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Solving the Healthcare Employee Shortage: The Effectiveness of Incentive Programs in Enticing Young Health Professionals to Appalachian Kentucky Communities

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Solving the Healthcare Employee Shortage: The Effectiveness of Incentive Programs in Enticing
Young Health Professionals to Appalachian Kentucky Communities

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Summer 2023

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Executive Summary

Introduction of the Issue

Kentucky's Appalachian counties have long been recognized as medically underserved areas, with access to care being limited by a shortage of healthcare professionals in the region. This issue, specifically as it pertains to primary care physicians, has been the focus of many programs hoping to improve access to care in these communities for many years.

Problem Statement/Research Question

Is the ongoing effort to recruit and retain primary care physicians in Appalachian Kentucky counties effective?

Hypotheses

Null hypothesis: The mean number of people per physician in Appalachian Kentucky counties reported in 2013 is equal to the mean number of people per physician in Appalachian Kentucky counties reported in 2023.

Alternative hypothesis: The mean number of people per physician in Appalachian Kentucky counties reported in 2013 is greater than the mean number of people per physician in Appalachian Kentucky counties reported in 2023.

Research Design

A two-sample t-test will compare the mean population per 1 physician in Appalachian Kentucky counties at two data points spanning over the past decade. The test will be evaluated at a significance level of .05.

Findings

The two-sample t-test fails to reject the null hypothesis, reflecting that there has not been a significant change in the average population per 1 physician over the past decade. Kentucky's

physician education programs are a highly valuable resource for the Appalachian region and consistently produce graduates who become Appalachian Kentucky resident physicians.

Recommendations and Conclusions

Appalachian Kentucky communities and stakeholders should focus on bolstering efforts in selection, post-vocational training, and financial incentive programs. Continued research into the individual interventions in the region and their effectiveness on a more detailed level is also warranted.

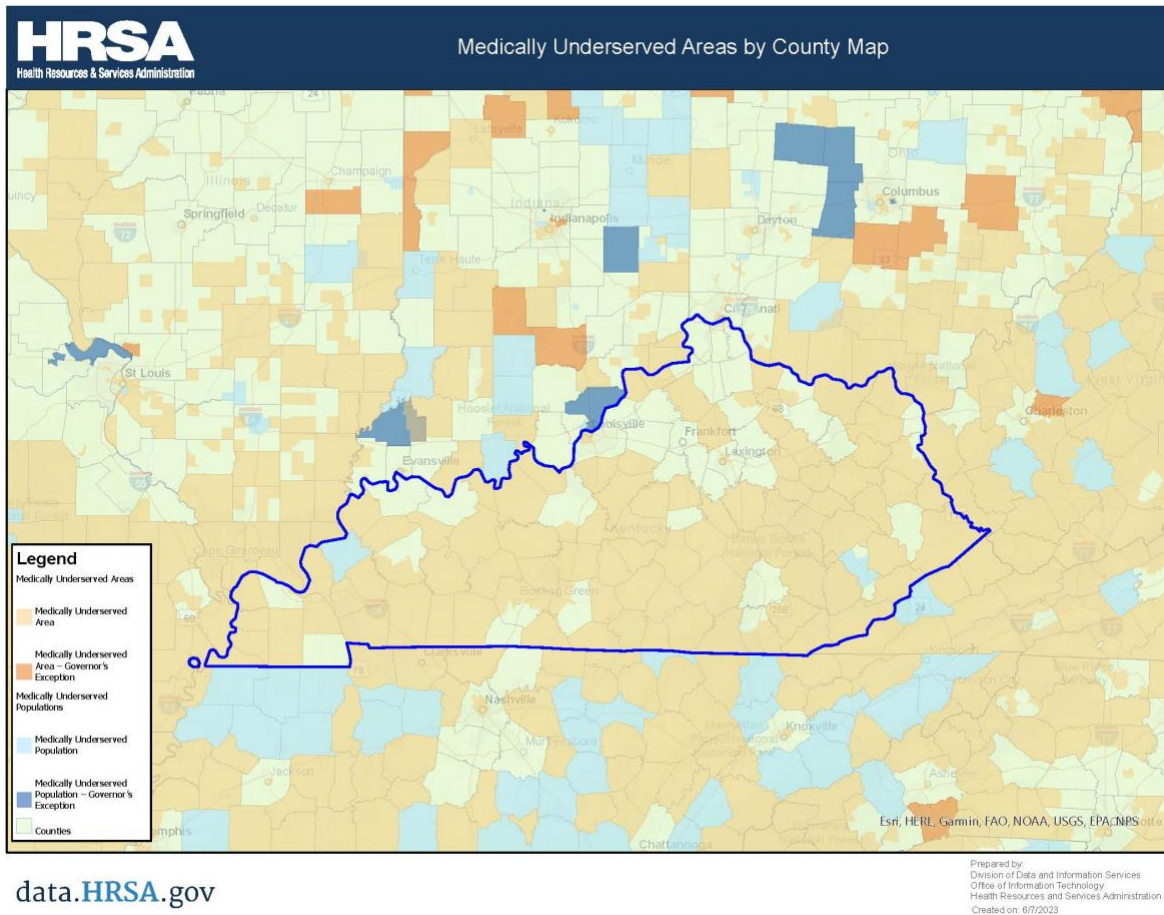
This project's findings demonstrate some slight movement toward a lower regional average population-to-physician ratio, a measurable percentage of graduating physicians remaining in the region for their first years of practice, and the potential for Appalachian Kentucky to continue moving toward a more robust healthcare workforce in the future.

Introduction

The Appalachian Regional Commission (ARC) recognizes 54 of Kentucky's 120 counties as part of the United States Appalachian region (Appalachian Regional Commission, 2023). Of those 54 counties, 49 have been designated as Medically Underserved Areas (MUAs) by the Federal Health Resources & Services Administration (HRSA), depicted in *Figure 1* (Health Resources & Services Administration, 2023). 29 of those MUA-designated Appalachian Kentucky counties received this designation originally in 1978, the earliest year of designation for any county in the nation (Health Resources & Services Administration, 2023). The 20 others have been designated throughout the many years since and all their statuses maintained through periodic updates by the HRSA (Health Resources & Services Administration, 2023). These figures provide insight into one of the greatest struggles of access to necessary healthcare in Appalachian Kentucky that has persisted for decades.

The HRSA indicators for designation as a Medically Underserved Area include the county's provider per 1,000 population ratio, the percentage of the population at 100% of the Federal Poverty Level, the percentage of the population age 65 and older, and the infant mortality rate (Bureau of Health Workforce, n.d.). These indicators are combined to calculate the HRSA's Index of Medical Underservice (IMU) score out of 100 and designate MUA status. An IMU score of 62.0 or less earns an MUA designation (Bureau of Health Workforce, n.d.). MUA-designated Appalachian Kentucky counties, their IMU scores, and their designation dates according to HRSA data are included in Appendix Item 2.

Figure 1: Medically Underserved Areas by County
(Health Resources & Services Administration, 2023)



For as long as 45 years, the designated MUAs in Appalachian Kentucky have been aware of their healthcare employee shortages and able to consider their implications. The consequences for medically underserved areas have been consistent though multiple evaluations: healthcare employee shortages result in limited healthcare services and limited healthcare quality (Dall et al., 2021). The American healthcare system is highly complex and, therefore, solving workforce issues is more than a numbers game. However, the known correlation between an inadequate number of healthcare providers to serve an area's population and lower healthcare quality

demands that MUAs attract more health professionals in order to progress toward better patient outcomes (Dall et al., 2021).

Healthcare employee shortages have been identified in other areas across the United States, with most of the nation recognizing a primary care physician crisis in recent years (Dall et al., 2021; Howard, 2021; County Health Rankings & Roadmaps, 2023). The competition between an evolving effort to solve a regionally pre-existing problem in Appalachian Kentucky and a greater realization of that same problem on a national scale begs an assessment and analysis of what is being done to address this issue in Appalachian Kentucky, and what is working.

A myriad of organizations, institutions, and projects combine to form a multifaceted approach to addressing the healthcare employee shortage in Kentucky's Appalachian counties. These programs combine synergistically to educate more healthcare professionals in the region and to attract more trained healthcare professionals to careers in the region.

First is the ongoing effort to make health professional education more accessible in Appalachian Kentucky. This effort has included the development of the Southeast Kentucky Area Health Education Center's (AHEC) Summer Scrubs Camps for middle and high school students; the expansion of the University of Pikeville to include Colleges of Osteopathic Medicine, Optometry, and soon Dentistry; the regional campus expansion of the University of Kentucky College of Medicine (UKCOM) to include the Rural Physician Leadership Program with a basis in Morehead, Kentucky; and the establishment of new institutions like the Galen College of Nursing's campuses expanding in Appalachian Kentucky counties. AHEC Summer Scrubs Camp has been enrolling students through a competitive admissions process since 2008 (Gross et al., 2012). UPike's College of Osteopathic Medicine, under various names, has

educated students since 1997 with their newer on-campus counterpart, Kentucky's only College of Optometry opening in 2016 (UPIKE, 2022). The UKCOM Rural Physician Leadership Program recently turned over one decade old, after beginning in 2012 (UK College of Medicine, 2022). Galen College of Nursing established the Hazard campus in 2017 (Galen College of Nursing, 2019). Based on these educational programs' durations, consistent availability, and robust nature, they are the most significant programs at work to provide more opportunities for people to be interested in and capable of pursuing healthcare careers across Appalachian Kentucky. Each of these programs has been established in hopes of creating practitioners who will eventually serve the region's patients.

The effectiveness of these programs is evaluated in a few different ways, as they address a few distinct issues underlying the health professional shortage in the region. An immeasurably important component is portraying healthcare careers as visible and attainable to young people in the region. Inspiring and motivating youth to work toward these careers with programs like Summer Scrubs Camp, establishing relationships between Appalachian Kentucky communities and healthcare educational institutions, creating possibilities for Appalachian Kentucky natives to attain higher education within their home region, and enticing aspiring health professionals from around the world to consider attaining their educations within the region are all benefits of increased accessibility to healthcare education in Appalachian Kentucky. Each of these potential effects are means by which health professional education accessibility in the region is a crucial component of addressing its healthcare employee shortage.

A second element of the region's effort is to entice healthcare providers to come to or stay in Appalachian Kentucky to practice after being educated. This approach includes financial incentive programs such as the Healthcare Worker Loan Relief Program of the Commonwealth

(HWLRPC), the Kentucky State Loan Relief Program (KSLRP), and the Kentucky Coal County Pharmacy Scholarship hosted by the Kentucky Higher Education Assistance Authority. The specific requirements and beneficiaries of these programs are all different, but all attempt to minimize the student loan debt burden on healthcare professionals who work in designated service areas. Additionally, health professional residency programs are a component of this effort, giving emerging practitioners opportunities to establish their careers in Appalachian Kentucky counties while gaining advanced training in facilities like the University of Kentucky North Fork Valley Community Health Center or the Appalachian Regional Healthcare hospital system.

Both approaches, training more healthcare providers among the existing population and enticing trained healthcare professionals to careers in rural Appalachian Kentucky, can be highly effective components of solving the healthcare employee shortage in Appalachian Kentucky, and can specifically target the region's need for quality, comprehensive primary care services.

The purpose of this capstone project is to assess whether the aforementioned educational and incentive programs combine to effectively serve Appalachian Kentucky counties. This project will focus on the need for physicians in the region, the impacts of existing educational and financial efforts on the number of physicians in the region so far, and the Kentucky College of Osteopathic Medicine's goal to bring more physicians into the Appalachian Kentucky healthcare workforce. The investigator's goal is ultimately to share this information with Appalachian Kentucky communities so that it may inform the development of new Appalachian-focused programs and the refinement of health professional recruitment efforts in the future.

Literature Review

Although efforts have been made to resolve the healthcare employee shortage in Appalachian Kentucky, the literature on these efforts specific to this region is limited. This review will focus on identifying and comparing various programs and strategies to recruit health professionals to rural areas across the United States and exploring their implementation in rural Appalachia to the greatest extent possible. This review aims to facilitate a better understanding of why ongoing programs and initiatives to entice health professionals to practice in Appalachian Kentucky are expected to be successful.

