively demands highly skilled health data scientists immersed in the healthcare world.

The curriculum has been developed by the largest group of PhD statisticians and data scientists in the KU system, whose track record of successful online curriculum development and instruction is evidenced by the rapid growth of their existing programs. The proposed degree will deliver high-quality accessible graduate programs in STEM fields and produce a much-needed health data science workforce for the local and regional communities of Kansas City and the State of Kansas.

**IV. Program Demand:**

**A. Survey of Student Interest**

Number of surveys administered: .....	N/A
Number of completed surveys returned: .....	137
Percentage of students interested in program: ...	39.4%

An electronic RedCAP survey was distributed through the KUMC Office of Graduate Medical Education, the Office of Postdoctoral Affairs and Graduate Studies, the University of Kansas Cancer Center, and Frontiers. In addition, the survey was distributed to select regional academic institutions. The survey first asked participants to indicate whether a Master of Science in Health Data Science degree was a career goal, and for those who answered in the positive, a series of questions about the types of degrees desired were presented. Of the 137 respondents, 29 (21.2%) were undergraduate students, two (1.5%) were medical students, 50 (36.5%) were graduate students, 30 (21.9%) were medical residents, nine (6.6%) were medical doctor, 16 (11.7%) were post-doctoral fellows, three (2.2%) were staff, and five (3.6%) were faculty. In total, 54 (39.4%) indicated health data science was a career goal. All 54 (100%) replied “Yes” to the question “Would you be interested in a Master of Science degree in Health Data Science at the University of Kansas Medical Center?”

**B. Market Analysis**

The Master of Health Data Science is designed to prepare students for immediate entry into the workforce. “Data Scientist” has been ranked as one of the top jobs in the U.S. over the last several years. The Harvard Business Review named it as “the sexiest job of the 21<sup>st</sup> century” back in 2012 and pointed out that the shortage of data scientists is becoming a serious impediment in some sectors (Davenport & Patil, 2012). The recruiting website, Glassdoor, annually releases the best jobs in U.S. based on three criteria: earning potential (median annual base salary), overall job satisfaction, and the number of job openings on Glassdoor. Glassdoor ranks “Data Scientist” as the second best job in U.S. in 2021 with median salary of \$113,736. Further, “Data Scientist” has been consistently ranked as top three best job in last five years (third in 2020, first in 2019, 2018, 2017, and 2016) (Glassdoor, 2020). Bureau of Labor Statistics determined that data science is one of the fastest growing

occupations and has a projected 31% growth over the next 10 years (2019-2029) (Bureau of Labor Statistics, 2020). However, the supply of data scientists has not been able to keep pace with their demand. In August 2018, LinkedIn reported that there was a shortage of 151,717 people with data science skills in the United States (LinkedIn, 2018). A January 2019 report from Indeed showed a 29% increase in demand for data scientists every year and a 344% increase since 2013. The same report also showed that searches for data science jobs increased 14% in 2018, which suggests a big gap between the demand and supply (Flowers, 2019).

In the Kansas City Metro area, the demand for workers with statistics and analytics skills will increase by 22.2% over the next decade, according to a Labor Market report by the Regional Workforce Intelligence Network of Greater Kansas City (MARC, 2020). According to the Bureau of Labor, the projected demand for Statisticians and Data Scientists will be 34.6% and 31% respectively. The proposed program will be a combination of both statistics and data science with a focus on health outcome data. Therefore, the program will be in high demand.

There are several factors that influence the trend in healthcare analytics market size and growth. The transition from paper charts to real-time monitoring systems and use of electronic health records to gather patient health data is expected to increase the healthcare analytics market size. Industry players invest huge amounts of money in research and development processes to create unique platforms and solutions with enhanced features that allow them to gain a competitive advantage in the market for health care analytics. This increase in investment is expected to fuel the growth of the healthcare analytics market size. In addition, the outbreak of COVID-19 pandemic has brought the importance of data analytics sharply into focus. The need to extract and analyze the healthcare data quickly has only increased with pandemic (Sheng, 2020). Integrating the developments in computing technology and increasing the implementation of predictive and prescriptive analytics in most hospitals is driving healthcare analytics market growth.

## V. Projected Enrollment for the Initial Three Years of the Program

Based on the demand and the current recruitment in other MS in Applied Statistics programs, we anticipate the following estimates of the enrollment in the proposed program.

Year	Headcount Per Year		Sem Credit Hrs Per Year	
	Full- Time	Part- Time	Full- Time	Part- Time
Implementation	5	5	95	45
Year 2	10	10	180	90
Year 3	10	10	180	90

## VI. Employment

Implementation of the program will create several employment opportunities for both administrative staff and faculty, as well as graduates. There will be a Director, an Assistant Director, and an Administrative Assistant for the program. The directors will have dedicated percentage effort time overseeing and ensuring the proper functioning of the program. The full-time Administrative Assistant will work on administrative processes and facilitate instructor and trainee communication, starting from student recruitment to graduation. Many other KUMC faculty will be employed with percentage effort for their involvement in various educational activities including both didactic and non-didactic course works.

