

**Department of Epidemiology and Environmental Health
Self-Study Report.**

April 16, 2023.

Submitted to:

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April 16, 2023

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Department of Epidemiology and Environmental Health Self Study Report – 2023.

Version for External Distribution --- April 16, 2023.

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Executive Summary.

Numerous studies and commentators have documented the many changes to higher education since the onslaught of the COVID pandemic. While faculty needed to quickly pivot to offer online courses and endeavor to continue research programs as best they could under constrained conditions, the educational and research environments were forever changed as faculty and staff adopted remote and hybrid work models and students had new interests in the types of careers they desired and requirements from their educational programs. The Department of Epidemiology and Environmental Health (DEEH) in the College of Public Health has spent the last eight months in conversation about its academic programs, research agenda, service obligations, and future plans. A self-study is both a reflection of past and current data as well as an opportunity to plan for the future. It has also been instructional (and often eye opening) to find what data are and are not collected in a College with a data science focus. Our approach to review the data and create space for engaged conversation has been an opportunity to take stock of both what we have done well as a faculty and staff team in addition to what we need to revise and adjust for the future.

As with all “group efforts”, the current document shares some of the warts of collective contribution as well as a not fully refined presentation on the issues and challenges confronting our department. (Dr. Tucker may also suggest that our titles, labels, and footnoting could be improved and we will give further thought to this issue if the document becomes read by more than a dozen people.) Academic program and student issues often dominate discussions at faculty meetings, as many of our research concerns are often pursued within existing Centers or individually. Compared to many benchmark institutions, we are a small faculty and an even smaller staff, especially for the breadth of academic programs which are offered. About half of our faculty teach across three or more academic programs from undergraduate, masters level, and doctoral.

It is probably a common attribute of most departmental self-studies in academia that we are “overworked and stretched beyond capacity” and are “under-resourced and lacking funding in educational programs” yet still have a “solid funding base of grant support” and are teaching to relatively small class sizes. Faculty are well aware of the incentives in academia and how to focus their efforts for personal and departmental success; the paradoxes and pressure are well known and quickly learned. However, many of us would affirm that the DEEH shares a commitment to each other as faculty and staff and a passion for the work that we do. While we have had our share of faculty departures and often share the common misery of a “built environment” on Washington avenue which was scheduled for demolition decades ago and is not fully ADA compliant, we do have many faculty who have found their home and life work within the organization and celebrate the small daily “wins” or commiserate lost opportunities.

As this document highlights, current areas for growth in the DEEH include developing plans for the academic programs which balance faculty resources and interests with the real constraints of financial support and incentives for these programs. Despite the passion and commitment that many faculty hold for programs such as the MPH-EH and the PhD program in epidemiology and biostatistics (and past successes in both of these programs), it is important to take stock of whether we should maintain, close, or grow these endeavors in the current climate. Administrators need to inform faculty on the budgetary constraints and available support for these programs and faculty, who are responsible for program quality and integrity, need to critically assess whether the competencies are being achieved and standards met with the available resources. The data in this report, as well as the opinion of the majority of our faculty, indicate that we “feel the strain” as we have too many academic programs, yet most enroll relatively few graduate students. It is worth noting that teaching classes to 8-12 students is perhaps 80% of the work of teaching to a large class; the key difference being grading time and addressing student concerns and advising. Considering the “business” aspects of higher education has long been considered repugnant to many academic scholars; however, it is fully necessary in an era of various financial models which reward the programs and colleges which are perceived as meeting the

needs of the workforce and interests of Boards of Trustees. New efforts such as the MS in Epidemiology and expansion of the BPH program and the associated 4+1 program, particularly regarding enrolled student numbers will need to be carefully considered.

In his book *Good to Great*, Jim Collins suggested that although most organizations including academic institutions often begin by setting “a new direction, a new vision and strategy”, the successful organizations “first got the right people on the bus and then figured out where to drive it”. Recruiting faculty candidates who will be personally successful and who will contribute to the mission and program of the institution is perhaps the most critical and important task of a Chair and Dean. In the next several years, the DEEH is likely to see changes in the faculty composition with retirements as well as projected new hires to revised academic programs and new research endeavors and Center projects. Our department (and College) has struggled with the departures of several key faculty and Centers and has been challenged in recruiting for certain key faculty roles, such as for an associate director of the Kentucky Injury Prevention and Research Center. The merger of Preventive Medicine and Environmental Health with Epidemiology and the “name change” associated with the merger has been one step toward creating an architecture for a more competitive academic home for future faculty. Our success in five to ten years will be dependent on the efforts that we put forth now in both attracting talented and creative folks who also are attuned to the unique culture and approach of the University of Kentucky.

To again borrow from the text by Collins and his “hedgehog concept”, the goal should not be to “be the best or develop a strategy to be the best” but rather to develop an understanding of what we can be the best at. This is the intersection of three circles: what you can be the best in the world at, what drives your economic engine, and what you are deeply passionate about. Our Department has access to and contributes to many unique and valuable research Centers, including the Markey Cancer Center (and associated Kentucky Cancer Registry and Cancer Program), The Sanders-Brown Center on Aging, the Kentucky Injury Prevention and Research Center, and the Southeast Center for Agricultural Health and Injury Prevention, among others. Our faculty hires should be fully attuned to becoming members of and contributing to “team science” which is the standard in the field. In this regard, research support services for the faculty can be attuned to the unique approaches used within the various subfield of our discipline.