Communities across America are struggling with recruiting and retaining healthcare professionals, especially in recent years since the start of the COVID-19 pandemic (Dall et al., 2021; Pearce et al., 2016). A primary care physician shortage has become a focus of discussions around America's healthcare workforce issues on national and state levels. Across America, no geographic area or state is immune to this potential health disparity. Counties, both urban and rural, across the nation are classified as medically underserved as a reflection of their population to physician ratio and the other IMU calculation factors.

A 2021 report reveals that Kentucky would need an additional 246 primary care physicians per year to reach the national 1,104 people to 1 primary care physician ratio by 2029 (Howard, 2022). This same report calculated, according to the Kentucky Board of Medical Licensure, that only 51 PCPs had been added to Kentucky's workforce over the previous two years, indicating a net loss and raising alarm for the state's primary care landscape in the years to come (Howard, 2022). Rural and urban communities alike are experiencing this net loss of primary care physicians in Kentucky, but with rural counties' numbers decreasing more quickly (Howard, 2022).

These numerical reflections of the national, state, and local healthcare workforce status demonstrate the essential nature of further research on this topic and the urgency of developing effective solutions. The statistics also demonstrate a staggering need in Kentucky's rural communities like its Appalachian counties. Strategizing for this region in particular warrants further research into the healthcare workforce, context of the obstacles facing the region including its rurality, and evaluation of the efforts that are already underway to address its healthcare workforce shortage.

The literature includes evaluations of the different strategies and interventions that have been employed in rural and remote communities across the United States. Wilson et al.'s critical review assessed the quality of combined evidence to demonstrate the effectiveness of each strategy to counteract the authors' perceived mismatch of rural areas needing more healthcare professionals, and urban areas attracting them more (Wilson et al., 2009). This review classified interventions discussed in 110 prior articles into categories of: **(1) selection, (2) education, (3) coercion, (4) incentives, and (5) support** (Wilson et al., 2009). These five over-arching elements were all evaluated for the strength of their evidence in the included 110 articles in the review (Wilson et al., 2009). The categories with examples and their corresponding ratings as reported by the authors are included in *Table 1*.

Selection interventions include focusing on baseline characteristics of potential future healthcare professionals such as geographic origin, ethnicity, gender, career plan at study/program entry, and service orientation when selecting students into health professional training as indicators of propensity toward future rural practice (Wilson et al., 2009). Within this category, male gender and career intent to practice in a rural setting also reportedly demonstrate strong evidence of association with a career in rural primary care practice (Wilson et al., 2009).

Also within the selection category, the single most strongly associated factor with rural medical practice is geographic origin and attendance of primary school in a rural community (Wilson et al., 2009; MacQueen et al., 2018). Gross et al. put this knowledge into action in Appalachian Kentucky with the development of annual summer camp programs designed to expose middle and high school students to healthcare careers (Gross et al., 2012). At the time of this publication, the Summer Scrubs Camp program implemented by the Southeast Kentucky Area Health Education Center (AHEC) four years prior already demonstrated significant benefits in encouraging students from Appalachian Kentucky counties to pursue higher education related to healthcare careers (Gross et al., 2012). This article sheds light on a program in Appalachian Kentucky that may be unique, but wisely built on the acknowledgement that the next generation of rural healthcare providers can likely be found in today's rural children.

Education interventions include presenting content about rural healthcare in curriculum or exposing future health professionals to rural practice settings through clinical rotations and fellowships (Wilson et al., 2009). Clinical rotations and residency and fellowship programs play a role in the training of nearly every emerging healthcare professional. Some rural communities in Appalachian Kentucky and across the nation strategically provide these programs in an effort to develop connections with soon-to-be new practitioners.

Evidence strongly suggests that individuals who complete post-vocational fellowships in rural health and/or primary care settings are more likely to practice in a rural setting afterward (Wilson et al., 2009; MacQueen et al., 2018). This finding could potentially be biased, and is acknowledged by the authors accordingly, as there is a large element of self-selection involved in fellowship and residency placements (Wilson et al., 2009). The National Resident Matching Program (NRMP) uses an algorithm colloquially referred to as "The Match" to facilitate a

mutual selection process between prospective residents and programs (NRMP, n.d.). Therefore, for a graduate to match into a specific residency program, the individual must express interest in that same program (NRMP, n.d.). This fact may pollute the fellowship intervention assessment made in Wilson et al.'s article, causing there to be some overlap with it in practice and the "career intent" selection-based variable (Wilson et al., 2009). Additionally, the residency program expresses some mutual level of interest through the matching process, typically after interviewing candidates (NRMP, n.d.). This practice may also allow other variables, like geographic origin and career intent, to confound the fellowship intervention assessment (Wilson et al., 2009). Still, the effectiveness of residency and fellowship programs to recruit physicians to begin, and likely continue, their practice careers in Appalachian Kentucky cannot be overstated.

The **coercion** category of intervention includes imposing requirements such as community service requirements or adding rural practice experience as a pre-requisite to further specialization (Wilson et al., 2009). Limiting foreign health professional recruits to practice in rural settings was found in the systematic review to be the most effective coercion technique, demonstrating moderate evidence (Wilson et al., 2009).

Incentives include scholarships or other financial incentives tied to rural practice (Wilson et al., 2009). Financial incentive programs like these are used even on a national level to address healthcare professional shortages by increasing recruitment and retention. An assessment of state-administered financial incentive programs found that 37 states have some such incentive for primary care providers (Geletko et al., 2014). Three Kentucky programs were included in this research which focused on programs designed for recruiting physicians and mid-level professionals to the primary care workforce across the United States (Geletko et al., 2014). These authors' assessment found that loan repayment programs are the most common financial support

for primary care providers across the nation, elaborating that these programs continue to grow and provide an obligated workforce (Geletko et al., 2014). Financial incentives were found to have moderate evidence of effectively recruiting healthcare professionals to rural areas (Wilson et al., 2009). More recently, loan repayment program recipients were found to be highly effective in retaining professionals in rural areas beyond required service durations (Russell et al., 2021).

Finally, the **support** category includes other personal and professional benefits like continued professional development and schedule flexibility to entice providers to a rural practice site (Wilson, et al., 2009). These elements only demonstrated a weak level of evidence overall but may still be considered important to some emerging health professionals making residency, fellowship, and further employment decisions. For example, the presence of an interprofessional education experience model has an observed modest influence on educational training program recruitment (Deutschlander et al., 2013). This review considered programs in rural and urban areas alike (Deutschlander, et al., 2013). Therefore, the findings of this review communicate that interprofessional education alone is of interest to emerging professionals, regardless of their interest in rural or urban areas. The importance of this factor is not quantified in current literature; however, knowing that the presence of interprofessional collaboration opportunities may be important to applicants can inform improvements to clinical rotation sites and post-vocational training programs in Appalachian Kentucky. Furthermore, being aware of this finding could inform more effective marketing and promotion of Appalachian Kentucky-based training programs and healthcare institutions to their respective applicants. While this is not found to be the most crucial strategy for attracting professionals, effectively communicating additional personal and professional benefits may aid in enticing physicians and other providers to rural practice.

Table 1: Interventions aimed at reducing rural-urban mismatch (Wilson, et al., 2009)

Intervention	Evidence summary	Rating	Comments
Selection Geographic origin	Students with a rural origin are more likely to practice in a rural setting	Strong	Single factor most strongly associated with rural practice Attending a rural primary school seems most relevant
Ethnicity	Students from 'underserved' populations are more likely to practice in these communities	Weak	Not consistent, suggested in 1 study that evaluated underserved inner-city (not rural) areas
Gender	Men are more likely to practice rural medicine than women	Strong	More women entering medicine may worsen rural deployment May change if more accommodating conditions are created for women
Career intent	Students whose intent at study entry is to practice rural medicine are more likely to do so	Strong	This proved an independent predictor of rural practice in the PSAP [†] , but 60% of US rural doctors reported no such career intent initially
Service orientation	Students who report involvement in volunteer activities are more likely to practice rural medicine	Weak	Observation at the university of North Carolina that these students are more likely to become generalists, no proof of rural practice
Training <i>Pre-vocational</i> Curriculum content	Emphasizing the theoretical importance of rural health issues influence medical students to consider rural practice	Absent	No evidence that the content of the pre-vocational curriculum influences the decision to enter rural practice
Rural exposure	Clinical rotation in a rural setting influence medical students to consider rural practice	Moderate	Actual clinical exposure (immersion) seems most important, although the perceived impact of rural rotations may be biased by self-selection
		Weak	Pre-vocational rural training, post-vocational training and medical school entry criteria favouring rural students, all are associated with an increased likelihood of being a rural GP
<i>Post-vocational</i> Fellowships	Rural health specialists and family physicians are more likely to practice in a rural setting Pre-vocational students from medical schools that offer generalist fellowships are more likely to become rural doctors	Strong	Results are biased by significant self-selection: No evidence that the creation/availability of these specialties actually reduces the rural-urban mismatch
		Weak	Many potential confounders, impossible to assess the strength of the evidence in the absence of multivariate analysis
Location	Students from medical schools located in rural areas are more likely to practice in a rural setting		Rural placement may only be a surrogate of various other factors, but there seems to be sufficient evidence that rural medical schools do produce more rural doctors
Coercion Registration requirement	Requiring that recently qualified doctors perform 'community service' in a rural area reduces the rural-urban mismatch	Weak	Forced 'community service' definitely addresses short term recruitment, but there is concern that it may alienate people from the profession and from long term rural practice
Prerequisite for specialization	Requiring that doctors spend a minimum number of years in a rural area in order to specialize reduces the rural-urban mismatch	Weak	Practiced in many developing countries, criticized in Indonesia for attracting the wrong 'type' of doctor to rural areas and for reducing the return on investment placed in specialized training
International recruitment	Recruiting foreign doctors, with constraints that limit them to rural practice, reduces the rural-urban mismatch	Moderate	Foreign recruitment is widely practiced, but it often initiates a domino effect in exporting countries
Incentives Bursaries and scholarships	Providing scholarships with an enforceable rural service agreement encourages rural practice	Moderate	Most of the available evidence originate from the USA. Applicability to other countries are not known, or are very limited
Financial compensation	Providing direct financial incentives encourages rural practice	Moderate	Multidimensional programs appeared to be more successful than those relying on financial incentives alone
Support Continuous professional development	Providing sufficient opportunities for continuous professional development encourages rural practice	Weak	Only questionnaire-based data
Specialist outreach support	Providing relevant specialist outreach and support encourages rural practice	Weak	Obligations to ensure that these structures are in place are not met rigorously, and are not always sustainable
Time-off	Providing back-up to allow free time during holidays and weekends encourages rural practice	Weak	The little available evidence indicates a dire need for retention strategies that focus on integration of personal and professional support for rural doctors
Family and lifestyle issues	Addressing the most relevant family and lifestyle issues encourages rural practice	Weak	Implementation of support programs for lifestyles and families of health care professionals are hampered by lack of infrastructural developments, <i>inter alia</i> , in rural areas

[†]PSAP, Physician Shortage Area Program, Thomas Jefferson University, <http://www.tju.edu/psap/>

Existing literature points to these multiple strategies all as possible tools to attract healthcare providers to serve rural and medically underserved areas. These findings and multiple types of interventions are being utilized in rural communities across the United States, including in Appalachian Kentucky. The findings presented in the literature reviewed suggest that the most successful effort likely includes multiple component interventions.

Research Design

With multiple interventions and programs discussed in the previous sections actively underway in Appalachian Kentucky, it becomes clear that the impacts of one program cannot be isolated from the others concurrently active in the physician recruitment and retention ecosystem. This project, therefore, is designed to assess broad trends in physician numbers across Appalachian Kentucky over time.

The County Health Rankings & Roadmaps, via their own systematic review, expresses their highest level of scientific support for rural training in medical education as a strategy to recruit and retain physicians in rural communities (County Health Rankings & Roadmaps, n.d.). Therefore, after initially evaluating the impacts of ongoing efforts to recruit physicians to Appalachian Kentucky counties, this capstone project will then briefly evaluate the impacts of one medical education program. A case study in the effectiveness of this program compared to others in the Commonwealth will indicate whether the utilization of the education strategy in Appalachia proves to be as effective as existing research from other rural areas suggests. Overall and in tandem, these two assessments will be relevant contributions to the literature on this topic and may inform future research.