There will be a wide spectrum of employment opportunities for the graduates of the proposed program. Given the applied nature of coursework/training, we anticipate that our graduates will be able to join the workforce immediately after the graduation. The program will bring statistics and data science together with a focus on health data. This combination of skill sets is highly sought after and required in many healthcare institutions and industries. We anticipate that our graduates will be targeted for recruitment by academic health research

institutions and a variety of different health care provider industries. A few examples of potential employment venues include academia, government, hospital, biotechnology, insurance company, pharmaceutical company, and consulting. Many of the healthcare analytics providers are increasingly focused on providing scalable solutions that can be made adaptable to technology advancement as well as human expertise and skills in healthcare organizations. Examples of a few companies include, Cerner Corporation, PRA Healthcare, Quintiles, McKesson Corporation, Optum, CitiusTech, Health Catalyst, SAS Institute Inc, and VitreosHealth, Inc. Therefore, successful completion of the proposed MS in Health Data Science program will enable our graduates achieve high level of competency to seek a career across a wide spectrum of healthcare data scientist positions.

## **VII. Admission and Curriculum**

Admission to the MS program in Health Data Science is made by the Department's MS/PhD Admissions Committee which consists of four full-time faculty members and the Program Director who serves as Chair. All committee recommendations are presented directly to the Department Chair. ***Non-discrimination policy*** : Qualified students are admitted without regard to race, color, ethnicity, religion, sex, national origin, age, ancestry, disability, status as a veteran, sexual orientation, marital status, parental status, gender identity, gender expression, and genetic information.

### **A. Admission Criteria**

Application for admission to the MS program in Health Data Science is through the Department of Biostatistics and Data Science at the University of Kansas Medical Center. The following materials are required to be considered for admission:

- A completed online application form.
- Evidence of a bachelor's degree from an accredited college or university.
- Official transcript(s) bearing the official seal from each college or university in which course work had been taken.
- Three (3) letters of recommendations.
- TOEFL or IELTS test results (if applicable).

For admission into the MS program in Health Data Science, the applicant must meet the general requirements for admission to Graduate Studies. The minimum requirements for admission into the MS program are:

- A cumulative undergraduate GPA of 3.0 or better is required for regular admission status. An applicant with an undergraduate GPA not meeting the minimum requirements may be admitted under provisional status, provided they meet the academic standards of the Department without excessive deficiencies in pre-requisites.
- B average (or higher) in Calculus I – II (i.e., single variable differentiation and integration or equivalent).
- Successful completion of a course in any computer programming language.

An applicant meeting the minimum requirements for admission is referred to the Admissions Committee for approval or disapproval. Approval for admission is good for up to 12 months from the approved date for admission. Failure to enroll during this time will require a new application if admission is desired.

### **B. Curriculum**

The proposed educational program will utilize all but one existing statistical, computational and health data science foundation courses. One new course will be designed with special focus on observational health data analysis. The curriculum of the MS in Health Data Science is built upon three foundational courses: required

statistics foundation course (12 credit hours), required computing foundation courses (six credit hours), required health data science foundation courses (12 credit hours). In addition, the program requires six credit hours of elective courses of students' choice.

**Required Statistics Foundation Courses (12 semester credit hours (SCH))**

- HDSC 805: Professionalism, Ethics and Leadership in the Statistical Sciences (3 SCH)
- HDSC 835: Categorical Data Analysis (3 SCH)
- HDSC 840: Linear Regression (3 SCH)
- HDSC 845: Survival Analysis (3 SCH)

**Required Computing Foundation Courses (6 semester credit hours (SCH))**

- HDSC 818: Introduction to R (1 SCH)
- HDSC 819: Introduction to Python (1 SCH)
- HDSC 822: Introduction to SQL (1 SCH)
- HDSC 823: Introduction to Programming and Applied Statistics in R (3 SCH)

**Required Health Data Science Foundation Courses (12 semester credit hours (SCH))**

- HDSC 824: Data Visualization and Acquisition (3 SCH)
- HDSC 880: Data Mining and Analytics (3 SCH)
- HDSC 881: Statistical Learning I (3 SCH)
- HDSC 861: Observational Health Data Analysis (3 SCH)

**Electives (6 semester credit hours (SCH))**

- HDSC 815: Introduction to Bioinformatics (3 SCH)
- HDSC 820: SAS Programming I (3 SCH)
- HDSC 830: Experimental Design (3 SCH)
- HDSC 855: Statistical Methods in Genomic Research (3 SCH)
- HDSC 882: Statistical Learning II (3 SCH)

**Course Plan**

The courses mentioned above will be taught in Fall, Spring and Summer semesters as shown on the plan of study below:

**Year 1: Fall**

**SCH = Semester Credit Hours**

Course #	Course Name	SCH
HDSC 835	Categorical Data Analysis	3
HDSC 840	Linear Regression	3
HDSC 824	Data Visualization and Acquisition	3

**Year 1: Spring**

Course #	Course Name	SCH
HDSC 880	Data Mining and Analytics	3
HDSC 845	Survival Analysis	3
HDSC 818	Introduction to R	1