Finally, we need to continue our conversations about service, continuing education and contribution to the workforce and public health. During the COVID epidemic, we witnessed many of our faculty step outside the defined dimensions of their job titles and designated roles and to engage in leadership and action through contributions to the public dialogue on the constantly evolving science and recommendations regarding COVID, to contributing time and expertise to local and regional surveillance and testing efforts, and engaging and recruiting students to track, monitoring, and test persons throughout this challenging time. Other faculty pivoted on how classes were taught or assisted students on their research projects, which often need to flex and adapt to changing timelines and requirements. It is worth noting that many of these efforts were also occurring while we all struggled with family losses and challenges, disrupted schedules, and supply chains (toilet paper was taken from the College during a time of shortage), home schooling and child care changes, and our own efforts to stay optimistic about the future. In a real sense, the epidemic has helped us all define our priorities on a personal level, hopefully this effort will aid us in defining our work priorities as we move forward.

Background.

The Department of Epidemiology and Environmental Health (DEEH) is one of four current departments in the College of Public Health. DEEH was formed in 2022, when the Department of Epidemiology and the Department of Preventive Medicine and Environmental Health (PMEH) merged. The decision to combine Departments was undertaken largely due to the loss of faculty in PMEH, as well as the decision to close residency programs in occupational health and preventive medicine. Dr. Erin Haynes had jointly chaired both departments since 2019. DEEH currently has 18 faculty. In addition to the Departmental Chair, DEEH also added a Vice-Chair for Education in November 2022. Dr. Anna Hoover is the current Vice Chair.

The DEEH traditionally has educated and advised the largest numbers of students in the College of Public Health. Formerly, the two departments were responsible for two MPH program concentrations (Epidemiology, Environmental Health), two doctoral degree programs (PhD in Epidemiology and Biostatistics, Doctor of Public Health (currently closed to admissions)), and two graduate certificates (Global Health; Maternal and Child Health), as well as contributing to undergraduate education in the Bachelor of Public Health Program.

In addition to substantial teaching responsibility, DEEH faculty generally devote most of their effort to research and have worked diligently to expand the research portfolio of the Department and the Centers to which they belong. Along with substantial PI-funded research, the DEEH is well-established in collaborative research endeavors across the university that far exceed the grant dollars attributed to any individual principal investigator. Most DEEH faculty have extramural funding equivalent to or in excess of their DOE expectation for research (~45% DOE). Consistent with a strong research focus, DEEH faculty have appointments in many of the research centers at the University of Kentucky: Kentucky Injury Prevention and Research Center, Sanders-Brown Center on Aging, Center on Drug and Alcohol Research, the Markey Cancer Center, the Southeast Center for Agricultural Health and Injury Prevention, the UK Center for Appalachian Research in the Environmental Sciences, the Central Appalachian Regional Research and Education Center, and the UK Superfund Research Center.

The DEEH is lean in both staff and administrative support. DEEH currently has one administrative assistant and a new Department Manager (April 2023). In addition to the faculty, the DEEH also has limited administrative oversight for 40 staff and program epidemiologists who work at the Kentucky Cabinet for Health and Family Services through grants and contracts with the University of Kentucky. To a degree, maintaining this workload with minimal administrative support is facilitated by faculty research appointments in Centers at the University; however, faculty without such appointments are challenged in undertaking much of the leg work of grant and research-related tasks on their own, especially until they are positioned to hire staff themselves.

MISSION AND VISION: UK, COLLEGE, AND DEEH.

The University of Kentucky's Strategic Plan has five grand goals: 1) Putting Students First; 2) Taking Care of Our People; 3) Inspiring Ingenuity; 4) Ensuring Greater Trust, Transparency & Accountability; and 5) Bringing Together Many People, One Community. The Department of Epidemiology and Environmental Health seeks to implement this vision through its dedication to excellence in research, teaching, and service. The mission of the Department is to engage with local, regional, state, national, and international partners and seek solutions that improve population health by:

- Training public health champions in the fields of epidemiology and environmental health through excellent undergraduate and graduate degree programs.
- Collaborating with local, regional, state, national, and international partners through engagement in research and technical assistance.

- Advancing the understanding of population distributions, occurrence, and outcomes of diseases and environmental factors that influence health and well-being.

HISTORY OF THE DEPARTMENTS AND RATIONALE FOR THE MERGER

In the late 1990s, the University of Kentucky recruited Dr. Douglas Scutchfield to establish a School of Public Health. In 2000, Dr. Thomas Tucker was recruited from the College of Health Sciences to serve as the Director of the Division of Epidemiology, providing leadership toward developing a School of Public Health and bringing together the faculty for the Division. In 2004, the new College of Public Health became the first new College at the University of Kentucky in more than 20 years. At that time, Dr. Tucker became founding Chair of the Department of Epidemiology and served in that role until January of 2009. Following Dr. Tucker, Dr. Wayne Sanderson served as Department Chair and, in 2018, Dr. Erin Haynes was recruited as Chair of the Department of Epidemiology.