Research Question

Is the ongoing effort to recruit and retain physicians in Appalachian Kentucky counties effective?

Hypotheses

Null hypothesis: The mean number of people per physician in Appalachian Kentucky counties reported in 2013 is equal to the mean number of people per physician in Appalachian Kentucky counties reported in 2023.

Alternative hypothesis: The mean number of people per physician in Appalachian Kentucky counties reported in 2013 is greater than the mean number of people per physician in Appalachian Kentucky counties reported in 2023.

Design

To address this research question, the hypotheses above will be tested using a two-sample t-test evaluated at a .05 significance level. The population-to-physician ratio for each Appalachian Kentucky county reported by County Health Rankings & Roadmaps will be simplified to the number of people per 1 physician in the county. These numbers from all 54 Appalachian Kentucky counties will be averaged to find the sample means from data reported in 2013 and 2023. Comparing these mean values is a method to evaluate trends in the physician shortage in Appalachian Kentucky over time and determine whether existing programs in these counties are having their desired impacts. Ultimately, this calculation can suggest whether Appalachian Kentucky counties are making progress in the status quo, or if they will need to adapt their approaches to physician recruitment in the future to be successful.

County Health Rankings & Roadmaps (CHR&R) references 2010 data for their 2013 reports and 2020 data for their 2023 reports. CHR&R data definitions and methods were adapted in 2013, such that 2013's report was the first to include the population-to-physician ratio by county using their current criteria. In addition to 2020 being the most recent data currently available, using this year's data is the most effective way to determine the impacts of existing programs in Appalachian Kentucky without the complicating variable of the COVID-19 pandemic and its impacts on the healthcare workforce. The ten-year time frame is convenient to use based on the available data, but also is adequate time to potentially see effects of programs like AHEC Summer Scrubs Camp and Appalachia-based medical residencies.

Using the data sets from CHR&R, calculations of sample means and standard deviations, test statistics, degrees of freedom, t-values, and p-values will all be reported within this paper to allow for complete interpretation of results.

Next, a brief case study will compare the residency placements among graduates of the University of Pikeville Kentucky College of Osteopathic Medicine (KYCOM), the University of Kentucky College of Medicine (UKCOM), and the University of Louisville School of Medicine (ULSOM) in recent years. A comparison of the states and counties in which graduates from each of these institutions have pursued residency training provides insight into the impact of physician education programs being located in the Commonwealth of Kentucky, and one within an Appalachian county. Although residency placements are complex in nature, as discussed in the introduction, this metric can reflect the success of these institutions in educating individuals who continue beyond the completion of their degrees into healthcare practice within Appalachian Kentucky. Wilson et al.'s finding that rural residency-trained practitioners often continue to practice in rural communities suggests that residency placements in Appalachian Kentucky counties could lead to more physicians practicing in the region even beyond a 3-year program (Wilson et al., 2009).

Findings

Primary Analysis

The County Health Rankings & Roadmaps program of the University of Wisconsin Population Health Institute reports the population-to-physician ratio in every county across the United States. These data for Appalachian Kentucky counties are documented in *Table 2*, with each whole number representing the population number per 1 physician. In other words, the tabulated values could be re-written in population-to-physician ratio form as (value):1.

Table 2: Population per 1 Physician in Each Appalachian Kentucky County (2013, 2023)

COUNTY	POPULATION PER 1 PHYSICIAN (2013)	POPULATION PER 1 PHYSICIAN (2023)
Adair	2,327	3,260
Bath	11,624	4,160
Bell	1,913	2,320
Boyd	902	1,010
Breathitt	1,543	1,790
Carter	5,541	5,310
Casey	7,980	16,070
Clark	2,095	2,280
Clay	2,413	2,800
Clinton	2,569	2,020
Cumberland	1,714	2,170
Edmondson	6,079	12,240
Elliott	7,848	7,370
Estill	3,672	4,700
Fleming	1,439	2,920
Floyd	1,360	1,750
Garrard	3,386	4,430
Green	5,624	3,670
Greenup	1,678	1,740
Harlan	2,437	2,840
Hart	2,602	3,170
Jackson	13,522	4,450

Johnson	1,463	1,470
Knott	2,332	3,630
Knox	3,542	3,880
Laurel	2,360	2,550
Lawrence	1,589	3,090
Lee	3,938	3,630
Leslie	5,649	4,820
Letcher	1,638	1,630
Lewis	4,624	6,630
Lincoln	1,903	4,080
Madison	1,697	1,890
Magoffin	13,331	3,000
Martin	4,299	5,520
McCreary	3,053	8,540
Menifee	6,314	2,170
Metcalfe	10,126	5,030
Monroe	2,195	2,110
Montgomery	1,769	2,350
Morgan	3,485	4,380
Nicholas	7,127	7,230
Owsley*	4,774	-
Perry	897	880
Pike	1,354	1,140
Powell	12,637	12,220
Pulaski	1,505	1,280
Robertson*	-	-
Rockcastle	1,895	2,090
Rowan	1,062	1,450
Russell	1,754	3,000
Wayne	1,604	1,840
Whitley	1,273	1,070
Wolfe	7,354	7,110
US Average	1,371	1,310

*Owsley and Robertson Counties omitted from calculations due to lack of data

The values in *Table 2* were averaged for each of the years indicated. These calculated values have been translated to *Table 3* as the Appalachian Average for each respective year to be used for the subsequent calculations documented in *Table 4*.

Table 3: Appalachian Kentucky Average Populations per 1 Physician (2013, 2023)

	2013 (n = 52)	2023 (n = 52)
Sample Mean	3,923.79	3,888.08

Table 4: Two-Sample t-test Statistical Calculations

	2013	2023
Sample Standard Deviation	3,354.86	3,031.50
Pooled Standard Deviation	3,197.28	
Test Statistic (t-value)	0.057	
Degrees of Freedom (df)	102	
p-value	0.477	

The p-value calculated in *Table 4* fails to reject the null hypothesis, indicating that there is not enough evidence to conclude a significant difference in the mean population per physician in Appalachian Kentucky counties in 2023 compared to 2013. The 52 Appalachian Kentucky counties assessed have sustained an average population-to-physician ratio staggering above the national statistic over the past decade.

It is also worth noting that, based on the data reported in *Table 2*, some individual counties have ratios much more comparable to the United States value. However, Appalachian Kentucky functions mostly on a regional basis. The rurality of many counties in the region lends itself to individuals living, working, having families, going grocery shopping, and/or seeking medical care all in different counties within the region. This validates the sample mean as a worthwhile calculation to best represent the reality of access to physicians across the region.

Case Study: Kentucky Schools and Colleges of Medicine

KYCOM publicly reports their residency match data for graduates from the years 2019 to 2022 (UPike 2019c). In this period, 502 students matched to residency sites across the United States. It is relevant to, once again, acknowledge the nature of “The Match” and the fact that a multitude of factors ultimately determine a graduate’s residency placement. Some factors, including specialty of interest, could draw a graduate to another state for residency who intends to return to the region to practice later; or to the opposite end, could result in a graduate completing residency somewhere within the region before leaving for the remainder of their career. However, residents provide independent medical care during their programs. Therefore, even if their residency program is the only time that a physician spends practicing in Appalachian Kentucky, it is time that they are contributing to the healthcare needs of the region and can make a calculable impact on the population to physician ratio in their respective counties within the Commonwealth. Additionally, multiple findings from the literature review suggest that residents are likely to remain in the region after completion of their program, extending the duration of their impact on the region’s healthcare resources further into their careers.

Of the 502 students who matched somewhere in the country for a residency program, 102 KYCOM graduates matched within the Commonwealth of Kentucky (UPike 2019c). This represents about 20.3% of matched graduates during the referenced period remaining within the state. The 102 Kentucky-matched graduates are further detailed in *Table 5*. This includes the names of the programs and institutions to which they matched, the counties where these programs are located, and the number of graduates who matched to each respective program over this 4-year period. Counties in bold letters in blue rows within the table indicate that the program is based in an Appalachian Kentucky county.

Table 5: KYCOM 2019-2022 Graduates Matching to Residency in Kentucky (UPike, 2019c).

PROGRAM	COUNTY	NUMBER OF MATCHES
A-OPTIC/Lake Cumberland Regional Hospital	Pulaski	17
Glasgow Family Medicine – University of Louisville	Barren	2
Good Samaritan Hospital	Fayette	3
Pikeville Medical Center	Pike	8
St. Claire Regional Medical Center	Rowan	2
St. Elizabeth Medical Center	Boone/Kenton/Campbell	8
The Medical Center at Bowling Green	Warren	11
University of Kentucky Medical Center**	Fayette	24
University of Kentucky Family Practice/Appalachian Regional Healthcare	Perry	1
University of Louisville School of Medicine	Jefferson	23
Whitesburg Appalachian Regional Healthcare	Letcher	3
TOTAL KY PLACEMENTS		102
TOTAL APPALACHIAN KY PLACEMENTS		31

***KYCOM website reports 27 matches to this site. This figure includes the 3 who are listed as having matched to Good Samaritan Hospital. As such, the Good Samaritan Hospital matches are listed within that row only, and the UKMC count was adjusted to 24 accordingly.*

31 of the 102, or 30.4%, Kentucky-matched KYCOM graduates were matched to programs within Appalachian counties (UPike 2019c). This may seem disproportionate on the surface, as 45% of Kentucky’s counties are Appalachian. However, Appalachian Kentucky counties account for only about 25.7% of Kentucky’s population based on the 2020 Census. Therefore, these 30.4% of Kentucky matches represent a focus on the Appalachian counties within the Commonwealth.

Overall, these 31 graduates represent about 6.2% of residency matching KYCOM graduates over these 4 years immediately entering an Appalachian Kentucky practice setting. This demonstrates a contribution of the College to the region’s physician workforce, fulfilling the University of Pikeville's (2019b) mission to “produce graduates who are committed to serving the healthcare needs of communities in rural Kentucky and other Appalachian regions.” However, this percentage is a bit lower than some may anticipate for the College since it is based within this very region. Although the College does not enumerate a quantitative goal for this statistic publicly, 6.2% is likely lower than the College’s ideal target to optimally fulfill their place-based mission.

The University of Kentucky College of Medicine (UKCOM) has provided a comprehensive list of residency match sites for their graduates over the same 2019 to 2022 period for the purpose of this analysis and comparison to UPike’s KYCOM. The full data set is provided in Appendix Item 3. Over those four years, 550 graduates matched to residency programs. 212 of these matches were to Kentucky residency sites, representing 38.5% of matches being to placements within the Commonwealth (UK College of Medicine, 2023b). This represents a greater percentage of Kentucky matches from the University of Kentucky than from KYCOM. UKCOM’s Kentucky matches are detailed further in *Table 6*, in the same format as was described for *Table 5*.

Only 6 of UKCOM’s Kentucky match placements were to residency program sites located in Appalachian counties (UK College of Medicine, 2023b). These 6 graduates represent 2.8% of the Kentucky-matched group and only 1.1% of UKCOM’s 550 total matches. It is further worth noting that 5 of the 6 Appalachian Kentucky matches were to University of Kentucky satellite sites in the region, located in Rowan and Perry counties (UK College of

Medicine, 2023b). This reflects a potential level of loyalty to the institution and the UK HealthCare system that may come into play during the “Match” process, and that may be relevant to consider in ongoing physician recruitment efforts and the development of new residency programs in the future. The University’s investment in residency program development in Appalachian Kentucky counties has contributed significantly to the region’s growing opportunities for physician recruitment. However, UK’s commitment to the region is not equally reflected in the College’s post-graduate training placements.

Table 6: UKCOM 2019-2022 Graduates Matching to Residency in Kentucky

(UK College of Medicine, 2023b).