**Year 1: Summer**

Course #	Course Name	SCH
HDSC 823	Introduction to Programming and Applied Statistics in R	3

**Year 2: Fall**

Course #	Course Name	SCH....
HDSC 881	Statistical Learning, I	3
HDSC 822	Introduction to SQL	1
HDSC 815 (1 <sup>st</sup> Elective)	Introduction to Bioinformatics (or one other elective)	3

**Year 2: Spring**

Course #	Course Name	SCH....
HDSC 861	Observational Health Data Analysis	3
HDSC 882 (2 <sup>nd</sup> Elective)	Statistical Learning II (or one other elective)	3

**Year 2: Summer**

Course #	Course Name	SCH....
HDSC 805	Professionalism, Ethics and Leadership in the Statistical Sciences	3
HDSC 819	Introduction to Python	1

**Total Number of Semester Credit Hours ..... 36**

All the courses required for the MS in Health Data Science already exist as part of the MS in Applied Statistics and MS in Biostatistics programs with one exception. One new course (HDSC 861) will be created to align with the Health Data Science degree focus. The courses will be taught both in-person and online. The online courses will be delivered via internet and require the students to have access to an adequately equipped computer with internet connection. The Department of Biostatistics & Data Science currently offers online courses in two formats: synchronous (live) or asynchronous (recorded). In general, the Department of Biostatistics & Data Science has developed online courses to mimic the classroom as closely as possible using educational technology, such as, Panopto, Zoom, Blackboard, and Canvas.

**Annual Evaluations**

Students will be evaluated each May by their faculty advisor and Program Chair. These evaluations provide feedback to the student regarding the progress that they are making towards the degree. To proceed in the program, students must remain in good standing and maintain a 3.0 GPA with no more than two grades of C in the required courses.

**Graduate Examination**

To graduate with a MS in Health Data Science, students must pass the Masters Comprehensive Examination. That examination is administered after a student has successfully completed: (1) the required coursework including Categorical Data Analysis (HDSC 835), Linear Regression (HDSC 840), Statistical Learning I (HDSC 881), and Observational Health Data Analysis (HDSC 861); and (2) during the final semester of enrollment. The examination has two purposes: to assess the student's strengths and weaknesses and to determine whether the student should be awarded the MS degree. The examination is created and administered by a committee of at least three members of the Department Graduate Faculty. If this examination is failed, a second examination

may be taken no sooner than three months later and is subject to committee approval. The committee can recommend that the student leave the program following the semester in which the examination is taken. After two failures, no further examination is permitted, and the student will not be awarded the MS degree.

**VIII. Core Faculty**

Note: \* Next to Faculty Name Denotes Director of the Program, if applicable

FTE: 1.0 FTE = Full-Time Equivalency Devoted to Program

Faculty Name	Rank	Highest Degree	Tenure Track Y/N	Academic Area of Specialization	FTE to Proposed Program
Jonathan Mahnken	Professor	PhD	Y	Biostatistics	0.10
Jianghua He	Associate Professor	PhD	Y	Biostatistics	0.10
John Keighley	Associate Professor	PhD	N	Biostatistics, Data Science	0.20
Jo Wick	Associate Professor	PhD	Y	Biostatistics	0.15
Dong Pei	Research Instructor	PhD	N	Bioinformatics, Informatics, Data Science	0.10
Jinxiang Hu	Assistant Professor	PhD	Y	Biostatistics, Data Science	0.20
Devin Koestler	Associate Professor	PhD	Y	Biostatistics, Bioinformatics, Data Science	0.00
Jeffrey Thompson	Assistant Professor	PhD	Y	Biostatistics, Bioinformatics, Informatics, Data Science	0.00
Dinesh Pal Mudaranthakam	Teaching Associate	MS	N	Informatics, Data Science	0.10
Lynn Chollet Hinton	Assistant Professor	PhD	Y	Bioinformatics, Informatics, Data Science	0.15
Prabhakar Chalise	Associate Professor	PhD	Y	Biostatistics, Bioinformatics, Data Science	0.15
Yanming Li	Assistant Professor	PhD	Y	Biostatistics, Bioinformatics, Data Science	0.05
Mihaela Sardu	Associate Professor	PhD	Y	Bioinformatics, Data Science	0.20
Milind Phadnis	Associate Professor	PhD	Y	Biostatistics	0.10

Number of graduate assistants assigned to this program ..... **0**

The Department faculty who are responsible for teaching courses in this program include:

*Jonathan Mahnken*, PhD. Professor with Tenure. Research focus: study design; power and sample size calculations; secondary data analysis; survival analysis; categorical data analysis; statistical consulting

and expert testimony; analysis of health claims data. Dr. Mahnken has an extensive collaboration record that includes basic science and translational research in stroke, clinical trials, and health services research. He is the director of the Data Management and Statistics Core of the NIA-funded KU Alzheimers's Disease Center and was PI of an R03 from the National Institute of Dental and Craniofacial Research of the NIH. Dr. Mahnken currently teaches BIOS/STAT 805: Professionalism, Ethics and Leadership in the Statistical Sciences.

