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Paul M. Wallach, MD; Deborah R. Birnbaum, MBA; Bradley L. Allen, MD, PhD; Daniel R. Corson-Knowles,
MD; Elizabeth R. Ryan, EdD; Jay L. Hess, MD, PhD, MHSA.

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Abstract

While Indiana University School of Medicine has had multiple regional campuses delivering the pre-clerkship phase of the education for 50 years, since 2008 all 4 years of medical education, including clinical, have also been available at the 8 regional campuses statewide. While 67% of admitted students designate a preference for the Indianapolis main campus, 60% of students are assigned to a regional campus for pre-clerkship education. Of those, 32% chose to be at their assigned campus. Students are often not able to identify a compelling reason to choose a regional campus. Despite data to the contrary, including our own, a majority of students continue to believe the path to success is through the main campus in Indianapolis, and as a result, transfer to the main campus for clerkships.

In 2019, the school launched a Scholarly Concentrations Program as a key strategy to address this problem. The program leverages the unique expertise and resources at its diverse campuses and shines a spotlight on them to attract and retain students at regional campuses through educational enhancement and engaged community scholarship.

While still in pilot phase, significant progress has been realized. With faculty statewide, 11 concentrations launched in less than one year, and 17 in 2 years. About 220 students are enrolled in concentrations statewide; about half at regional campuses. A special program through the admissions process resulted in 9% of the Class of 2024, with an average GPA of 3.8 and 512 MCAT, choosing to enroll at a regional campus and its associated scholarly concentration.

Immediate plans revolve around supporting concentration growth, building systems and processes to support a sustainable program, and monitoring results of the 3 pilot phases to inform future development and implementation. In addition, students are being recruited to regional campuses through an Early Decision Program.

Problem

Indiana University School of Medicine (IUSM) is the nation's largest medical school with 9 campuses statewide. Over the school's 110-year history, the majority of students have spent all 4 years of their medical education in Indianapolis. For 50 years, regional campuses have played a significant role in pre-clerkship student enrollment, and in 2008, all 8 regional

campuses began offering all 4 years of the MD curriculum. During the past 5 years, an average of 173, or 67%, of students who submitted their campus preference upon admission to the school chose the Indianapolis campus as their first choice. Sixty percent of students are assigned to a regional campus for pre-clerkship education. Of those, 32% chose to be at their assigned campus.

Paul M. Wallach, MD, Professor of Medicine, Dolores and John Read Senior Professorship in Medical Education. Executive Associate Dean, Medical Education and Institutional Improvement, Indiana University School of Medicine. ORCID: <https://orcid.org/0000-0002-7444-5374>

Deborah R. Birnbaum, MBA, Scholarly Concentrations Program Manager, Project Manager for Executive Associate Dean, Medical Education and Institutional Improvement, Indiana University School of Medicine. ORCID: <https://orcid.org/0000-0002-4344-6630>

Bradley L. Allen, MD, PhD, Senior Associate Dean for Medical Student Education, Associate Professor of Clinical Medicine, Indiana University School of Medicine. ORCID: <https://orcid.org/0000-0002-8846-9342>

Daniel R. Corson-Knowles, MD, Director of Clinical Distinctions, Phase 3 Curriculum, Assistant Professor of Clinical Emergency Medicine, Department of Emergency Medicine, Indiana University School of Medicine. ORCID: <https://orcid.org/0000-0002-0036-5486>

Elizabeth R. Ryan, EdD, Associate Dean and Director, IUSM-Northwest-Gary, Professor of Clinical Family Medicine, Department of Family Medicine, Indiana University School of Medicine. ORCID: <https://orcid.org/0000-0001-8680-3741>

Jay L. Hess, MD, PhD, MHSA, Dean, School of Medicine, Walter J. Daly Professor, Professor of Pathology & Laboratory Medicine, Professor of Medicine, Indiana University School of Medicine. ORCID: <https://orcid.org/0000-0002-5968-4326>
Corresponding author: Deborah R. Birnbaum debbirnb@iu.edu 340 W. 10th St., Indianapolis, IN 46202 (317) 278-3044