PROGRAM	COUNTY	NUMBER OF MATCHES
A-OPTIC/Lake Cumberland Regional Hospital	Pulaski	1
St. Elizabeth Medical Center	Boone/Kenton/Campbell	4
University of Kentucky Dentistry/Medical Center	Fayette	177
University of Kentucky - Bowling Green	Warren	6
University of Kentucky Family Practice/Appalachian Regional Healthcare	Perry	1
University of Kentucky - Morehead	Rowan	4
University of Louisville School of Medicine	Jefferson	19
TOTAL KY PLACEMENTS		212
TOTAL APPALACHIAN KY PLACEMENTS		6

The University of Louisville School of Medicine (ULSOM) reports their 2020 Residency Match Results in a similar format (University of Louisville, n.d.). Publicly available data for other years does not include the same county- and facility-level of specificity. This data set

representing only one year limits its ability to be compared to the 4-year KYCOM and UKCOM data with certainty; however, this data still represents a means to compare all of Kentucky’s physician education institutions during an overlapping time frame.

Of 152 ULSOM graduates matching to residency programs in 2020, 47 graduates, or 30.9% of the group, matched to residency programs in Kentucky (University of Louisville, n.d.). This proportion is comparable to the same statistic reported in the above KYCOM data. The Kentucky-matched ULSOM graduates are represented in more detail in *Table 7*.

Table 7: ULSOM 2020 Graduates Matching to Residency in Kentucky

(University of Louisville, n.d.).

PROGRAM	COUNTY	NUMBER OF MATCHES
A-OPTIC/Lake Cumberland Regional Hospital	Pulaski	1
Baptist Health Madisonville	Hopkins	1
St. Elizabeth Medical Center	Boone/Kenton/Campbell	1
University of Kentucky Medical Center	Fayette	4
University of Kentucky Family Practice/Appalachian Regional Healthcare	Perry	1
University of Louisville School of Medicine	Jefferson	39
TOTAL KY PLACEMENTS		47
TOTAL APPALACHIAN KY PLACEMENTS		2

Only two of the 47 Kentucky-matched ULSOM graduates, or 4.3% of the subgroup, were matched to programs in Appalachian Kentucky counties (University of Louisville, n.d.). This can also be represented as 2 students out of the 152 residency-matching graduates, or 1.3% of the Class of 2020. These percentages differ significantly from the parallel KYCOM proportions, and

more closely compare with UKCOM proportions. This finding suggests that KYCOM being located in an Appalachian Kentucky county leads to higher proportions of graduates choosing to remain in the Appalachian region for residency training, while UKCOM and ULSOM's locations outside the Appalachian region result in lower proportions of graduates choosing to begin their practice in an Appalachian county.

The University of Kentucky College of Medicine has additionally shared results from the Class of 2023 residency match in March, boasting 81 UKCOM graduates who will pursue a residency program in Kentucky (UK College of Medicine, 2023b). These 81 graduates represent 43% of the UKCOM's largest group of matching students and concurrently the highest percentage of any graduating class in UKCOM history to pursue post-vocational training within the Commonwealth (UK College of Medicine, 2023a). This proportion of Kentucky matches is significantly greater than those reported by KYCOM and ULSOM and is even measurably greater than the 2019-2022 Kentucky-matching figure from UKCOM.

UKCOM gives credit for this achievement to their regional campus expansion (UK College of Medicine, 2023a). The number of 2023 Kentucky-matched residents for the College is more than twice the number of students per year prior to UKCOM's expansion into Western, Northern, and Eastern Kentucky (UK College of Medicine, 2023a).

Further details about these 81 matches, including the institutions and/or counties represented within the Kentucky-matching subgroup of the class, are not yet publicly available from UKCOM, but were also provided for the purpose of this comparative analysis (UK College of Medicine, 2023b). Only 1 UKCOM 2023 graduate matched to any residency program based in Appalachian Kentucky, at the UK Medical Center program based in Morehead (UK College of Medicine, 2023b). This finding, especially among a historically large Kentucky-matching group,

is particularly surprising. A single Appalachian Kentucky matching graduate may be considered when evaluating impacts of UK's Rural Physician Leadership Program or when strategizing for future Appalachian physician recruitment efforts.

Further analysis of all three of these institutions and many more of their classes over time may be even more telling of these programs' contributions to Appalachian Kentucky's physician recruitment efforts. This case study provides a basis for continued research, ideally at an individual level, to explore what specific factors may be correlated with residency placements for Kentucky-educated physicians.

Recommendations and Discussion

Despite action taken by individuals, nonprofit organizations, educational institutions, and healthcare facilities to address healthcare workforce challenges, 49 Appalachian Kentucky counties sustain their MUA designations, and many Appalachian people continue to struggle to access the healthcare they need. The duration of both this struggle and the attempted solutions begs the question of whether these efforts have been effective and how the region can continue to expand these efforts for future generations. A two-sample t-test suggests that current programs have not had a statistically significant impact on the physician shortage in Appalachian Kentucky.

First and foremost, continued research into this complex issue in this region is still warranted. Although this project evaluated the region's progress toward addressing the healthcare employee shortage holistically, any program or intervention aimed at increasing the number of physicians practicing in Appalachian Kentucky could benefit from individual evaluation. A clear next step for future research is to study the impacts of these individual programs to identify which ones are most effective, and which ones may not be the best use of the region's resources. Additionally, surveying students, residents, and practitioners across the nation to better understand why they practice either within or outside of an Appalachian Kentucky county could complement existing literature and help organizations optimize their priorities and strategies to ensure future program successes.

Based on a review of existing literature, three specific strategies for physician recruitment and retention in rural areas have strong evidence of success and should be prioritized in Appalachian Kentucky. In terms of the Wilson et al. categories, these are selection, education, and incentives (Wilson et al., 2009). Kentucky's physician education institutions must continue

to prioritize, perhaps even more highly than they already do, recruiting students from Appalachian Kentucky and other rural communities and/or who express intent to practice in a rural primary care setting. Institutions and clinics facilitating post-vocational training in Appalachian Kentucky must effectively promote their programs, recruit applicants strategically, and pursue expansion whenever possible. Finally, the expansion of existing scholarships and loan repayment programs and creation of new funds to attract individuals to the region should be prioritized. As presented in the introduction, each of these strategies are already being utilized in Appalachian Kentucky. The entire region can strive for continued improvement of these efforts and, ideally, will one day witness the beneficial impacts of hard work and strategic innovation within each of these priority areas.

This project's findings numerically may not appear as encouraging for the strides that have been made in the physician shortage in Appalachian Kentucky as one may hope. However, the numbers reported do demonstrate some slight movement in the right direction over the past ten years with a slightly lower regional population-to-physician ratio, a measurable percentage of graduating physicians remaining in the region for their first years of practice, and potential for the region to strategize to continue making strides into the future.

Conclusion

Many of Kentucky's 54 Appalachian counties have been recognized as Medically Underserved Areas for decades, with access to care being limited by several factors including geography and socioeconomic status. A shortage of healthcare professionals continues to present challenges for the region's people and patients. However, addressing this specific challenge has been the focus of many programs hoping to improve access to care in these communities.

Is the ongoing effort to recruit and retain primary care physicians in Appalachian Kentucky counties effective? Asking this research question and testing the hypotheses as done in this project would suggest that the answer at this time is "not effective enough." The average population per 1 physician in Appalachian Kentucky counties has not significantly changed in the past decade. The region remains significantly medically underserved and must evaluate how to improve existing programs and consider creating new ones to change this reality.

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Appendix

Item 1: Not Human Research (NHR) Designation, pursuant to University of Kentucky

Internal Review Board (IRB) protocol

NHR Determination - Taylor Williams

Penn, Desiree D. <desiree.penn@uky.edu>

Thu 6/8/2023 10:50 AM

To: Williams, Taylor J. <tjwi244@uky.edu>

Cc: Lake-Bullock, Helene M. <hbullo@email.uky.edu>; Stafford, Pam <pastaf3@uky.edu>; Brown, Joe <joe.brown@uky.edu>

📎 1 attachments (57 KB)

NotHumanResearchNHRDeterminati_2023-06-02_1609(Taylor_Williams).pdf;

Good morning, Taylor.

On June 8, 2023, the Institutional Review Board (IRB) Chair or designee reviewed your attached NHR request form and additional information. Based on the information you provided, it was determined that your proposed project does not require IRB review because it does not appear you will be doing research about a living individual, but about the number of resident physicians being produced among the schools and colleges of medicine in the Commonwealth of Kentucky who start their careers practicing in Appalachian Kentucky counties. As such, the activity does not meet the federal definition of human subject; "a living individual about whom an investigator conducting research obtains (i) information or biospecimens through intervention or interaction with the individual and uses, studies, or analyzes the information or biospecimens; or (ii) obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens." [45 CFR 46.102(e)(1)].

Although your project does not require IRB review, please contact the Office of Research Integrity before making any changes to your project because some changes may make the project eligible for IRB review.

If you have any questions regarding the IRB's/designee's decision or if any of the information listed above is incorrect, please contact the Office of Research Integrity at 859-257-9428.

Thank you,

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Have Questions? Need Help? Come to Office Hours or Request a Consult! Click [here](#) for more information. Stay informed and [Sign up](#) to receive ORI news and announcements.

The University of Kentucky currently operates under a Link Blue-secure, web-based human research IRB application system called "E-IRB". To log-in, and keep apprised of news and updates about E-IRB, please visit the [E-IRB Info web page](#) and online resources. To learn how to navigate in the new system, review the various [E-IRB Video Tutorials](#).

Item 2: Federal Health Resources & Services Administration-designated Medically Underserved Areas Among Appalachian Kentucky Counties (MUA Find, 2023) (continued on next page)