*Jianghua He*, PhD. Associate Professor with Tenure. Research focus: survival analysis; time varying coefficient models; meta-analysis; missing data; Bayesian dynamic survival models. Dr. He has developed statistical methodology for problems in obesity and nursing research, specifically in the area of survival analysis. She currently teaches BIOS 872: Mathematical Statistics II, and BIOS 835: Categorical Data Analysis.

*John Keighley*, PhD. Education Associate Professor, Education Track. Research focus: Analysis and Reporting of Cancer Registry Data. Dr. Keighley has worked with the Kansas Cancer Registry and on various other cancer-related grants and studies. He has worked with researchers that specialize in engineering, smoking cessation, genitourinary disease and gastroenterology, and large data sets such as Kansas Medicaid, and the SEER-Medicare linked database. He currently teaches BIOS 820: SAS programming I, BIOS 850: Multivariate Statistics, and BIOS 880: Data Mining and Analytics.

*Jo Wick*, PhD. Associate Professor with Tenure/Director of Graduate Education. Research focus: Statistics education, Bayesian statistics and applications, clinical trial design. Dr. Wick has extensive experience in clinical trial design and has worked with researchers in cardiology, nursing, endocrinology, cancer, and early phase drug discovery. Her primary role within the department is to oversee the Graduate Programs in Biostatistics and Applied Statistics (MS/PhD) where she has received the Outstanding Graduate Teaching Award, voted on by students. Her research is focused on Bayesian statistics and data analysis and statistics education. She currently teaches BIOS/STAT 840: Linear regression and has developed the new course STAT 805: Professionalism, Leadership and Ethics for Data Scientists. She has previously taught BIOS 830: Experimental Design.

*Dong Pei*, PhD. Research Instructor and Bioinformatics Specialist. Research Focus: Development and application of bioinformatics tools/pipelines to analyze high-throughput 'Omic data, including: DNaseq, RNAseq, scRNAseq, and Infinium Methylation microarray. Dr. Pei currently teaches STAT/DATA 819: Introduction to Python, BIOS/STAT 823: Introduction to Programming and Applied Statistics in R.

*Jinxiang Hu*, PhD. Assistant Professor, Tenure track. Research Focus: Patient reported outcome, health disparity, structural equation modeling, item response theory, longitudinal modeling, mixture modeling, machine learning. Dr. Hu currently teaches BIOS/STAT 833: Measurement for Statisticians, STAT/DATA 881: Statistical Learning I, and STAT/DATA 882: Statistical Learning II.

*Devin Koestler*, PhD. Associate Professor with Tenure/Associate Director Biostatistics and Informatics Shared Resources. Research focus: high-dimensional genomic data, statistical genomics, mixture models, clustering and classification, molecular epidemiology, epigenetics, and DNA methylation. Dr. Koestler's research focus is the development and application of statistical methods for high-throughput 'omics' data; in particular, array-based DNA methylation data. Dr. Koestler has previously taught BIOS/STAT 830: Experimental Design.

*Jeffrey Thompson*, PhD. Assistant Professor, Tenure track. Research focus: Statistical/Machine learning methods, data integration, feature selection, quantitative 'omics, molecular epidemiology, survival analysis, and predictive models. Dr. Thompson developed and taught three courses STAT/DATA 824:

Data Visualization and Acquisition, STAT/DATA 881: Statistical Learning I and STAT/DATA 882: Statistical Learning II.

*Dinesh Pal Mudaranthakam*, MS. Teaching Associate. Research focus and technical support: Design and implementation of Data warehouse such as Cancer Curated Clinical Outcomes Database, Research Databases to collect clinical research information, Query Module to validate study design feasibility, Software module to identify early cancer patient, Clinical Integration (Epic and EResearch), Investigator Initiated trial study build, standard eCRF (electronic case report form), Data dissemination for analysis and administrative purpose, patient accrual tracking and Managing the Biospecimen Inventory Software (OpenSpecimen) for the University of Kansas Cancer Center (KUCC). Mr. Mudaranthakam currently teaches DATA 822: Introduction to SQL, and DATA 817: Introduction to Tableau.

*Lynn Chollet Hinton*, PhD. Assistant Professor, Tenure track. Research focus: Population health, epidemiology, biomarkers, electronic health records, administrative claims data, observational study design, missing data, categorical data analysis, survival analysis, longitudinal data, and data integration. Dr. Hinton is currently developing new course specifically designed for proposed degree MS in Health Data Science, DATA 861: Observational Health Data Analysis.

*Prabhakar Chalise*, PhD. Associate Professor with Tenure/Assistant Director of Graduate Education. Research focus: Statistical Genetics and Genomics, Computational Statistics, Survival Analysis, Methods in Biostatistics. Dr. Chalise's primary research interest is in the development and application of statistical methods to health sciences research. Dr. Chalise's educational leadership role includes overseeing the Masters and PhD education program in Biostatistics. Dr. Chalise currently teaches BIOS 871: mathematical Statistics I, and BIOS 855: Statistical Methods in Genomics Research.