In 2000, the Department of Preventive Medicine and Environmental Health faculty included the residency programs in General Preventive Medicine and Occupational Medicine, which moved from the College of Medicine to the developing School of Public Health and became a division within the emerging school. In 2004, these programs together became the Department of Preventive Medicine and Environmental Health (PMEH) in the newly formed College of Public Health, with Dr. Robert McKnight as founding Chair of PMEH. The General Preventive Medicine Residency moved back to the College of Medicine in 2021 and the Occupational Medicine Residency program was closed in 2022. Dr. David Mannino served as the Chair of PMEH until 2017. Dr. Scott Prince served as Interim Chair from 2017 until 2018, when Dr. Haynes was appointed Interim Chair of Preventive Medicine and Environmental Health. A decline in the number of PMEH faculty over a period of several years necessitated a merger with the Department of Epidemiology. This merger was finalized in 2022, forming the Department of Epidemiology and Environmental Health; Dr. Haynes was appointed Chair of the DEEH.

SELF-STUDY PROCESS

This is the first review of the newly formed Department of Epidemiology and Environmental Health (DEEH). Neither of the two departments prior to merging had undergone review in this manner since the formation of the College of Public Health.

The committee was constituted and charged in August 2022 to begin the process of reviewing DEEH data. The self-study committee comprises both faculty and staff: Erin Abner (Professor), Steve Browning (Committee Chair; Associate Professor), Janie Cambron (Associate Dean for Practice and Workforce Development; Lecturer), Erin Haynes (Department Chair; Professor), Anna Hoover (Vice Chair for Education; Assistant Professor), and Tom Tucker (Professor). Andrea Perkins (Director of Accreditation and Assessment) has served as staff support to the committee and worked diligently in securing data from various university sources to inform the committee in its reporting. In addition to addressing the recommended topics for inclusion in the report, Dr. Haynes charged the self-study committee with focusing on a specific set of questions (Appendix 1).

As part of our review process, the self-study committee undertook a survey of the faculty regarding their participation in and assessment of the undergraduate, masters (MPH), and doctoral PhD programs offered within the Department; this survey was implemented via Qualtrics. The survey was developed by DEEH faculty

members Kucharska-Newton, Browning, Hoover, Lacy, and Abner; Ms. Perkins handled the logistics in developing the survey, administering it, and compiling the results. The time dedicated to this task is much appreciated by the Self-Study Committee. With the support of Assistant Dean of Student Affairs Britt Allen-Wynn and Graduate Coordinator Benji Bryant, the Student Engagement and Success (SEAS) office undertook a focus group interview of MPH students using questions developed by Drs. Browning and Hoover. Finally, we have included results of a 2017 faculty survey focused specifically on the MPH capstone for epidemiology students. The survey was developed by Dr. Browning and staff epidemiologist Susan Westneat; aggregate results are included in Appendix 7. The Self-Study Committee has discussed the process of compiling the report and emerging issues with faculty as part of monthly faculty meetings since September 2022 and has held additional ad-hoc meetings to discuss several specific report topics.

Section 1. Degree Programs and Certificates.

OVERVIEW OF DEGREE PROGRAMS.

Historically, the former departments represented by the new Department of Epidemiology and Environmental Health were college leaders in providing academic and professional programs. Along with the Department of Health Management and Policy, the Department of Epidemiology enrolled the largest numbers of students into its various degree programs, relative to other departments in the CPH. The DEEH currently supports two MPH concentrations (Epidemiology and Environmental Health), as well as the joint PhD degree in Epidemiology and Biostatistics (EPB), while also contributing undergraduate courses and research experiences to the college-wide Bachelor of Public Health degree program. The Department of Epidemiology previously had a robust DrPH in Epidemiology training program, which was directed by Dr. Erin Abner from 2013-2018. The Department of Preventive Medicine and Environmental Health also historically hosted a DrPH program. Both DrPH programs are currently closed to admissions. All students who were enrolled in the DrPH in Epidemiology program completed their degree as of February 2022. The DrPH in Environmental Health program enrollment was suspended in 2010. Oversight of the EPB program has been shared by faculty in DEEH and Biostatistics. Dr. Richard Charnigo (Biostatistics) was the inaugural Director of Graduate Studies (DGS; 2009-2012), and Dr. Browning followed as the PhD program DGS from 2013-2019. Dr. Heather Bush (Biostatistics) served in the DGS role from 2019 to 2022, and Dr. Meredith Duncan (Biostatistics) has served as DGS since July 2022.

In broad numbers, we typically enroll about 15-20 MPH (Epidemiology), 4-6 MPH (Environmental Health), and 2-4 PhD students per year. Currently we have approximately 38 students (1st and 2nd year) in the MPH program, and 20 PhD students at various stages in the completion of their degree. Dr. Ketrell McWhorter (Assistant Professor) is the Director of the Global Health Certificate, which currently has 4 students.