Discipline	MUA/PID	Service Area Name	Designation Type	Primary State Name	County	Index of Medical Underservice Score	Status	Rural Status	Designation Date	Update Date	
Primary Care	1211413202	Adair County	Medically Underserved Area	Kentucky	Adair County, KY	55	Designated	Rural	02/01/2019	10/11/2022	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Adair	Adair	Single County	21001					Rural
Primary Care	1219678135	Bath County	Medically Underserved Area	Kentucky	Bath County, KY	58	Designated	Rural	03/07/2011	10/13/2022	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Bath	Bath	Single County	21011					Rural
Primary Care	1218035795	Bell County	Medically Underserved Area	Kentucky	Bell County, KY	53	Designated	Rural	09/20/2017	04/09/2021	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Bell	Bell	Single County	21013					Rural
Primary Care	01315	Boyd Service Area	Medically Underserved Area	Kentucky	Boyd County, KY	45.7	Designated	Non-Rural	05/19/1994	05/19/1994	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Boyd	302	Census Tract	21019030200					Non-Rural
Primary Care	1218195895	Breathitt County	Medically Underserved Area	Kentucky	Breathitt County, KY	53	Designated	Rural	02/23/1999	10/13/2022	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Breathitt	Breathitt	Single County	21025					Rural
Primary Care	06106	Buckhorn Service Area	Medically Underserved Area	Kentucky	Perry County, KY	45.2	Designated	Rural	07/30/1999	07/30/1999	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Perry	Buckhorn	County Subdivision	2119390408					Rural
Primary Care	1215117222	Carter County	Medically Underserved Area	Kentucky	Carter County, KY	54	Designated	Rural	11/01/1978	10/13/2022	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Carter	Carter	Single County	21043					Rural
Primary Care	1215418581	Casey County	Medically Underserved Area	Kentucky	Casey County, KY	49	Designated	Rural	11/01/1978	10/13/2022	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Casey	Casey	Single County	21045					Rural
Primary Care	1211141408	Clay County	Medically Underserved Area	Kentucky	Clay County, KY	61	Designated	Rural	11/01/1978	10/13/2022	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Clay	Clay	Single County	21051					Rural
Primary Care	1217485972	Clinton County	Medically Underserved Area	Kentucky	Clinton County, KY	55	Designated	Rural	11/01/1978	10/13/2022	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Clinton	Clinton	Single County	21053					Rural
Primary Care	1215774303	Cumberland County	Medically Underserved Area	Kentucky	Cumberland County, KY	62	Designated	Rural	09/30/2009	04/09/2021	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Cumberland	Cumberland	Single County	21057					Rural
Primary Care	1213903055	Edmonson County	Medically Underserved Area	Kentucky	Edmonson County, KY	54	Designated	Rural	11/01/1978	04/10/2023	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Edmonson	Edmonson	Single County	21061					Rural
Primary Care	1216185009	Elliott County	Medically Underserved Area	Kentucky	Elliott County, KY	45	Designated	Rural	11/01/1978	04/10/2023	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Elliott	Elliott	Single County	21063					Rural
Primary Care	1211038356	Estill County	Medically Underserved Area	Kentucky	Estill County, KY	49	Designated	Rural	11/01/1978	04/10/2023	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Estill	Estill	Single County	21065					Rural
Primary Care	1218592027	Garrard County	Medically Underserved Area	Kentucky	Garrard County, KY	61	Designated	Rural	10/19/2020	10/19/2020	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Garrard	Garrard	Single County	21079					Rural
Primary Care	1218950942	Green County	Medically Underserved Area	Kentucky	Green County, KY	55	Designated	Rural	06/24/1999	04/09/2021	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Green	Green	Single County	21087					Rural
Primary Care	01248	GREENUP SERVICE AREA	Medically Underserved Area	Kentucky	Greenup County, KY	59	Designated	Partially Rural	11/01/1978	11/01/1978	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Greenup	Greenup	Single County	21089					Partially Rural
Primary Care	1216709712	Harlan County	Medically Underserved Area	Kentucky	Harlan County, KY	54	Designated	Rural	11/01/1978	04/10/2023	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Harlan	Harlan	Single County	21095					Rural
Primary Care	1212681137	Hart County	Medically Underserved Area	Kentucky	Hart County, KY	60	Designated	Rural	03/12/1999	10/19/2020	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Hart	Hart	Single County	21099					Rural
Primary Care	1211126189	Jackson County	Medically Underserved Area	Kentucky	Jackson County, KY	50	Designated	Rural	11/01/1978	10/19/2020	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Jackson	Jackson	Single County	21109					Rural
Primary Care	1212029395	Johnson County	Medically Underserved Area	Kentucky	Johnson County, KY	60	Designated	Rural	03/18/2020	03/18/2020	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Johnson	Johnson	Single County	21115					Rural
Primary Care	1216486349	Knott County	Medically Underserved Area	Kentucky	Knott County, KY	49	Designated	Rural	11/01/1978	10/19/2020	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Knott	Knott	Single County	21119					Rural
Primary Care	1213550713	Knox County	Medically Underserved Area	Kentucky	Knox County, KY	51	Designated	Rural	11/01/1978	10/19/2020	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Knox	Knox	Single County	21121					Rural
Primary Care	1212723153	Lee County	Medically Underserved Area	Kentucky	Lee County, KY	53	Designated	Rural	11/01/1978	10/19/2020	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Lee	Lee	Single County	21129					Rural
Primary Care	1215597785	Leslie County	Medically Underserved Area	Kentucky	Leslie County, KY	54	Designated	Rural	11/01/1978	05/24/2021	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Leslie	Leslie	Single County	21131					Rural
Primary Care	01260	LETCHER SERVICE AREA	Medically Underserved Area	Kentucky	Letcher County, KY	48.2	Designated	Rural	11/01/1978	11/01/1978	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Letcher	Letcher	Single County	21133					Rural
Primary Care	1218851811	Lewis County	Medically Underserved Area	Kentucky	Lewis County, KY	56	Designated	Rural	05/25/2007	10/19/2020	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Lewis	Lewis	Single County	21135					Rural
Primary Care	1211248124	Lincoln County	Medically Underserved Area	Kentucky	Lincoln County, KY	52	Designated	Rural	05/26/2017	05/24/2021	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Lincoln	Lincoln	Single County	21137					Rural
Primary Care	01268	MADISON SERVICE AREA	Medically Underserved Area	Kentucky	Madison County, KY	49.6	Designated	Rural	04/21/1995	04/21/1995	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Madison	Madison	Single County	21151					Rural
Primary Care	1212328046	Magoffin County	Medically Underserved Area	Kentucky	Magoffin County, KY	61.5	Designated	Rural	11/01/1978	02/01/2019	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Magoffin	Magoffin	Single County	21153					Rural
Primary Care	01271	Martin County	Medically Underserved Area	Kentucky	Martin County, KY	58.9	Designated	Rural	11/01/1978	04/09/2014	
		Component State Name	Component County Name	Component Name	Component Type	Component GEOID					Component Rural Status
		Kentucky	Martin	Martin	Single County	21159					Rural

Primary Care	1213733792	McCreary County	Medically Underserved Area	Kentucky	McCreary County, KY	50	Designated	Rural	11/01/1978	10/19/2020
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	McCreary	McCreary	Single County	21147	Rural				
Primary Care	1216589307	Menifee County	Medically Underserved Area	Kentucky	Menifee County, KY	49	Designated	Rural	11/01/1978	10/19/2020
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Menifee	Menifee	Single County	21165	Rural				
Primary Care	1216321594	Metcalfe County	Medically Underserved Area	Kentucky	Metcalfe County, KY	53	Designated	Rural	11/01/1978	10/19/2020
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Metcalfe	Metcalfe	Single County	21169	Rural				
Primary Care	1213887918	Monroe County	Medically Underserved Area	Kentucky	Monroe County, KY	62	Designated	Rural	05/12/2017	05/12/2017
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Monroe	Monroe	Single County	21171	Rural				
Primary Care	01277	MONTGOMERY SERVICE AREA	Medically Underserved Area	Kentucky	Montgomery County, KY	55.1	Designated	Rural	11/01/1978	11/01/1978
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Montgomery	Montgomery	Single County	21173	Rural				
Primary Care	1214378079	Morgan County	Medically Underserved Area	Kentucky	Morgan County, KY	54	Designated	Rural	11/01/1978	10/19/2020
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Morgan	Morgan	Single County	21175	Rural				
Primary Care	1219258899	Nicholas County	Medically Underserved Area	Kentucky	Nicholas County, KY	51.4	Designated	Rural	02/01/2019	02/01/2019
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Nicholas	Nicholas	Single County	21181	Rural				
Primary Care	1218785723	Owsley County	Medically Underserved Area	Kentucky	Owsley County, KY	49	Designated	Rural	11/01/1978	10/19/2020
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Owsley	Owsley	Single County	21189	Rural				
Primary Care	01287	PIKE SERVICE AREA	Medically Underserved Area	Kentucky	Pike County, KY	44.4	Designated	Rural	11/01/1978	11/01/1978
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Pike	Pike	Single County	21195	Rural				
Primary Care	1212442088	Powell County	Medically Underserved Area	Kentucky	Powell County, KY	60	Designated	Rural	01/10/2011	10/19/2020
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Powell	Powell	Single County	21197	Rural				
Primary Care	01289	PULASKI SERVICE AREA	Medically Underserved Area	Kentucky	Pulaski County, KY	58	Designated	Rural	11/01/1978	11/01/1978
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Pulaski	Pulaski	Single County	21199	Rural				
Primary Care	1217918504	Robertson County	Medically Underserved Area	Kentucky	Robertson County, KY	46	Designated	Rural	11/01/1978	05/24/2021
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Robertson	Robertson	Single County	21201	Rural				
Primary Care	01291	Rockcastle County	Medically Underserved Area	Kentucky	Rockcastle County, KY	59.8	Designated	Rural	11/01/1978	08/26/2013
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Rockcastle	Rockcastle	Single County	21203	Rural				
Primary Care	1213520884	Russell County	Medically Underserved Area	Kentucky	Russell County, KY	59	Designated	Rural	12/04/2015	10/19/2020
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Russell	Russell	Single County	21207	Rural				
Primary Care	07719	Southwest Lawrence Service Area	Medically Underserved Area	Kentucky	Lawrence County, KY	53.8	Designated	Rural	08/19/2009	08/19/2009
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Lawrence	9302	Census Tract	21127930200	Rural				
	Kentucky	Lawrence	9303	Census Tract	21127930300	Rural				
	Kentucky	Lawrence	9304	Census Tract	21127930400	Rural				
	Kentucky	Lawrence	9305	Census Tract	21127930500	Rural				
Primary Care	1214619000	Wayne County	Medically Underserved Area	Kentucky	Wayne County, KY	56	Designated	Rural	11/01/1978	06/10/2021
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Wayne	Wayne	Single County	21231	Rural				
Primary Care	07934	Williamsburg/South Whitley County	Medically Underserved Area	Kentucky	Whitley County, KY	58.4	Designated	Rural	10/03/2013	10/03/2013
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Whitley	9205	Census Tract	21235920500	Rural				
	Kentucky	Whitley	9206	Census Tract	21235920600	Rural				
	Kentucky	Whitley	9207	Census Tract	21235920700	Rural				
	Kentucky	Whitley	9208	Census Tract	21235920800	Rural				
Primary Care	1217788661	Wolfe County	Medically Underserved Area	Kentucky	Wolfe County, KY	61.4	Designated	Rural	11/01/1978	11/16/2016
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Wolfe	Wolfe	Single County	21237	Rural				
Primary Care	06103	Low Inc - Hazard Service Area	Medically Underserved Population	Kentucky	Perry County, KY	60.1	Designated	Rural	07/29/1999	07/29/1999
	Component State Name	Component County Name	Component Name	Component Type	Component GEOID	Component Rural Status				
	Kentucky	Perry	Hazard	County Subdivision	2119391648	Rural				
	Kentucky	Perry	Viper	County Subdivision	2119393576	Rural				
	Kentucky	Perry	Defiance-Vicco	County Subdivision	2119391032	Rural				
	Kentucky	Perry	Krypton	County Subdivision	2119391944	Rural				

Item 3: University of Kentucky College of Medicine Residency Matches for Graduating Classes
of 2019-2023 (referenced as UK College of Medicine, 2023b)

Obtained via email communication with Drs. Michelle Lineberry and Elizabeth Berry Seelbach

Class of 2019:

Specialty	Program
Internal Medicine	Appalachian OPTIC-KY
Family Medicine	St Elizabeth Med Ctr-KY
Oral Surgery	U Kentucky Denistry
Oral Surgery	U Kentucky Denistry
Oral Surgery	U Kentucky Denistry
Anesthesiology	U Kentucky Med Ctr
Anesthesiology	U Kentucky Med Ctr
Anesthesiology	U Kentucky Med Ctr
Family Medicine	U Kentucky Med Ctr
Family Medicine	U Kentucky Med Ctr
Family Medicine	U Kentucky Med Ctr
Family Medicine	U Kentucky Med Ctr
General Surgery	U Kentucky Med Ctr
General Surgery	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Medicine-Pediatrics	U Kentucky Med Ctr
Medicine-Pediatrics	U Kentucky Med Ctr
Medicine-Pediatrics	U Kentucky Med Ctr
Medicine-Preliminary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Neurological Surgery	U Kentucky Med Ctr

Orthopaedic Surgery	U Kentucky Med Ctr
Orthopaedic Surgery	U Kentucky Med Ctr
Orthopaedic Surgery	U Kentucky Med Ctr
Orthopaedic Surgery	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Peds/Psych/Child Psych	U Kentucky Med Ctr
Plastic Surgery (Integrated)	U Kentucky Med Ctr
Psychiatry	U Kentucky Med Ctr
Psychiatry	U Kentucky Med Ctr
Radiology-Diagnostic	U Kentucky Med Ctr
Radiology-Diagnostic	U Kentucky Med Ctr
Family Medicine	U Kentucky Med Ctr - Hazard
Anesthesiology	U Louisville SOM-KY
Child Neurology	U Louisville SOM-KY
Emergency Medicine	U Louisville SOM-KY
Family Medicine	U Louisville SOM-KY
General Surgery	U Louisville SOM-KY
Internal Medicine	U Louisville SOM-KY
Ophthalmology	U Louisville SOM-KY
General Surgery	Ascension St John Hosp-MI
Rad-Diag/Research	Barnes-Jewish Hosp-MO
Psychiatry	Butler Hospital/Brown Univ-RI
Psychiatry	Carilion Clinic-Virginia Tech Carilion SOM
Psychiatry	Carolinas Med Ctr-NC
	Case Western/Univ Hosps Cleveland Med Ctr-OH
Pediatrics	
Urology	Cleveland Clinic Fdn-OH
Neurology	Duke Univ Med Ctr-NC
Neurology	Duke Univ Med Ctr-NC
Emergency Medicine	Eastern VA Med School-VA
Internal Medicine	Eisenhower Army MC
Radiology-Diagnostic	Florida Hosp-Orlando-FL
Internal Medicine	Greenville Health Sys/Univ of So Carolina
Internal Medicine	Greenville Health Sys/Univ of So Carolina
Medicine-Pediatrics	Greenville Health Sys/Univ of So Carolina
Neurology	Hosp of the Univ of PA
Psychiatry	Indiana University SOM - Vincennes
General Surgery	Jackson Memorial Hosp-FL
Internal Medicine	Johns Hopkins Hosp-MD
Internal Medicine	Johns Hopkins Hosp-MD
Internal Medicine	Kaiser Permanente-Los Angeles-CA
Plastic Surgery (Integrated)	Mayo Clinic School of Grad Med Educ-AZ