Despite achieving comparably excellent student outcomes across all 9 campuses, many students and some faculty believe that a “main campus” experience in Indianapolis is necessary for a high-quality education and to be competitive in the residency match. Two-thirds of students initially assigned to a regional campus choose to move to the main campus for clerkship education. In addition, the majority of research opportunities exist at the main campus. In the School’s Student Satisfaction surveys, students report regional campuses lack the resources and training opportunities for MD candidates, and they must be in Indianapolis to gain experience and cultivate relationships with clinical department chairs and others to secure residencies. However, regional campus student concerns about not placing into competitive residencies are not supported by IUSM’s Match data. According to School Match data from 2011 to 2018, regional campus students match into highly competitive residencies at the same rate as students from the main campus.

With a few exceptions, regional campuses have not provided students a compelling reason to choose their campus. One campus that has been successful in recruitment offers a rural health track, and 3 campuses are co-located with Division I universities offering resources and social amenities students desire. All regional campuses see significant decreases in enrollment during the clinical years as shown in Figure 1.

Figure 1: Medical student enrollment by campus and class year

Campus Enrollment, Academic Year 2019-2020		
Regional Campus	Enrollment (per year) Years 1-2	Enrollment Year 3
Bloomington	35	8
Evansville	29	8
Fort Wayne	32	14
Muncie	25	3
Northwest/Gary	32	8
South Bend	31	16
Terre Haute	25	13
West Lafayette	25	5

Previous literature around Regional Medical Campuses has focused on increasing the number of physicians in underserved areas¹ and most of the literature related to Scholarly Concentrations focuses on increasing student scholarship.²⁻⁴ We believe our program is unique in using Scholarly Concentrations as a viable way to increase student recruitment and satisfaction with medical education at regional medical campuses. We were unable to find any Regional Medical Campus or Scholarly Concentrations literature regarding the use of Scholarly Concentrations Programs to recruit students to regional campuses. The exception is rural track programs, which seek to recruit students to rural areas in order to increase the physician

workforce in those areas.^{5,6} In this article, we will describe our novel experience using a Scholarly Concentrations program to recruit and retain medical students at regional medical campuses.

Approach

These challenges of the regional medical campus model provide several opportunities for IUSM and for other schools with a geographically dispersed model. IUSM sees scholarly concentrations as a key component of a strategy to attract and retain students at regional campuses through educational enhancement, create a reputational focus and sustain enrollment growth at the regional campuses, increase student-faculty interactions and sense of community, increase satisfaction, and create new opportunities for faculty research, educational scholarship, and potentially philanthropy.

The development of a Scholarly Concentrations Program in IUSM’s multi-campus regional model required a careful needs assessment, dedicated resources, and a clear vision. The needs assessment highlighted the challenges and opportunities facing the school:

- 1) To articulate areas of excellence for each campus, while supporting student research and collaboration.
- 2) Resources were built on the strength of faculty and students with the support of an experienced project manager and dedicated faculty to lead the project along a carefully designed implementation plan.
- 3) A clear and consistent vision of the future of the program allowed rapid recruitment of program co-directors, project mentors, faculty and students.

Scholarly concentrations have become increasingly common in U.S. medical schools in the last decade (2007 to 2019). Seventy-four percent of the U.S. medical schools that U.S. News & World Report rank as top 25 for research or primary care (n=43 institutions) offer some form of a scholarly concentration program.⁷ Some are required and part of their core medical education curriculum; others are optional and exist alongside the core medical education curriculum.^{3,7} All encourage students to study a topic of interest, develop additional expertise and engage in scholarly work.

The IUSM Scholarly Concentrations Program (SCP) leverages the unique expertise and resources at its diverse campuses and shines a spotlight on them (see Figure 2).

Figure 2: IU School of Medicine Scholarly Concentration themes are based on local expertise, strengths, interests, and needs. Most concentrations (red) have partnered with a local organization or institution (black).