*Yanming Li*, PhD. Assistant Professor, Tenure track. Research focus: High-dimensional Data Analysis; Variable Selection; Survival Analysis with High-Dimensional Predictors; Weak Signal Detection, Estimation and Their Effects in Prediction; Probabilistic Graphical Models; Computational Statistics; Cancer Genomics; Neuroimaging-Genomics. Dr. Li is currently developing contents for course DATA 818: Data Summarization and Management.

*Mihaela Sardu*, PhD. Associate Professor, Tenure track. Research focus: Dr. Sardu's research interest is in the field of quantitative omics data, with a focus on the development of computational methods for processing and extracting biological information from large and complex datasets. Another research interest of Dr. Sardu is to provide a holistic view of merged data and interpretation tools that harmonize biological information across heterogeneous platforms. Dr. Sardu is currently teaching DATA 824: Data Visualization and Acquisition.

*Milind Phadnis*, PhD. Associate Professor with Tenure. Research focus: Dr. Phadnis's research interest is in the field of Survival Analysis and Design of Clinical Trial. He has collaborated extensively with researchers from nephrology, stroke, neurology, oncology, and many other areas. He is the co-director of the Biostatistics section of Investigator Initiated Trials supported by the KU Cancer Center. Dr. Phadnis is currently teaching BIOS 845: Survival Analysis.

Other faculty involved in curriculum, admissions, and future teaching include:

*Matthew Mayo*, PhD. Chair and Professor with Tenure. Research focus: robust regression; linear models; experimental design. Dr. Mayo currently teaches advanced courses within the MS/PhD programs in Biostatistics. His research focus is in clinical trial design and robust methods for regression.



*Byron Gajewski, PhD. Professor with Tenure. Research focus: Bayesian data analysis; latent variable modeling. Dr. Gajewski currently teaches advanced courses within the MS/PhD programs in Biostatistics. His research focus is Bayesian data analysis with applications to nursing and health care evaluation data.*

No new faculty is required for the proposed program. Department has recently recruited a couple of new faculty of which some effort will be allocated to this program. This program consists of all but one course already offered through the Department of Biostatistics and Data Science and taught by Department faculty (listed above). There will be one new course unique to this program which will be developed by the subject area specific experts from the current faculty in the Department.

**IX. Expenditure and Funding Sources** *(List amounts in dollars. Provide explanations as necessary.)*

<b>A. EXPENDITURES</b>	First FY	Second FY	Third FY
<b>Personnel – Reassigned or Existing Positions</b>			
Faculty <i>(for one new course)</i>	\$84,642	\$87,181	\$87,181
Administrators <i>(other than instruction time)</i>	\$0	\$0	\$0
Graduate Assistants	\$36,540	\$37,636	\$38,765
Support Staff for Administration <i>(e.g., secretarial)</i>	\$0	\$0	\$0
Fringe Benefits <i>(total for all groups)</i>	\$23,469	\$23,938	\$23,938
Other Personnel Costs	\$0	\$0	\$0
<b>Total Existing Personnel Costs – Reassigned or Existing</b> <i>(All the cost for faculty and GTA have been covered already with existing state funds and tuition dollars. Therefore, the cost shown here is not the new cost.)</i>	\$144,651	\$148,755	\$149,884
<b>Personnel – New Positions</b>			
Faculty	\$0	\$0	\$0
Administrators <i>(other than instruction time)</i>	\$0	\$0	\$0
Graduate Assistants	\$0	\$0	\$0
Support Staff for Administration <i>(0.5 FTE)</i>	\$32,500	\$33,475	\$33,475
Fringe Benefits <i>(total for all groups)</i>	\$13,893	\$14,019	\$14,019
Other Personnel Costs	\$0	\$0	\$0
<b>Total Existing Personnel Costs – New Positions</b>	\$46,393	\$47,494	\$47,494
<b>Start-up Costs - One-Time Expenses</b>			
Library/learning resources	\$0	\$0	\$0
Equipment/Technology	\$0	\$0	\$0
Physical Facilities: Construction or Renovation	\$0	\$0	\$0
Other	\$0	\$0	\$0
<b>Total Start-up Costs</b> <i>(There will be no new cost. All the existing resources will be utilized.)</i>	\$0	\$0	\$0
<b>Operating Costs – Recurring Expenses</b>			
Supplies/Expenses	\$0	\$0	\$0
Library/learning resources	\$0	\$0	\$0

Equipment/Technology	\$2,000	\$3,000	\$3,000
Travel	\$0	\$0	\$0
Other	\$0	\$0	\$0
<b>Total Operating Costs</b> (All the existing resources will be utilized except one possible new software.)	\$2,000	\$3,000	\$3,000
<b>GRAND TOTAL COSTS</b>	\$48,393	\$50,494	\$50,494

<b>B. FUNDING SOURCES</b> (projected as appropriate)	Current	First FY (New)	Second FY (New)	Third FY (New)
Tuition / State Funds		\$74,878	\$149,756	\$149,756
Student Fees		\$16,940	\$33,880	\$33,880
Other Sources				
<b>GRAND TOTAL FUNDING</b>		\$91,818	\$183,636	\$183,636
<b>C. Projected Surplus/Deficit (+/-)</b> (Grand Total Funding <i>minus</i> Grand Total Costs)		\$43,425	\$133,141	\$133,141

## X. Expenditures and Funding Sources Explanations

### A. Expenditures

#### Personnel – Reassigned or Existing Positions

All but one of the program courses already exist, requiring no additional faculty effort for instruction. Any faculty effort indicated in Section IX is already accounted for and supported by existing graduate programs in Biostatistics. This is all paid for by the existing state funds and tuition dollars that are allocated to the Department through the SOM funding model.