Dermatology	Mayo Clinic School of Grad Med Educ-MN
Internal Medicine	Mayo Clinic School of Grad Med Educ-MN
Neurology	Mayo Clinic School of Grad Med Educ-MN
Phys Medicine & Rehab	Mayo Clinic School of Grad Med Educ-MN
Internal Medicine	Medical College of Georgia
Otolaryngology	Medical College of Georgia
Internal Medicine	MedStar Georgetown Univ Hosp-DC
Emergency Medicine	Mercy St Vincent Med Ctr-OH
General Surgery	Methodist Hospital-Houston-TX
Neurological Surgery	Methodist Hospital-Houston-TX
Family Medicine	Mountain AHEC-NC
Pediatrics	Nationwide Childrens Hosp-OH
Pediatrics-Primary	Nationwide Childrens Hosp-OH
Obstetrics-Gynecology	NMC Portsmouth
Emergency Medicine	Northwestern McGaw/NMH/VA-IL
Pathology	Northwestern McGaw/NMH/VA-IL
Neurology	Ohio State University Med Ctr
Urology	Ohio State University Med Ctr
Medicine-Pediatrics	Penn State Hershey Med Ctr-PA
Family Medicine	Phoebe Putney Mem Hosp-GA
Emergency Medicine	Presence Resurrection Med Ctr-IL
Emergency Medicine	Rush University Med Ctr-IL
Internal Medicine	Rush University Med Ctr-IL
Medicine-Preliminary	San Antonio USHEC
Internal Medicine	St Louis Univ SOM-MO
Internal Medicine	St Louis Univ SOM-MO
Internal Medicine	Summa Health/NEOMED-OH
Pediatrics	Tripler Army MC
Transitional Year	Tripler Army MC
Radiology-Diagnostic	Tulane Univ SOM-LA
Anesthesiology	U Alabama Med Ctr-Birmingham
Pediatrics-Medical Genetics	U Alabama Med Ctr-Birmingham
General Surgery	U Arkansas COM-Little Rock
Internal Medicine	U Arkansas-Fayetteville Comm Progs
Medicine-Preliminary	U Florida COM-Shands Hosp
Pediatrics	U Florida COM-Shands Hosp
Plastic Surgery (Integrated)	U Florida COM-Shands Hosp
Anesthesiology	U Iowa Hosps and Clinics
Internal Medicine	U Minnesota Med School
Radiology-Diagnostic	U Minnesota Med School
Internal Medicine	U South Florida Morsani COM-Tampa
Medicine-Pediatrics	U South Florida Morsani COM-Tampa
Emergency Medicine	U Tennessee COM-Chattanooga

Medicine-Pediatrics	U Tennessee COM-Memphis
Pediatrics	U Tennessee COM-Memphis
Obstetrics-Gynecology	U Tennessee Grad SOM-Knoxville
Internal Medicine	U Texas Southwestern Med Sch-Dallas
Interventional Radiology (Integ)	U Texas Southwestern Med Sch-Dallas
Family Medicine	U Toronto
Internal Medicine	UC Davis Med Ctr-CA
Ophthalmology	University Hosps-Columbia-MO
General Surgery	University of Hawaii
Neurology	University of Virginia
Radiology-Diagnostic	University of Virginia
Family Medicine	Valley Med Ctr-WA
Internal Medicine	Vanderbilt Univ Med Ctr-TN
Transitional Year	William Beaumont Army MC
Internal Medicine	Wright Patterson AFB
Internal Medicine	Wright State Univ Boonshoft SOM-OH
Internal Medicine	Wright State Univ Boonshoft SOM-OH
General Surgery	York Hospital-PA

Class of 2020:

Specialty	Program
Oral Surgery	U Kentucky Dentistry
Oral Surgery	U Kentucky Dentistry
Oral Surgery	U Kentucky Dentistry
Anesthesiology	U Kentucky Med Ctr
Anesthesiology	U Kentucky Med Ctr
Anesthesiology	U Kentucky Med Ctr
Emergency Medicine	U Kentucky Med Ctr
Emergency Medicine	U Kentucky Med Ctr
Emergency Medicine	U Kentucky Med Ctr
Emergency Medicine	U Kentucky Med Ctr
Emergency Medicine	U Kentucky Med Ctr
Family Medicine	U Kentucky Med Ctr
General Surgery	U Kentucky Med Ctr
General Surgery	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr

Medicine-Pediatrics	U Kentucky Med Ctr
Medicine-Pediatrics	U Kentucky Med Ctr
Medicine-Preliminary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Neurology	U Kentucky Med Ctr
Obstetrics-Gynecology	U Kentucky Med Ctr
Ophthalmology	U Kentucky Med Ctr
Ophthalmology	U Kentucky Med Ctr
Pathology	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Plastic Surgery (Integrated)	U Kentucky Med Ctr
Psychiatry	U Kentucky Med Ctr
Psychiatry	U Kentucky Med Ctr
Psychiatry	U Kentucky Med Ctr
Radiology-Diagnostic	U Kentucky Med Ctr
Radiology-Diagnostic	U Kentucky Med Ctr
Radiology-Diagnostic	U Kentucky Med Ctr
Surgery-Preliminary	U Kentucky Med Ctr
Surgery-Preliminary	U Kentucky Med Ctr
Family Medicine	U Kentucky Med Ctr - Morehead
Pediatrics	U Louisville SOM-KY
Psychiatry	U Louisville SOM-KY
Emergency Medicine	Advocate Health Care-IL
Obstetrics-Gynecology	Albert Einstein Med Ctr-PA
General Surgery	B I Deaconess Med Ctr-MA
Internal Medicine	Barnes-Jewish Hosp-MO
Medicine-Primary	Barnes-Jewish Hosp-MO
Medicine-Primary	Barnes-Jewish Hosp-MO
Internal Medicine	Baylor Coll Med-Houston-TX
Radiology-Diagnostic	Boston Univ Med Ctr-MA
Anesthesiology	Brigham & Womens Hosp-MA
Radiology-Diagnostic	Brookwood Baptist Health-AL
Plastic Surgery (Integrated)	Carilion Clinic-Virginia Tech Carilion SOM
Internal Medicine	Carolinas Med Ctr-NC
Internal Medicine	Case Western/MetroHealth Med Ctr-OH
Neurology	Cleveland Clinic Fdn-OH
Neurology	Cleveland Clinic Fdn-OH
Family Medicine	Deaconess Hospital-IN
Medicine-Pediatrics	Detroit Med Ctr/WSU-MI
Internal Medicine	Emory Univ SOM-GA

Internal Medicine	Emory Univ SOM-GA
Psychiatry	FAU-Schmidt COM-FL
Obstetrics-Gynecology	Good Samaritan Hosp-Cinn-OH
Obstetrics-Gynecology	Good Samaritan Hosp-Cinn-OH
Obstetrics-Gynecology	Good Samaritan Hosp-Cinn-OH
Obstetrics-Gynecology	Indiana University SOM
Radiology-Diagnostic	Indiana University SOM
General Surgery	Jewish Hospital-OH
Child Neurology	Loma Linda University-CA
Internal Medicine	Marshall University SOM-WV
Dermatology	Mayo Clinic School of Grad Med Educ-FL
General Surgery	Memorial Health-Univ Med Ctr-GA
Psychiatry	Naval Medical Center Portsmouth
Obstetrics-Gynecology	New Hanover Reg Med Ctr-NC
Internal Medicine	NYP Hosp-Weill Cornell Med Ctr-NY
General Surgery	Ohio State University Med Ctr
Internal Medicine	Ohio State University Med Ctr
Internal Medicine	Ohio State University Med Ctr
Phys Medicine & Rehab	Ohio State University Med Ctr
Pediatrics	Penn State Hershey Med Ctr-PA
Family Medicine	St Ritas Medical Center-OH
Transitional Year	Tripler, Honolulu, HI
General Surgery	Tulane Univ SOM-LA
Internal Medicine	U Alabama Med Ctr-Birmingham
Radiology-Diagnostic	U Alabama Med Ctr-Birmingham
Internal Medicine	U Cincinnati Med Ctr-OH
Internal Medicine	U Cincinnati Med Ctr-OH
Ophthalmology	U Cincinnati Med Ctr-OH
Pediatrics	U Florida COM-Shands Hosp
Psychiatry	U Florida COM-Shands Hosp
Medicine-Pediatrics	U Illinois COM-Chicago
Internal Medicine	U Illinois COM-Peoria OSF
Medicine-Pediatrics	U Illinois COM-Peoria OSF
Obstetrics-Gynecology	U Kansas SOM-Kansas City
Internal Medicine	U Maryland Med Ctr
Internal Medicine	U Maryland Med Ctr
Anesthesiology	U North Carolina Hospitals
Anesthesiology	U North Carolina Hospitals
Psychiatry	U North Carolina Hospitals
Internal Medicine	U Tennessee COM-Chattanooga
Emergency Medicine	U Texas Southwestern Med Sch-Dallas
Radiology-Diagnostic	UC San Francisco-CA

Interventional Radiology (Integ)	Univ of Chicago Med Ctr-IL
Family Medicine	University at Buffalo SOM-NY
Internal Medicine	University at Buffalo SOM-NY
Orthopaedic Surgery	University of Utah Health
Otolaryngology	University of Virginia
Pathology	University of Virginia
Emergency Medicine	UT St Thomas Hospitals-TN
Emergency Medicine	UT St Thomas Hospitals-TN
Emergency Medicine	Vanderbilt Univ Med Ctr-TN
Medicine-Pediatrics	Vanderbilt Univ Med Ctr-TN
Neurology	Vanderbilt Univ Med Ctr-TN
Neurology	Vanderbilt Univ Med Ctr-TN
Pediatrics	Vanderbilt Univ Med Ctr-TN
Medicine-Pediatrics	Virginia Commonwealth U Hlth Sys
Pediatrics	Virginia Commonwealth U Hlth Sys
Pediatrics	Virginia Commonwealth U Hlth Sys
Internal Medicine	Wake Forest Baptist Med Ctr-NC
Internal Medicine	Wake Forest Baptist Med Ctr-NC
Obstetrics-Gynecology	Wake Forest Baptist Med Ctr-NC
Ophthalmology	Wake Forest Baptist Med Ctr-NC
Emergency Medicine	West Virginia University SOM
Internal Medicine	Wright State Univ Boonshoft SOM-OH
General Surgery	Wright-Patterson
Internal Medicine	Wright-Patterson
Internal Medicine	Wright-Patterson
Psychiatry	Zucker SOM-Northwell Mather Hosp-NY
Research	
Research	

Class of 2021:

Specialty	Program
Family Medicine	St Elizabeth Med Ctr-KY
Oral Surgery	U Kentucky Dentistry
Oral Surgery	U Kentucky Dentistry
Oral Surgery	U Kentucky Dentistry
Anesthesiology	U Kentucky Med Ctr
Anesthesiology	U Kentucky Med Ctr
Anesthesiology	U Kentucky Med Ctr

Diagnostic Radiology	U Kentucky Med Ctr
Diagnostic Radiology	U Kentucky Med Ctr
Diagnostic Radiology	U Kentucky Med Ctr
Diagnostic Radiology	U Kentucky Med Ctr
Emergency Medicine	U Kentucky Med Ctr
Emergency Medicine	U Kentucky Med Ctr
Emergency Medicine	U Kentucky Med Ctr
Family Medicine	U Kentucky Med Ctr
General Surgery	U Kentucky Med Ctr
General Surgery	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Medicine-Pediatrics	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Neurology	U Kentucky Med Ctr
Neurology	U Kentucky Med Ctr
Neurology	U Kentucky Med Ctr
Obstetrics-Gynecology	U Kentucky Med Ctr
Ophthalmology	U Kentucky Med Ctr
Ophthalmology	U Kentucky Med Ctr
Ophthalmology	U Kentucky Med Ctr
Orthopaedic Surgery	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Plastic Surgery (Integrated)	U Kentucky Med Ctr
Psychiatry	U Kentucky Med Ctr
Psychiatry/Adult Child Integ	U Kentucky Med Ctr
Surgery-Preliminary	U Kentucky Med Ctr
Surgery-Preliminary	U Kentucky Med Ctr
Family Medicine	U Kentucky Med Ctr - Morehead
Family Medicine	U Kentucky Med Ctr - Morehead