Despite their heavy research efforts, most DEEH faculty provide a substantial time commitment for the educational mission. Tenured and tenure-eligible faculty typically offer one 3-credit hour class per semester (Fall and Spring). DEEH does not tend to offer courses in the Summer. Increasing teaching demands in response to program growth, as well as increased administrative responsibilities and increased research commitments of senior faculty, have fueled consideration of the use of the Special Title series faculty (tenure eligible) hires to fill gaps in teaching. Dr. McWhorter was hired under this title series in 2018, and she now provides instruction in both the undergraduate and masters programs, along with managing the Global Health Certificate. For most educational instruction in the CPH, the allocation of a faculty member's distribution of effort (DOE) is typically 12.5% for an individual course; this often is increased when a course is a new preparation. However, for most of our faculty members, the total DOE allocation for instruction averages 20% or less. Faculty also provide guidance – including chairship and committee memberships - for capstones, dissertations, and other student-driven research projects; this time does not tend to be captured in a standardized and systematic way across DOEs.

In addition to existing programs, our program proposal for the MS in epidemiology (MSEPI) was approved by the University Senate in February 2023; recruitment for students matriculating in Fall 2024 will begin in Fall 2023. Dr. Browning will be the inaugural DGS for the MS degree in epidemiology.

BACHELOR OF PUBLIC HEALTH PROGRAM.

Since 2014, the UK CPH has awarded a Bachelor's degree in Public Health (BPH). The BPH is a foundational, career-focused degree for students who want to enter the public health field. The DEEH faculty currently teach seven courses (excluding CPH 365: Special Topics) in this undergraduate program, and three of these are required for all majors. The major requirements include CPH 310: Disease Detectives, which serves as an introduction to the science of epidemiology; CPH 320: Fundamentals of Environmental Health; and CPH 476G: Global Public Health. These courses have been taught by regular title series faculty (Christian, Prince), special title series faculty (McWhorter), and adjunct faculty (McDowell, Fulk). Furthermore, Drs. McWhorter, Fleming (retired), Hoover, and Young have taught additional elective courses for BPH students in recent years, and Drs. Christian and Fleming have offered CPH 365: special topics courses. Other faculty, including adjuncts and some no longer employed at UK, have previously offered additional CPH 365 courses as electives. Seven DEEH faculty members—Christian, Fleming (retired), Fulk, Hoover, McWhorter, Prince, and Young—have taught at least one undergraduate course within the past five years. Remaining courses have been taught by adjuncts, most notably CPH 310, which Dr. Jaclyn McDowell has taught almost exclusively for the past five years; and CPH 320, which Dr. Reese taught for several semesters before Dr. Fulk took over in Fall 2021.

In addition to these existing courses, the DEEH has plans to add the following electives to the undergraduate course offerings:

- *CPH 4XX: Applied Epidemiology*, Dr. McWhorter, Fall 2023—this course will guide students through a collaborative field epidemiology experience.
- *CPH 3XX: Chronic Disease Epidemiology*, Dr. Christian, Spring 2024—this course will introduce students to fundamental concepts in chronic disease epidemiology.

These new courses are responsive to requests made by recent students in the final BPH capstone course, which includes some opportunities for program feedback by graduating seniors.

Faculty departures from PMEH in the decade prior to departmental consolidation created gaps within DEEH and the college for leading environmental health courses related to risk assessment and industrial hygiene. Faculty recruitment efforts are under way to help fill these gaps with an eye toward fielding new, redesigned, and shared courses that could support future attainment of National Environmental Health, Science and Protection Accreditation Council (NEHSPAC) accreditation at the BPH level. Regarding faculty oversight of the BPH program, Dr. Christian has served on the UK-CPH Undergraduate Committee for several years and continues this service as Chair of this committee since Fall 2022.

Undergraduate course enrollments (and instructors) for each semester, from Spring 2017 to Fall 2022 are given below. The largest undergraduate course is usually CPH 310, which averages about 83 students per semester; this course accounts for approximately 38% (83/217) of the total average semester enrollment for DEEH courses.

Figure 1-1. Undergraduate course enrollments (and instructors) for each semester, from Spring 2017 to Fall 2022.

	SP 17	FA 17	SP 18	FA 18	SP 19	FA 19	SP 20	FA 20	SP 21	FA 21	SP 22	FA 22
CPH 310: Disease Detectives ^a	110 ^b McDow	115 McDow	75 McDow	62 McDow	59 Christia n	76 McDow	79 McDow	112 McDow	111 McDow	64 McDow	64 McDow	76 McDow
CPH 318: Global Cancer Epidemiology					63 Fleming	24 Fleming	18 Fleming		47 Fleming		50 Fleming	
CPH 320: Fundamentals of Env Health ^a	64 Johnson	46 Johnson	50 Johnson	41 Johnson	14 Johnson	52 ^b Johnson	19 Johnson	81 Br-Shelt	40 Fulk	88 ^b Fulk	15 Fulk	48 Fulk
CPH 351: Pop Hlth & Crisis Mgmt	34 Hoover		38 Hoover		36 Hoover		28 Hoover		28 Hoover		38 Hoover	
CPH 365: Spec Topics	34 ^a Sandrsn & Webber	5 Johnson	43 Fleming				5 Johnson	16 Christia n		12 Christia n	37 ^a Obonyo &Br- Shelt	
CPH 410: Epi People Places Politics				34 Young								
CPH 476G: Global Public Health ^a		53 Keck	22 Abdelwd	40 Prince	27 Reese	30 Reese	23 Reese	35 Reese	36 ^b Reese	60* McWho	50 McWho	64 ^b McWho
CPH 561: Insects Affecting Hum & Anim Hlth		6 Johnson						2 ^b Winter		4 ^b McWho		1 McWho
<i>Total Undergraduate Enrollment</i>	242	225	228	177	199	182	172	246	262	228	254	189

A=Major requirements, B= Multiple sections, Gray indicates instructors no longer at DEEH, Bold indicates tenured/tenure-track instructors

Other Undergraduate Programs.