#### Personnel – New Positions

One new Academic Program Specialist will be hired and devote 0.5 FTE towards the day-to-day management of the program and students.

#### Start-up Costs – One-Time Expenses

None

#### Operating Costs – Recurring Expenses

Software purchase for the proposed new course.

## B. Revenue: Funding Sources

The funding sources will be tuition and fees as shown in section IX above. It was assumed that there will be 80% in-state and 20% out-of-state students. The average tuition per student will be  $\$421.15 \times 0.8 + \$989.6 \times 0.2 = \$534.84$ . For the first year, average credit hours for each student will be 14 (19 Credits for full-time and 9 Credits for part-time). Therefore, total tuition revenue from 10 students in first year will be  $\$534.84 \times 14 \times 10 = \$74,878$ . Course fee for 14 average credit hours for 10 students at the rate of \$121 will be \$16,940. Therefore, the total revenue including tuition and student fees will be  $\$74,878 + \$16,940 = \$91,818$ . In second year, we will have 10 new students (5 full time, and 5 part time) resulting in 20 students (10 full time and 10 part time). This will double the revenue to \$183,636. After second year, at least 10 students will be admitted and around 10 students will graduate per year resulting in 20 (10 full time and 10 part time) students at any given year. Therefore, the tuition and fee revenue after second year will be at least \$183,636.

## C. Projected Surplus/Deficit

In the first year, there will be an expected surplus of \$43,425. After first year, we expect a surplus of at least \$133,141 per year.

## XI. References

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# State Authorization Reciprocity Agreement (SARA) Update

## Summary

*SARA allows accredited degree-granting institutions to offer distance education in other member states without having to seek individual authorization from those states. This report provides an update on the status of SARA in Kansas and nationwide.*

*March 1, 2022*

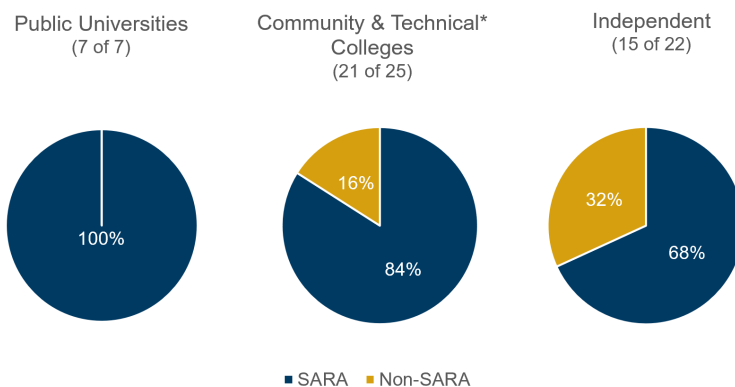
## Background

The State Authorization Reciprocity Agreement (SARA) is a voluntary agreement among its member states and U.S. territories that establishes comparable national standards for the interstate offering of postsecondary distance education courses and programs. It is intended to make it easier for students to take online courses offered by postsecondary institutions based in another state. Since 2014, Kansas has been approved as a member of the National Council for State Authorization Reciprocity Agreements (NC-SARA) through the Midwest Higher Education Compact (MHEC). The Kansas Board of Regents serves as the State Portal Entity (SPE) for all institutions domiciled in Kansas. As the portal entity, KBOR serves as the interstate point of contact for SARA questions, complaints, and other communications for institutions domiciled in Kansas and students taking online courses from those institutions.

## Membership and Participation

For a state to participate in SARA, its legislature must authorize it to join the Agreement. There are over 2,300 participating institutions representing 49 member states, two territories (Puerto Rico and U.S. Virgin Islands), and the District of Columbia. In the Fall of 2020, over 5.8 million students were enrolled exclusively in distance education. This is nearly double the enrollments from the previous year, which is due to the shift from in-person to online learning modalities during the COVID-19 pandemic.

45 Kansas institutions are participating in SARA as of February 15, 2022. The charts below illustrate participation by sector<sup>1</sup>.