Family Medicine	U Louisville SOM-KY
Family Medicine	U Louisville SOM-KY
Internal Medicine	U Louisville SOM-KY
Internal Medicine	U Louisville SOM-KY
Otolaryngology	U Louisville SOM-KY
Pediatrics	U Louisville SOM-KY
Medicine-Primary	B I Deaconess Med Ctr-MA
Internal Medicine	Barnes-Jewish Hosp-MO
Diagnostic Radiology	Boston Univ Med Ctr-MA
Family Medicine	Campbell University-NC
General Surgery	Carilion Clinic-Virginia Tech Carilion SOM
Emergency Medicine	Carolinas Med Ctr-NC
Emergency Medicine	Case Western/Univ Hosps Cleveland Med Ctr-OH
Int Med/Leadership in Med Ed	Case Western/Univ Hosps Cleveland Med Ctr-OH
Pediatrics	Childrens National Med Ctr-DC
Child Neurology	Cincinnati Childrens Hosp Med Ctr-OH
Research/Industry	did not enter match - entering industry
Surgery-Preliminary	East Tennessee St Univ
Diagnostic Radiology	Eastern VA Med School-VA
Family Medicine	Eglin Air Force Base
Obstetrics-Gynecology	Good Samaritan Hosp-Cinn-OH
Transitional Year	Hurley Medical Ctr-MI
Pediatrics	Inova Fairfax Hospital-VA
Family Medicine	LewisGale Med Ctr-VA
Pediatrics	Madigan Army Medical Center
Neurology	Mayo Clinic School of Grad Med Educ-FL
Internal Medicine	Mayo Clinic School of Grad Med Educ-MN
Medicine-Pediatrics	Med Coll Wisconsin Affil Hosps
Pediatrics	Med Coll Wisconsin Affil Hosps
Pediatrics	Med Ctr Navicent Health/Mercer SOM-GA
Neurology	Medical University of SC
Obstetrics-Gynecology	MedStar Washington Hosp Ctr-DC
Internal Medicine	Montefiore Med Ctr/Einstein-NY
Pediatrics	Montefiore Med Ctr/Einstein-NY
Family Medicine	Mountain AHEC-NC
Obstetrics-Gynecology	New Hanover Reg Med Ctr-NC
Research	no match for ophtho - doing research
Internal Medicine	Northwestern McGaw/NMH/VA-IL
Ophthalmology	NY Presb. Hosp-Weill MC/Cornell U
Medicine-Preliminary	NYU Long Island
General Surgery	Penn State Hershey Med Ctr-PA

Pediatrics	Penn State Hershey Med Ctr-PA
Medicine-Primary	Prisma Health-U of SC SOM Columbia
Pediatrics	Prisma Health-U of SC SOM Columbia
Internal Medicine	Rush University Med Ctr-IL
Psychiatry	St Elizabeths Hospital/DBH-DC
Internal Medicine	St Louis Univ SOM-MO
Internal Medicine	Thomas Jefferson Univ-PA
Internal Medicine	Training in Scotland
Internal Medicine	Tripler Army Medical Center
Emergency Medicine	U Arizona COM-Tucson
Internal Medicine	U Cincinnati Med Ctr-OH
Internal Medicine	U Cincinnati Med Ctr-OH
Medicine-Primary	U Connecticut School of Medicine
General Surgery	U Florida COM-Shands Hosp
Otolaryngology	U Florida COM-Shands Hosp
Diagnostic Radiology	U Kansas SOM-Kansas City
Medicine-Psychiatry	U Kansas SOM-Kansas City
Orthopaedic Surgery	U Kansas SOM-Kansas City
Internal Medicine	U Maryland Med Ctr
Family Medicine	U Michigan Hosps-Ann Arbor
Obstetrics-Gynecology	U Michigan Hosps-Ann Arbor
Emergency Medicine	U North Carolina Hospitals
Family Medicine	U North Carolina Hospitals
Psychiatry	U North Carolina Hospitals
Otolaryngology	U Oklahoma COM-OK City
Family Medicine	U South Alabama Hospitals
Medicine-Pediatrics	U Texas Southwestern Med Sch-Dallas
Psychiatry	UC San Diego Med Ctr-CA
General Surgery	UIC/Mt Sinai Hosp Med Ctr-IL
Emergency Medicine	University Hosps-Jackson-MS
Family Medicine	University of Virginia
Emergency Medicine	UT Ascension St Thomas-TN
Emergency Medicine	UT Ascension St Thomas-TN
Emergency Medicine	Vanderbilt Univ Med Ctr-TN
Internal Medicine	Vanderbilt Univ Med Ctr-TN
Surgery-Preliminary	Vanderbilt Univ Med Ctr-TN
Emergency Medicine	Vidant Med Ctr/East Carolina Univ-NC
Pediatrics	Wright State Univ Boonshoft SOM-OH
Urology	Yale School of Medicine

Class of 2022:

Specialty	Program
Family Medicine	St Elizabeth Med Ctr-KY
Family Medicine	St Elizabeth Med Ctr-KY
Oral Surgery	U Kentucky Dentistry
Oral Surgery	U Kentucky Dentistry
Oral Surgery	U Kentucky Dentistry
Anesthesiology	U Kentucky Med Ctr
Anesthesiology	U Kentucky Med Ctr
Anesthesiology	U Kentucky Med Ctr
Anesthesiology	U Kentucky Med Ctr
Diagnostic Radiology	U Kentucky Med Ctr
Diagnostic Radiology	U Kentucky Med Ctr
Diagnostic Radiology	U Kentucky Med Ctr
Emergency Medicine	U Kentucky Med Ctr
Emergency Medicine	U Kentucky Med Ctr
Emergency Medicine	U Kentucky Med Ctr
Family Medicine	U Kentucky Med Ctr
Family Medicine	U Kentucky Med Ctr
General Surgery	U Kentucky Med Ctr
General Surgery	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Medicine-Pediatrics	U Kentucky Med Ctr
Medicine-Pediatrics	U Kentucky Med Ctr
Medicine-Pediatrics	U Kentucky Med Ctr
Medicine-Pediatrics	U Kentucky Med Ctr
Medicine-Pediatrics	U Kentucky Med Ctr
Medicine-Preliminary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Neurological Surgery	U Kentucky Med Ctr
Neurology	U Kentucky Med Ctr
Obstetrics-Gynecology	U Kentucky Med Ctr

Ophthalmology	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Peds/Psych/Child Psych	U Kentucky Med Ctr
Phys Medicine & Rehab	U Kentucky Med Ctr
Phys Medicine & Rehab	U Kentucky Med Ctr
Psychiatry	U Kentucky Med Ctr
Psychiatry/Adult Child Integ	U Kentucky Med Ctr
Psychiatry/Adult Child Integ	U Kentucky Med Ctr
Surgery-Preliminary	U Kentucky Med Ctr
Surgery-Preliminary	U Kentucky Med Ctr
General Surgery	U Kentucky Med Ctr - Bowling Green
Obstetrics-Gynecology	U Kentucky Med Ctr - Bowling Green
Obstetrics-Gynecology	U Kentucky Med Ctr - Bowling Green
Transitional Year	U Kentucky Med Ctr - Bowling Green
Transitional Year	U Kentucky Med Ctr - Bowling Green
Transitional Year	U Kentucky Med Ctr - Bowling Green
Family Medicine	U Kentucky Med Ctr - Morehead
Diagnostic Radiology	U Louisville SOM-KY
Family Medicine	U Louisville SOM-KY
Family Medicine	U Louisville SOM-KY
Obstetrics-Gynecology	U Louisville SOM-KY
Neurology	B I Deaconess Med Ctr-MA
Diagnostic Radiology	Baptist Mem Med Education-TN
Emergency Medicine	Carolinas Med Ctr-NC
General Surgery	Carolinas Med Ctr-NC
Pediatrics	Case Western/Univ Hosps Cleveland Med Ctr-OH
Pediatrics	Case Western/Univ Hosps Cleveland Med Ctr-OH
Pediatrics	Cincinnati Childrens Hosp Med Ctr-OH
Pathology	Dartmouth-Hitchcock Med Ctr-NH
Internal Medicine	Duke Univ Med Ctr-NC
Diagnostic Radiology	Emory Univ SOM-GA
Medicine-Pediatrics	Geisinger Health System-PA
Obstetrics-Gynecology	Good Samaritan Hosp-Cinn-OH
Surgery-Preliminary	Good Samaritan Hosp-Cinn-OH
Research Fellowship	Harrington Heart and Vascular Institute in Cleveland
Internal Medicine	HCA Healthcare/TriStar Nashville-TN
Psychiatry	HCA Healthcare/TriStar Nashville-TN
Transitional Year	HCA Healthcare/USF Morsani GME Blake-FL

Dermatology	Indiana University SOM
General Surgery	Indiana University SOM
Internal Medicine	Indiana University SOM
Medicine-Pediatrics	Indiana University SOM
Transitional Year	Intermountain Med Ctr-UT
Psychiatry	ISMMS Mount Sinai Beth Israel-NY
Pathology	Johns Hopkins Hosp-MD
Internal Medicine	Legacy Emanuel/Good Samaritan-OR
Psychiatry	Marshall University SOM-WV
Psychiatry	Mayo Clinic School of Grad Med Educ-MN
Medicine-Pediatrics	Med Coll Wisconsin Affil Hosps
Pediatrics	Medical College of Georgia
Anesthesiology	Medical University of SC
Diagnostic Radiology	Medical University of SC
Emergency Medicine	Medical University of SC
Pediatrics	Medical University of SC
Family Medicine	Mount Carmel Health System-OH
Obstetrics-Gynecology	Mt Sinai Med Ctr-Miami-FL
Emergency Medicine	Northeast Georgia Med Ctr
General Surgery	NYU Grossman School Of Medicine-NY
Medicine-Primary	Ohio State University Med Ctr
Psychiatry	Ohio State University Med Ctr
Family Medicine	OhioHealth-Grant Med Ctr
Family Medicine	OhioHealth-Grant Med Ctr
Emergency Medicine	Oregon Health & Science Univ
Internal Medicine	Oregon Health & Science Univ
Research Fellowship	Orthopaedic Research Fellowship at UAB
Research Fellowship	Orthopaedic Research Fellowship at UAB
Internal Medicine	Prisma Health-U of SC SOM Columbia
Medicine-Primary	Prisma Health-U of SC SOM Columbia
Family Medicine	Prisma Health-U of SC SOM Greenville
Internal Medicine	Prisma Health-U of SC SOM Greenville
Medicine-Pediatrics	Prisma Health-U of SC SOM Greenville
Emergency Medicine	San Diego Naval Medical Center
Family Medicine	Self Regional Healthcare-SC
Internal Medicine	U Alabama Med Ctr-Birmingham
Internal Medicine	U Alabama Med Ctr-Birmingham
Orthopaedic Surgery	U Arizona COM-Phoenix
Obstetrics-Gynecology	U Arkansas COM-Little Rock
Diagnostic Radiology	U Cincinnati Med Ctr-OH
Internal Medicine	U Cincinnati Med Ctr-OH