Besides regular coursework, the DEEH is involved with other aspects of undergraduate education and career development. The University Scholars program, known unofficially at UK-CPH as the “4+1” program, is a popular option for qualified top undergraduate students. This program allows undergraduate seniors to begin working on MPH coursework, thus enabling them to finish both BPH and MPH degrees in only five years. The DEEH typically admits 2-4 of these students into the MPH program annually.

The UK-CPH also awards undergraduate students funds for research projects conducted during the spring semester or summer under faculty supervision. In recent years, several faculty members in the DEEH have supervised undergraduate research projects, including Drs. Bunn, Haynes, Hoover, Lacy, McDowell, Tumlin, and Young. In addition, DEEH faculty members have provided advising and mentorship for university-wide undergraduate research initiatives, such as the Gaines Fellowship.

GRADUATE PROGRAM ENROLLMENTS IN EPIDEMIOLOGY AND ENVIRONMENTAL HEALTH.

The academic degree program and certificate program enrollments from 2017-2021 are given in the table below (Table 1-1). The data for the most recent years (2022-2023) are similar. It is apparent that faculty teaching effort is spread across several programs with relatively small enrollments of students in each course. This is challenging since core classes need to be offered regardless of enrollments, and the range of programs require that faculty must be familiar with differing competencies and program requirements like the capstone, integrative learning experience, comprehensive exam (PhD), and qualifying exam.

Enrollments in the MPH Epidemiology degree increased over the most recent years; in Fall 2022, 22 students were admitted into the program. The total enrollments in Table 1-1 reflects both first- and second-year students, with typically 15-18 in each entry cohort, which has been in accord with the number that the MPH committee has been targeting for this concentration. The Global Health Certificate has seen a declining enrollment over time with now only 4 students enrolled in the program. There are many challenges to continuing to support boutique programs, especially related to faculty effort. The MPH in Environmental Health also has had declining enrollments and admits currently about 4 students per year. Additional faculty and expertise are needed to support the MPH in Environmental Health and the Global Health programs.

Table 1-1. Academic Degree and Certificate Program Enrollments for Epidemiology from 2017-2021.

Enrollment Trend							
Qualification Level	Specialization (group)	Specialization Short (gr..)	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
Doctorate-Grad..	Epidemiology and Biostatistics	EPBI-PHD	22	26	29	27	20
Graduate Certificate	Global Health	GLHE-CERTG	9	6	6	2	2
Master's	Epidemiology	MPHPUHNP..	15	17	14	28	33
	Preventative Med. and Environment Health	MPHPUHNP..	8	9	9	12	8

Enrollment in the EPB PhD program has declined over the last several years, due to graduations (typically 2-3 per year) and restricted admissions, which were limited to 2 students per year for 2021 and 2022. The entire cohort of active PhD students is now about 20 students. Discussions are ongoing regarding an optimal size for the cohort of PhD students which preserves sufficient enrollment in courses to make the course offering worthwhile and preserve the important “cohort effect” of providing students with a class of colleagues who will share the experience of doctoral training.

DEGREE COMPLETIONS AND GRADUATION RATES FOR THE GRADUATE PROGRAMS.

The number of degrees conferred is presented below (Table 1-2), with an obvious precipitous drop for all degree programs in 2020, which we attribute to the interruptions to in-person learning and the rapid shift to online. The MPH program has struggled with small but not inconsequential numbers (typically 5-7 students) having all requirements completed but the capstone. Some of these students have left the program without completing their degrees. [Of note, as of March 2023, 4 students who had all but their capstone completed have returned to the CPH and are working toward completion of their degrees.]

Table 1-2. Number of degrees conferred in DEEH programs (2017-2021)

Degree Awarded Qualification	Degree + Short (group)	Academic Year					
		2017	2018	2019	2020	2021	
Graduate Certification	Master's	Epidemiology (MPHPUHNPEPI)	12	10	8	5	10
		Preventative Med. and Environment Health (MPHPUHNPPME)	6	6	6	1	6
	Doct.	Epidemiology and Biostatistics (EPBI-PHD)	6	4	5	1	6
		Global Health (GLHE-CERTG)	6	1		5	2

Data on graduation rates are challenging to obtain in the College; for MPH students, estimates depend on whether the rates are calculated as 2- or 3-year rates. Graduation rates were calculated for the cohort of MPH-EPI students in the 2019 and the 2020 entering cohorts (with expected graduation in 2021 and 2022, respectively). These calculations indicated a one-time, two-year graduation rate of 60% in 2021 and 50% in 2022. These rates are conservative and do not reflect that several students have often finished in the summer following graduation. We estimate that our MPH-EPI graduation rates calculated with inclusion of this extension are closer to 85%.