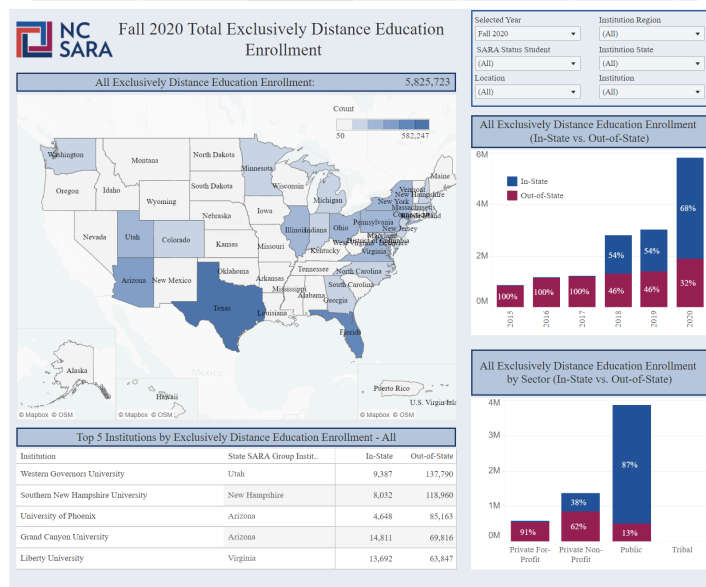


\*Washburn University Institute of Technology participates under the approval of Washburn University and is not included in this count

<sup>1</sup> Two participating institutions are private/out-of-state postsecondary and not reflected in the charts by sector.

## 2021 Annual Data Report

Institutions participating in SARA agree to provide data representing their exclusively distance education enrollments and out-of-state learning placements (clinical rotations, student teaching, internships, etc.) to NC-SARA annually. In coordination with the 2021 Annual Data Report release, NC-SARA announced the availability of interactive data dashboards on their website. These dashboards allow individuals to review the national data and disaggregate the data by region, state, and institution.

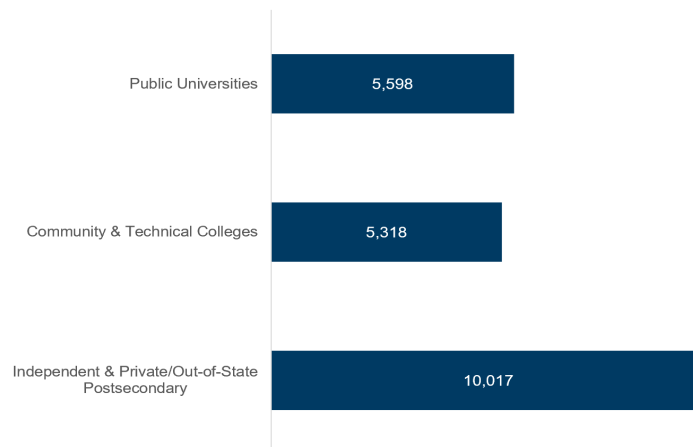


The interactive data dashboards are available at <https://nc-sara.org/data-dashboards>.

## Enrollments and Out-of-State Learning Placements

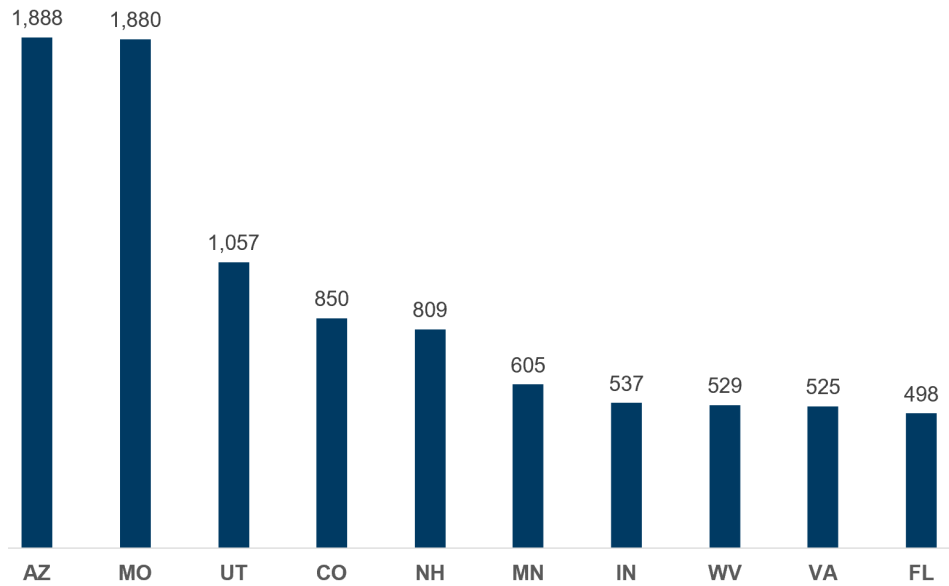
The Fall 2020 exclusively distance education enrollments and 2020 calendar year out-of-state learning placements for participating Kansas institutions are provided below.

In Fall 2020, over 20,000 out-of-state students were enrolled in participating Kansas SARA institutions.