Orthopaedic Surgery	U Cincinnati Med Ctr-OH
Phys Medicine & Rehab	U Cincinnati Med Ctr-OH
Phys Medicine & Rehab	U Cincinnati Med Ctr-OH
Internal Medicine	U Colorado SOM-Denver
Emergency Medicine	U Florida COM-Shands Hosp
Internal Medicine	U Florida COM-Shands Hosp
Internal Medicine	U Illinois COM-Chicago
Anesthesiology	U Michigan Hosps-Ann Arbor
Anesthesiology	U Michigan Hosps-Ann Arbor
Emergency Medicine	U North Carolina Hospitals
General Surgery	U North Carolina Hospitals
Ophthalmology	U of Florida, Gainesville
Emergency Medicine	U South Alabama Hospitals
Emergency Medicine	U South Florida Morsani COM-Tampa
Internal Medicine	U South Florida Morsani COM-Tampa
Obstetrics-Gynecology	U Southern California
Obstetrics-Gynecology	U Tennessee Grad SOM-Knoxville
Emergency Medicine	U Texas HSC-San Antonio
Emergency Medicine	U Texas Med Sch-Houston
General Surgery	U Texas Southwestern Med Sch-Dallas
General Surgery	U Texas Southwestern Med Sch-Dallas
Internal Medicine/PSTP	U Texas Southwestern Med Sch-Dallas
Internal Medicine	UMass Chan Medical School-MA
Emergency Medicine	Unity Health-AR
Emergency Medicine	Univ of Chicago Med Ctr-IL
Internal Medicine	Univ of Chicago Med Ctr-IL
Anesthesiology	University of Virginia
Medicine-Primary	University of Virginia
Pediatrics	University of Virginia
Research Fellowship	Urology Research Fellowship at Case Western Reserve
Internal Medicine	UT Ascension St Thomas-TN
Anesthesiology	Vanderbilt Univ Med Ctr-TN
Obstetrics-Gynecology	Virtua-NJ
Internal Medicine	Wake Forest Baptist Med Ctr-NC
Psychiatry	Wake Forest Baptist Med Ctr-NC
Internal Medicine	Walter Reed
Pediatrics	Walter Reed
Medicine-Pediatrics	West Virginia University SOM
Internal Medicine	Wright Patterson
Internal Medicine	Wright State Univ Boonshoft SOM-OH

Class of 2023:

Specialty	Program
Family Medicine	St Elizabeth Med Ctr-KY
Family Medicine	St Elizabeth Med Ctr-KY
Family Medicine	St Elizabeth Med Ctr-KY
Family Medicine	St Elizabeth Med Ctr-KY
Family Medicine	St Elizabeth Med Ctr-KY
Oral Surgery	U Kentucky Dentistry
Oral Surgery	U Kentucky Dentistry
Oral Surgery	U Kentucky Dentistry
Anesthesiology	U Kentucky Med Ctr
Anesthesiology	U Kentucky Med Ctr
Anesthesiology	U Kentucky Med Ctr
Anesthesiology	U Kentucky Med Ctr
Anesthesiology	U Kentucky Med Ctr
Anesthesiology	U Kentucky Med Ctr
Child Neurology	U Kentucky Med Ctr
Emergency Medicine	U Kentucky Med Ctr
Emergency Medicine	U Kentucky Med Ctr
Emergency Medicine	U Kentucky Med Ctr
Family Medicine	U Kentucky Med Ctr
Family Medicine	U Kentucky Med Ctr
General Surgery	U Kentucky Med Ctr
General Surgery	U Kentucky Med Ctr
General Surgery	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Internal Medicine	U Kentucky Med Ctr
Medicine-Pediatrics	U Kentucky Med Ctr
Medicine-Pediatrics	U Kentucky Med Ctr
Medicine-Pediatrics	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Primary	U Kentucky Med Ctr
Medicine-Psychiatry	U Kentucky Med Ctr
Neurology	U Kentucky Med Ctr
Obstetrics-Gynecology	U Kentucky Med Ctr
Obstetrics-Gynecology	U Kentucky Med Ctr

Ophthalmology	U Kentucky Med Ctr
Orthopaedic Surgery	U Kentucky Med Ctr
Orthopaedic Surgery	U Kentucky Med Ctr
Orthopaedic Surgery	U Kentucky Med Ctr
Otolaryngology	U Kentucky Med Ctr
Pathology	U Kentucky Med Ctr
Pathology	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Pediatrics	U Kentucky Med Ctr
Phys Medicine & Rehab	U Kentucky Med Ctr
Plastic Surgery (Integrated)	U Kentucky Med Ctr
Psychiatry	U Kentucky Med Ctr
Psychiatry/Adult Child Integ	U Kentucky Med Ctr
Psychiatry/Adult Child Integ	U Kentucky Med Ctr
Radiology-Diagnostic	U Kentucky Med Ctr
Radiology-Diagnostic	U Kentucky Med Ctr
Radiology-Diagnostic	U Kentucky Med Ctr
Urology	U Kentucky Med Ctr
General Surgery	U Kentucky Med Ctr - Bowling Green
Internal Medicine	U Kentucky Med Ctr - Bowling Green
Internal Medicine	U Kentucky Med Ctr - Bowling Green
Internal Medicine	U Kentucky Med Ctr - Bowling Green
Internal Medicine	U Kentucky Med Ctr - Bowling Green
Internal Medicine	U Kentucky Med Ctr - Bowling Green
Internal Medicine	U Kentucky Med Ctr - Bowling Green
Obstetrics-Gynecology	U Kentucky Med Ctr - Bowling Green
Family Medicine	U Kentucky Med Ctr - Morehead
Anesthesiology	U Louisville SOM-KY
Dermatology	U Louisville SOM-KY
Emergency Medicine	U Louisville SOM-KY
Emergency Medicine	U Louisville SOM-KY
Family Medicine	U Louisville SOM-KY
Internal Medicine	U Louisville SOM-KY
Obstetrics-Gynecology	U Louisville SOM-KY
Ophthalmology	U Louisville SOM-KY
Pediatrics	U Louisville SOM-KY
Psychiatry	U Louisville SOM-KY
Radiology-Diagnostic	U Louisville SOM-KY
Family Medicine	U Louisville SOM-KY-Glasgow
Family Medicine	U Louisville SOM-KY-Glasgow
Psychiatry	Akron Gen Med Ctr/NEOMED-OH
Obstetrics-Gynecology	Ascension St Vincent Hosp-IN

Neurology	Barnes-Jewish Hosp-MO
Surgery-Preliminary	Case Western/Univ Hosps Cleveland Med
Pediatrics	Case Western/Univ Hosps Cleveland Med Ctr-OH
	Case Western/Univ Hosps Cleveland Med, Leadership in
Internal Medicine	Med/Ed
Pediatrics	Childrens Hospital-Boston-MA
Internal Medicine	Christ Hospital-OH
Internal Medicine	Christ Hospital-OH
Internal Medicine	Christ Hospital-OH
Internal Medicine	Christiana Care-DE
Pediatrics	Cincinnati Childrens Hosp Med Ctr-OH
Pediatrics	Dartmouth-Hitchcock Med Ctr-NH
Internal Medicine	Detroit Med Ctr/WSU-MI
Pediatrics-Medical Genetics	Detroit Med Ctr/WSU-MI
Surgery-Preliminary	Detroit Med Ctr/WSU-MI
Pediatrics	Eastern Virginia Med School
Medicine-Pediatrics	ECU Health Med Ctr-NC
Internal Medicine	Emory Univ SOM-GA
Pediatrics	Emory Univ SOM-GA
Pediatrics	Emory Univ SOM-GA
Family Medicine	Franciscan Health-IN
Obstetrics-Gynecology	Good Samaritan Hosp-Cinn-OH
Neurology	Harbor-UCLA Med Ctr-CA
Internal Medicine	HCA Healthcare/TriStar Nashville-TN
Neurology	HCA Healthcare/TriStar Nashville-TN
Psychiatry	HCA Healthcare/TriStar Nashville-TN
Internal Medicine	HCA Healthcare/USF Morsani GME-Trinity-FL
Internal Medicine	Indiana University SOM
Neurological Surgery	Indiana University SOM
Obstetrics-Gynecology	Indiana University SOM
Pediatrics	Indiana University SOM
Otolaryngology	ISMMS Mount Sinai Hospital-NY
Internal Medicine	ISMMS Mount Sinai Morningside-West-NY
Internal Medicine	Johns Hopkins Hosp-MD
Internal Medicine	Kettering Health Network-OH
Medicine-Pediatrics	Loyola Univ Med Ctr-IL
Family Medicine	Marshall University SOM-WV
General Surgery	Marshall University SOM-WV
Internal Medicine	Marshall University SOM-WV
Dermatology	Mayo Clinic School of Grad Med Educ-MN
General Surgery	Med Coll Wisconsin Affil Hosps
General Surgery	Med Coll Wisconsin Affil Hosps
Medicine-Pediatrics	Med Coll Wisconsin Affil Hosps

Pediatrics	Med Coll Wisconsin Affil Hosps
Family Medicine	Medical University of SC
Radiology-Diagnostic	Memorial Health-Univ Med Ctr-GA
Obstetrics-Gynecology	Methodist Hospital-Houston-TX
Psychiatry	Mission Community Hosp-CA
Internal Medicine	Mount Carmel Health System-OH
Internal Medicine	Mountain AHEC-NC
Child Neurology	Nationwide Childrens Hosp-OH
Pediatrics	Nationwide Childrens Hosp-OH
Transitional Year	Naval Medical Center, San Diego
Obstetrics-Gynecology	Northwestern McGaw/NMH/VA-IL
Psychiatry	Ohio State University Med Ctr
Family Medicine	OhioHealth-Grant Med Ctr
Surgery-Preliminary	Prisma Health-U of SC SOM Columbia
Family Medicine	Prisma Health-U of SC SOM Greenville
Internal Medicine	Prisma Health-U of SC SOM Greenville
Medicine-Pediatrics	Prisma Health-U of SC SOM Greenville
Family Medicine	Providence Hospital-AK
Emergency Medicine	San Antonio Military Medical Center
Orthopaedic Surgery	San Antonio Military Medical Center
Pediatrics-Medical Genetics	St Louis Childrens Hosp-MO
Surgery-Preliminary	St Louis Univ SOM-MO
Internal Medicine	Temple Univ Hosp-PA
Emergency Medicine	Texas Tech U Affil-El Paso
General Surgery	U Alabama Med Ctr-Birmingham
Medicine-Pediatrics	U Alabama Med Ctr-Birmingham
Anesthesiology	U Cincinnati Med Ctr-OH
Internal Medicine	U Cincinnati Med Ctr-OH
Internal Medicine	U Cincinnati Med Ctr-OH
Internal Medicine	U Cincinnati Med Ctr-OH
Neurology	U Cincinnati Med Ctr-OH
Neurology	U Cincinnati Med Ctr-OH
General Surgery	U Florida COM-Shands Hosp
Internal Medicine	U Florida COM-Shands Hosp
Phys Medicine & Rehab	U Florida COM-Shands Hosp
Medicine-Psychiatry	U Iowa Hosps and Clinics
Phys Medicine & Rehab	U Miami/Jackson Health System-FL
Anesthesiology	U Michigan Hosps-Ann Arbor
Obstetrics-Gynecology	U Michigan Hosps-Ann Arbor
Otolaryngology	U Michigan Hosps-Ann Arbor
Ophthalmology	U of Florida, Gainesville
General Surgery	U South Alabama Hospitals
Pediatrics	U Tennessee COM-Chattanooga

Pediatrics	U Tennessee COM-Chattanooga
Anesthesiology	U Tennessee Grad SOM-Knoxville
Obstetrics-Gynecology	U Tennessee Grad SOM-Knoxville
Emergency Medicine	U Texas Med Branch-Galveston
Medicine-Pediatrics	U Texas Med Sch-Houston
Medicine-Pediatrics	U Texas Southwestern Med Sch-Dallas
Plastic Surgery (Integrated)	U Wisconsin Hospital and Clinics
Orthopaedic Surgery	Univ of Vermont Medical Center
Dermatology	University of Mississippi
Obstetrics-Gynecology	UT Ascension St Thomas-TN
Anesthesiology	Vanderbilt Univ Med Ctr-TN
Emergency Medicine	Vanderbilt Univ Med Ctr-TN
Obstetrics-Gynecology	Vanderbilt Univ Med Ctr-TN
Anesthesiology	Virginia Commonwealth U Hlth Sys
Internal Medicine	Wake Forest Baptist Med Ctr-NC
Surgery-Preliminary	Walter Reed
Emergency Medicine	West Virginia University SOM
General Surgery	West Virginia University SOM
Internal Medicine	West Virginia University SOM
Psychiatry	West Virginia University SOM
Neurology	Wright State Univ Boonshoft SOM-OH