Prior to launch in 2019, Scholarly Concentration themes, locations, and partners were carefully chosen in conjunction with regional campus leaders based on their local expertise, strengths, interests, and needs of both the school and their communities. We excluded fields that are the focus of a clerkship or residency and excluded topics that are well covered in the core medical education curriculum. Concentrations are intended to be topics of broad interest that appeal to students to augment the medical curriculum and enhance their education. For example, the Northwest-Gary campus, located in a diverse urban area with a history of deep community connections was a natural choice for Urban Medicine and Health Care Disparities. Ethics, Equity, and Justice was the choice at the South Bend campus due to connections with scholars of ethics at the University of Notre Dame and expertise of IUSM faculty. IUSM expanded partnerships with Purdue University’s Weldon School of Biomedical Engineering, the Indiana University Kelley School of Business, and Fairbanks School of Public Health to develop concentrations. Dual degrees in Public Health and Business are already offered, and the scholarly concentrations provide students with additional opportunities along a continuum of learning. A new partnership with the world-renowned Kinsey Institute on the Bloomington campus led to a concentration in Human Sexuality and Health. The initial round of While the initial round of concentrations was proactively determined by program and campus leadership, as word of the program spread, in 2020, additional concentrations were proposed by faculty.

The SCP is a longitudinal extracurricular program designed to enhance the experiences of students through a parallel curriculum delivered through their 4 years of study at one campus, without incurring additional time or tuition. Participation is optional. Students complete topic-specific coursework, engage in scholarly pursuits, and benefit from mentorship to become better prepared leaders in their chosen field of interest. The scholarly project provides a focus for community-engaged scholarship. Students make use of the summer between the first and second years of medical school, elective time, and other less busy times. Students

earn 2 non-clinical elective credits for completing the program, which provides 2 months during their fourth year to complete their concentration work. Each concentration has a recommended pathway for students to integrate the Scholarly Concentration into their schedule (See example in Figure 3).

Figure 3: Recommended Pathway for Quality and Innovation in Health Care

Phase 1 Year 1	Summer 1	Phase 1 Year 2	Phase 2	Phase 3
	Introduction to Healthcare Innovation and Implementation			
	Lean Six Sigma for Healthcare Professionals			
		Fundamentals of Research and Scholarship *		
	Begin Scholarly Concentration Project	→		
			Scholarly Concentration Product	→

*Available mid-December to mid-February

Though still early in its 3-phase pilot, significant progress has been achieved. The idea of scholarly concentrations was introduced in the spring of 2018. Meetings with regional campus deans, and the school’s Curriculum Council Steering Committee in July, set a trajectory to develop concentrations and launch a pilot in less than one year. During this time, campus deans and faculty members identified areas of expertise. Faculty were recruited as co-directors to develop concentrations and to teach and mentor student scholarly work. A project manager directed program development and recruitment of the first cohort of current students. The pilot was launched in May 2019 with 11 concentrations representing all 9 campuses. Six additional concentrations were subsequently approved to start in 2020 or 2021, expanding the program to 17 concentrations.

To launch a pilot Scholarly Concentrations Program expeditiously required strong leadership from the educational deans and faculty-led Curriculum Council Steering Committee, as well as the dedication of faculty and staff statewide.

Role	Responsibilities
Executive Associate Dean	Vision and leadership; review and approve topics; develop partnerships
Curriculum Council Steering Committee	Curricular leadership; review and approval of proposals
Scholarly Concentrations Program Ad-Hoc Committee	Initial review and recommendation for approval to Steering Committee
Project Manager/Program Manager	Program and systems development, implementation, ongoing direction
Scholarly Concentration Program Faculty Lead	Curricular review; evaluation, and assessment
Associate Dean and Director of Regional Campuses	Champion of campus expertise/topic, overall success of SCP on campus
Scholarly Concentration Co-Directors	Development of <u>concentration</u> , curriculum, scholarly projects. Student success
Scholarly Concentration Project Mentors	Guide students through scholarly project, manuscript, poster
Course Directors	Development of <u>course</u> syllabus, course content, assessment
Liaison Librarians	Provide support to scholarly concentrations students and educators through library resources and services

Creating a Sustainable System

With approximately 1 420 students in the MD program, creating operational processes, systems, policies, and practices is an imperative. The program is led by a small team composed of a program manager, a faculty lead, and a program coordinator. Each concentration is led by co-directors. The program team convenes a “co-director community” monthly to guide the program’s development and operations. Early in development of the SCP, a group of key personnel began to develop operations to support the launch and subsequently create systems to sustain the program. The group is composed of personnel from curricular operations, educational technology, information technology, Registrar’s office, evaluation and assessment, concentration co-directors, and other creative stakeholders. Mentors, librarians, an Institutional Review Board representative, and

other colleagues involved in scholarship and research are key collaborators. A variety of technology supports the pilot phase. A “Plan – Do – Check – Act” improvement cycle is used to evaluate operations and make adjustments.