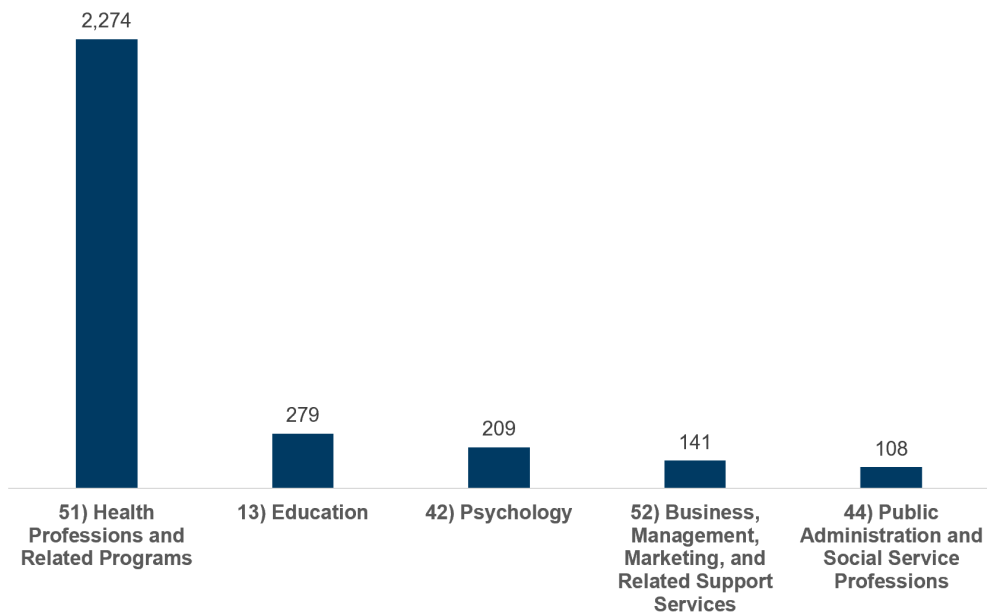
The top three locations where Kansas institutions are enrolling students are Missouri, Texas, and non-SARA member states and territories.

In Fall 2020, over 14,000 Kansans were enrolled in distance education offered in another SARA member state. The top ten enrollments by state are listed below.

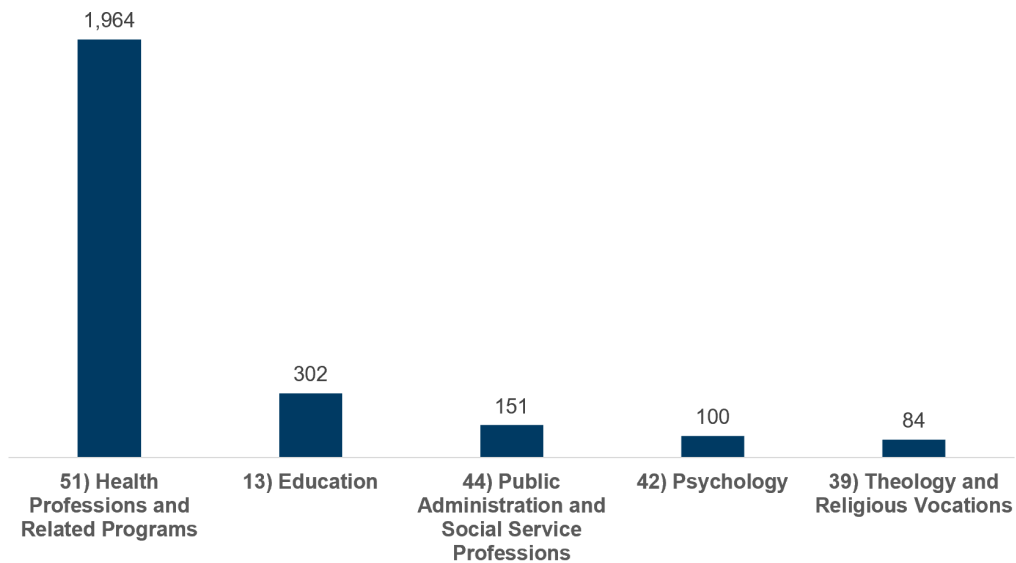


Western Governors University, Southern New Hampshire University, and Penn Foster College are the top three institutions enrolling Kansans.

In the 2020 calendar year, over 3,500 out-of-state students were placed in Kansas. The following represents placements in the top five CIP codes.



In the 2020 calendar year, Kansas institutions placed over 3,100 students out-of-state. The following represents placements in the top five CIP codes.



### Cost Savings Study

To help quantify the value of SARA to institutions and member states, NC-SARA partnered with the National Center for Higher Education Management Systems (NCHEMS) to determine how much an institution saves by choosing to participate in SARA. This study, released in the spring of 2021, examined the cost for an institution to initially seek authorization in another state, as well as the cost to renew their authorization. The results of this study estimated that Kansas institutions participating in SARA saved over \$4.5 million in initial authorization costs and over \$1.5 million in renewal costs. These estimates likely understate the actual cost of seeking authorization in each state as the study only accounted for the direct authorization costs. It does not reflect the costs associated with the time it takes staff to determine the process and provide the required documentation to each state. The complete study is available to view online at <https://nc-sara.org/sara-cost-savings>.

This and previous SARA reports are available at [https://www.kansasregents.org/academic\\_affairs/sara](https://www.kansasregents.org/academic_affairs/sara).