MASTERS OF PUBLIC HEALTH IN EPIDEMIOLOGY (MPH-EPI).

The Council on Education in Public Health (CEPH)-accredited MPH degree is a two-year generalist degree that is administered by the College, rather than the individual departments. All MPH students are required to take 24 credit hours across the five concentrations (Biostatistics, Epidemiology, Environmental Health, Health Behavior and Society, and Health Management and Policy). In addition, the students take 18 or more hours in their concentration. For Epidemiology concentrators, there are 12 credit hours of required courses (Advanced Epidemiology (CPH712), Infectious Disease Epidemiology (CPH612), Cancer Epidemiology (CPH615) or Chronic Disease Epidemiology (CPH711) and Disease Mapping and Data Visualization (CPH660)) and 6 credit hours of elective courses.

A course in applied statistical programming, typically SAS in BST635, has been strongly recommended for all MPH students. The once-per-year frequency of this course offering, as well as course sequencing, have been a challenge with this aspect of student training as several other courses, and successful completion of the

integrative learning experience (aka “capstone”), rely on students having basic skills in this area. Tables 1-3 and 1-4 provide a list of the core courses for the MPH as well as the required concentration specific courses.

Table 1-3. MPH Core Courses (required credit hours) – 24 to 25 Total Required Credit Hours

• CPH 663 Foundations of Public Health* (1)
• CPH 643 Measuring Health Behavior (3)
• CPH 650 Public Health Systems Administration (3)
• CPH 605 Epidemiology (3)
• CPH 603 Data Analysis (3)
• CPH 621 Understanding & Communicating Environmental Health Risk (3)
• CPH 672 Evidence-based Public Health Planning & Practice (3)
• CPH 609 Public Health Practicum (3)
• CPH 608 Public Health Capstone (3)
*CPH 663 is NOT required for students who have a Bachelor of Public Health degree from a CEPH accredited program.

Table 1-4. Epidemiology Concentration Courses– 18 Required Credit Hours

• CPH 712 Advanced Epidemiology (3)
• CPH 660 Disease Mapping & Data Visualization (3)
• CPH 612 Infectious Disease Epidemiology (3)
• CPH 615 Cancer Epidemiology (3) or CPH 711 Chronic Disease Epidemiology (3)
• Electives (6 credit hours) – See footnote below.

BIO 582 Virology
 BST 600 Introduction to Biostatistical Methods BST 635 Database and SAS Programming
 CE 555 Microbial Aspects of Environmental Engineering CPH 561 Insects Affecting Human and Animal Health CPH 612 Infectious/Emerging Disease
 CPH 614 Managerial Epidemiology
 CPH 617 Occupational & Environmental Epidemiology CPH 645 Food Systems, Malnutrition & Public Health CPH 648 Eliminating Health Disparities
 CPH 660 Disease Mapping and Data Visualization CPH 712 Advanced Epidemiology
 CPH 716 Proseminar in Occupational Health & Safety (ERC students ONLY)
 CPH 728 Special Topics in Occ/Env Health
 CPH 729 Independent Study in Occ & Env Health
 CPH 740 Introduction to Maternal Health
 CPH 758 Special Topics HMP: Health Policy & Law
 CPH 776 Intro to Global Public Health
 CPH 778 Deans' Interprofessional Honors Colloquium
 KHP 615 Biomechanics
 PM 661 Occupational and Environmental Sampling
 RM 545 Radiation Hazards and Protection
 TOX 509 Biochemical and Environmental Toxicology
 TOX 680 Molecular Mechanisms in Toxicology