Each concentration is typically composed of 2 or 3 topic-specific courses and scholarly work. The Fundamentals of Research and Scholarship course, developed by IUSM’s research department, is core to all concentrations. Students complete a scholarly project leading to a manuscript submission or other appropriate product, and present at IUSM Education Day. Students completing the program’s requirements earn 2 non-clinical elective credits toward graduation and a Scholarly Concentrations designation.

Scholarly Concentrations and Campus Recruitment

For the initial pilot, the SCP was promoted to all currently enrolled IUSM students, regardless of year of study. A robust marketing and communications campaign launched with an announcement from IUSM’s dean. A robust web site and *MD Student News* provided concentration details and reminders. A launch event was hosted via online video conference (Zoom) with students gathered at campus locations. The Executive Associate Dean of Medical Education and Institutional Improvement served as Emcee and chief messenger. During the February 2019 application cycle, 139 students, primarily first-years, applied via online application. One-hundred twenty-three began in 11 concentrations in the initial pilot phase; 103 (84%) remain. In phase two, 121 students applied during Fall 2019 recruitment, and 97 enrolled. Currently, 92 (89%) remain enrolled.

Recruiting Prospective Students

Even though the inaugural recruitment was occurring well into the admissions cycle, the school emailed students admitted to the Class of 2023 informing them about this new program and inviting them to preference a regional campus with a concentration of interest.

Following the recruitment of current students, phase 3 began with the implementation of the Scholarly Concentrations Priority Placement Program to promote concentrations and regional campuses to applicants for the Class of 2024. The main campus was not included in this program. Available by invitation, the priority placement program provided admission notification earlier in the cycle in exchange for a non-binding commitment to spend 4 years on a regional campus studying and living in the community where students can enjoy deep experiences in the area of a scholarly concentration. The program received more than 600 applications; nearly 140 applicants were interviewed. Priority Placement interviews were combined with IUSM’s applicant interviews to give applicants the opportunity to visit their preferred campus and meet campus leaders. Questions about

interest and goals for participating in a scholarly concentration were added to the Admissions interview rubric. While application required a minimum GPA of 3.5 and an MCAT of 507 (Science and Overall), the applicant pool had a GPA average of 3.8 and MCAT of 513.

Outcomes

The Scholarly Concentrations Program is still new, and current outcomes are as follows:

- Seventeen concentrations developed in 2 years; all are part of the multi-phase, multi-year implementation.
 - Ten were developed to promote specific regional campuses.
 - Three concentrations proposed by faculty as a result of the program have been implemented.
 - Four concentrations are “statewide” to provide an array of options for medical students at every campus.
- Strong current and prospective student interest:
 - 123 students enrolled in the inaugural cohort and 103 (84%) remain enrolled; 97 enrolled in the second student cohort and 92 (89%) remain enrolled.
 - The Priority Placement Program dramatically increased the number of students enrolled in the Scholarly Concentrations Program at regional campuses. The invitation-only Priority Placement Program resulted in nearly 140 interviews. Sixty-seven prospective students were offered admission to a scholarly concentration on a regional campus for the Class of 2024. Thirty-four matriculated, with an average GPA of 3.8 and 512 MCAT. This results in 9% of the class choosing a regional campus and its scholarly concentration.
 - The following Figure 4 shows the number of students enrolled in regional campus concentrations based on recruitment campaigns conducted in Winter 2019, Fall 2019 and the results of the Priority Placement Program, as well as students accepted during the Fall 2020 recruitment cycle. These students will enroll in Spring 2021.

Figure 4: Student Enrollment and Acceptances in Regional Campus Scholarly Concentrations by Graduating Class as of Dec. 1, 2020.