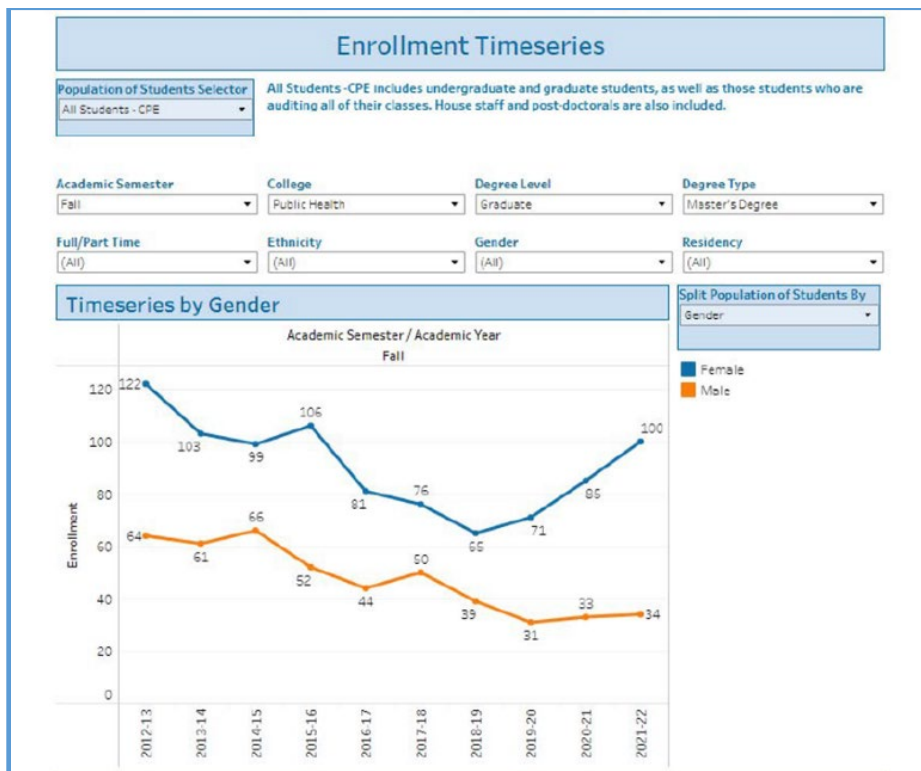
There are specific concentration competencies for epidemiology in addition to the overall CEPH-required MPH competencies for the degree program, most of which are covered in the core courses. As part of the degree requirements students must complete an integrated learning experience (ILE), which has traditionally been a capstone project. In order to facilitate this important learning experience, we have a capstone course (Public Health Capstone CPH 608), which currently is being offered in a two-semester format to help guide the students regarding the process, format, and content and to keep them on track for a spring graduation. A 3-credit hour practicum experience is also a component of the degree, and details are provided in the student handbook for the MPH (<https://cph.uky.edu/programs/master-public-health>).

Overall advising and guidance for the MPH degree is provided to students from the DGS for the MPH (currently Dr. Richard Ingram from the Department of Health Management and Policy) and the SEAS program staff in the College. Until 2015, the Department of Epidemiology had a faculty member who was specifically assigned to oversee the progress of the MPH students in the program. This individual was involved in the admissions process and updated faculty on the status of incoming students, as well as providing tracking of current students regarding course progress, guidance on capstone processes, student awards, job placement, alumni contact, and applications for graduation.

Student Enrollment for the MPH.

Our MPH-EPI cohort is predominantly female (63% in 2021) and fulltime status (68% in 2021). The trend of a 2:1 (female: male) or greater enrollment of females follows the overall sex distribution in the the College's MPH program. The enrollment data from 2013-2022 for the MPH program overall (all concentrations) for the College of Public Health is given in **Figure 1-2**. Enrollment of male students has been strongly declining since 2018 and enrollment of female students into the MPH degree have shown a sharp increase since 2019. Our College does not have an easily accessible database for examining the enrollments, such as those in Figure 1-2, by the concentrations within the MPH degree.

Figure 1-2. MPH enrollment by sex for the College of Public Health from 2013-2019.



For the 3 years 2019-2021, our cohort of students has been 85% white and 8% black among MPH students. A majority of our students have been domestic and particularly local/regional. There have been huge challenges in recruiting international students, especially in the years 2020-2022.

A note on class diversity and recruitment. It has long been a challenge to recruit into our programs an MPH class which is diverse by race/ethnicity. Among the many reasons for this challenge, perhaps the most salient relates to the overall diversity of our state. The data tables z-1 and z-2 below provide a description of the offers which are made by the admissions committee for the MPH in epidemiology for 2020 and 2021 and the proportion of students accepting those admissions offers. Overall, these data show that we have an acceptance rate that ranged from 33%-59%. There has been a concerted effort to make more admissions offers in the last several years in order to meet a target for the MPH class. We made 22 offers in 2020 and 33 offers in 2021 to recruit 13 and 11 students, respectively. These data do indicate that we may need to make

25-30 offers each year to recruit the target numbers that we hope for our MPH-EPI cohort. Certainly, increased effort to recruit a diverse group of qualified students is needed.

Table 1-5. Fall 2020 Admissions for the MPH in Epidemiology by Race

Race	Offer (N)	Offer (%)	Accepted (N)	Accepted (%)	Admission rate
White	11	50%	6	46%	55%
Black	1	5%	1	8%	100%
Asian	8	36%	4	31%	50%
Other	2	9%	2	15%	100%
Total	22	100%	13	100%	59%

Table 1-6. Fall 2021 Admissions for the MPH in Epidemiology by Race

Race	Offer (N)	Offer (%)	Accepted (N)	Accepted (%)	Admission rate
White	19	59%	9	82%	47%
Black	4	13%	1	9%	25%
Asian	6	19%	1	9%	17%
Other	3	9%	0	0%	0%
Total	32	100%	11	100%	33%

MPH Capstone

One of the most debated (by faculty) and continually challenging issues (for faculty) for the MPH degree program has been the capstone experience. The central issue is how much faculty time is appropriate to devote to individual student capstones, as this time is not generally reflected in the DOE for teaching. Developing the capstone course (CPH608) has been the Department’s response to providing a mechanism to guide students through the process and address general writing and research project management skills. This class typically has 10-15 students each semester. For each student, a faculty chair (plus two additional faculty committee members) is designated to help the individual student find an appropriate project. For most students, this project is a secondary data analysis of either a national, state or regional dataset, or research data provided by a faculty member. Historically, within the Department of Epidemiology, the capstone has closely resembled a Master’s research thesis, with the work including traditional epidemiologic analysis including descriptive statistics (“the classic Table 1”), bivariate analysis, and statistical modeling. We place heavy emphasis on the interpretation of epidemiologic data. Several faculty believe that this type of integrated experience—with emphasis on strong research design, applied analysis, and scientific writing—best prepares epidemiologists for the public health workforce. In addition, a formal oral defense is required for the capstone project before the three-member faculty committee in a public forum.