Campus	Scholarly Concentration	Launch	Class of 2022	Class of 2023	Class of 2024		Enrollment Approximate Totals
					Priority Placement	Fall 2020 Acceptances*	
Bloomington	Human Sexuality and Health	2020	0	5	4	1	10
	Medical Education**	2021	0	0	N/A	2	2
Evansville	Quality and Innovation in Health Care	2019	6	7	4	6	23
Fort Wayne	Health Integration and Healthy Aging	2019	2	4	5	1	12
Muncie	Health Promotion and Disease Prevention	2019	3	3	4	3	13
Northwest-Gary	Urban Medicine and Health Care Disparities	2019	10	5	4	1	20
South Bend	Ethics, Equity and Justice	2019	7	2	6	3	18
Terre Haute	Rural Health	2019	7	4	3	10	24
West Lafayette	Care of Hispanic/Latino Patients	2019	3	5	2	4	14
	Biomedical Engineering and Applied Medical Technology	2020	5	2	2	7	16
TOTALS			43	37	34	38	152

*Students accepted into Scholarly Concentrations Fall 2020; will be enrolled Spring 2021

**Not available at time of Priority Placement recruitment

- As a part of an Assessment plan, end-of-course evaluations are completed for each course and results shared with course directors and Scholarly Concentration co-directors. A report is delivered annually to the Curriculum Council Steering Committee, IUSM’s curricular governing body. Evaluations for the inaugural 15 completed courses yielded at 48% response rate and 3.4 rating for overall quality on a 4-point Likert scale with 4 being Excellent. Other questions asked about clarity of learning objectives, effectiveness of teaching modalities, and average number of hours per week.

Assessment Plan

Like many other scholarly concentration programs, goals, and key outcomes include: a longitudinal educational experience; increasing student participation in scholarly work and submission of publications, as well as providing a credential to strengthen residency applications. Goals unique to IUSM are:

- increasing student enrollment preference for regional campuses;
- increasing 4-year regional student enrollment, with a target that third year enrollment is 50% of first year enrollment; and
- increasing student satisfaction by campus.

In addition to end of course evaluations, data used to monitor program development include surveys from students who withdraw from the program and periodic progress reports that are being implemented. Data used to track progress toward goals will include enrollment data, the School's Student Satisfaction Survey, Match data, AAMC Graduation Questionnaire, student publication rate, and focus groups. IUSM will monitor implementation of the pilot and eventually all phases of its training program. Where data can be stratified, comparisons will be made between SCP students, attrition students and non-SCP students based on common national and local benchmarks of academic success. Where these data cannot be stratified by regional campus or SCP participation, (e.g. GQ), trends will be monitored over time. Scholarly output will be cataloged and shared within the school community. IUSM Education Day will provide a focal point to celebrate student successes. The Scholarly Concentrations Program is committed to continuous quality improvement. A couple of courses have made adjustments based on feedback, and the program continues to experiment with its application process and marketing. Best practices will continue to be shared to improve effectiveness.

Next Steps

Incredible support and interest from faculty, students, and partner institutions has allowed this pilot to grow rapidly. Immediate plans involve supporting concentration growth, building systems, and monitoring results of the 3 pilot phases to inform future development and implementation.

During the 2020 recruitment cycle, prospective students for the Class of 2025 were able to apply through an Early Decision Program to a regional campus; Scholarly Concentrations were promoted as a part of this effort. We are evaluating recruitment strategies. In addition, scholarly concentration-based research is being promoted at the campuses through focused faculty recruitment and student engagement. Previously, faculty were largely recruited based on basic science and clinical expertise. In partnership with the Indiana Clinical and Translational Sciences Institute, a recruitment committee including regional campus and SCP representatives was established to recruit faculty with concentration-specific expertise to regional campuses in order to further enhance opportunities for student scholarly work. Students are engaged through topic-specific coursework; individualized scholarly projects, many of which are based in their communities; and by being part of a group of colleagues sharing a common interest in a Scholarly Concentration topic where they live, work and study.

Our experience suggests that other institutions would benefit from the needs assessment described in Approach and other

strategies described in this paper when seeking to implement a multi-campus Scholarly Concentrations Program.

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