Overall, the Department tries through the capstone class and through individual faculty members’ decisions, to allocate the individual students to faculty members somewhat evenly across the faculty members of record in the program. Tenured faculty members typically take 2-4 students each year as a Chair, while tenure-eligible faculty have 1-2 students and are supported by more senior faculty. In addition, since the program requires three-member committees, faculty often serve as committee members on an additional 2-4 committees. Currently, there are ___ faculty listed for the MPH (Epidemiology). Rough calculations suggest an average

faculty to student ratio for the capstones of 1:2; individual situations vary with some faculty chairing 4-6 capstones per year. This can be a heavy lift for faculty members in the Spring and is challenging just in terms of scheduling individual defenses. Several options have been proposed for the capstone process including: 1) reducing the number of committee members; 2) adjusting the expectations of the capstone to more closely resemble the CEPH requirements of the ILE; and 3) holding a single day or two for open all capstone defenses in a given semester. The MPH capstone differs by concentration within the College and several departments, particularly HBS, have substantially changed their process and format for the capstone since changes to the CEPH requirements in 2019. Currently, the chair faculty member of an individual student capstone has perhaps the most influence in guiding the process and expectations.

In recognition of the misalignment between the learning outcomes for the MPH and the needs of the epidemiology workforce, we have proposed the MSEPI, which will retain the thesis and prepare students with strong quantitative and research skills. We have not yet decided how to address the issue of numbers enrolled into the educational programs.

MPH Practicum.

Janie Cambron, Associate Dean of Workforce and Service, currently coordinates the practicum experiences of our students in the MPH program in coordination with the SEAS office. Most of our practicum opportunities lie within governmental public health, predominately the Kentucky Department for Public Health. We need to expand offerings beyond this sector to include better representation for our department. Many students are interested in epidemiology due to the recent pandemic, and many schools are experiencing a surge in admissions applications and a renewed interest in public health programs. We need to showcase more than just infectious disease epidemiology, however, and ensure that students see the full range of epidemiology programs and opportunities. Recently, students graduating and walking into public health epi jobs during the pandemic may experience a false sense of reality with elevated salaries and availability of jobs. Pandemic funding allowed for higher salaries and an abundance of job opportunities, like contact tracing; however, these may not be sustainable long term and also may negatively affect morale of current employees that have been in the field for longer periods of time.

If we desire to increase the type and number of practicum opportunities, an area of opportunity would be to improve the process for educational affiliation agreements, which can be timely and difficult to execute. We have a unique opportunity to showcase potential careers within non-profits and non-governmental agencies, international affiliations, as well as leverage our existing partnerships across other UK colleges, such as Ag/Extension, Engineering/Nursing and more. There is overlap in some of our programming and thus, we could do practicums related to water quality, 4H, extension outreach, air quality, built environment, transportation, social determinants and many other areas of crossover with other colleges.

MPH Applied Statistical Programming.

As noted above, one of the ongoing challenges with the MPH degree program has been providing the students with training in using statistical software for applied analysis. Several approaches are being taken in the current curriculum including: 1) providing instruction in various core and elective classes and through homework assignments; 2) recommending the BST635 course on SAS programming; 3) offering a SAS workshop as a "jump start" to programming basics; and 4) requiring some level of statistical programming as a component of the capstone project. In addition, we have several courses that offer more specialized exposure to software for GIS analyses and data visualization.

Beyond course offerings, one of the ongoing challenges faced by our faculty is the broad array of computing software and platforms available including SAS, R, Stata, SPSS, Excel, and others. Several of our faculty prefer SAS and have used it extensively in courses such as Advanced Epidemiology (CPH712) and Cancer Epidemiology (CPH615). Core courses in Biostatistics, such as Applied Data Analysis, are now using R software. As there is no overall recommendation within the Department or College, decisions regarding software are left to the individual faculty member. There are good arguments for using any of these types of statistical software—especially that R is public domain and is free, although R cannot be used for CDC or FDA projects. SAS and SPSS are no cost to students at the university, but SAS especially may be too expensive for use at health departments. Our faculty have varying levels of familiarity and skills in using these software programs; some faculty are highly adept at many types of programs and others have limited experience. An underlying issue is that within the larger domain of the CEPH requirements for the MPH, there is not an emphasis on this statistical software or programming; though broadly considered, any epidemiology degree necessitates basic skills in this domain.

Assessment of the MPH-EPI Curriculum.

The core curriculum for the MPH degree is assessed using several approaches including student evaluations (Teacher and Course Evaluations; TCEs) and reviews of the curriculum by the faculty for each of the core classes as implemented through the MPH Committee as part of the required ongoing assessment activities. The data below from the period Spring 2020–Spring 2022 (**Table 1-7**) capture a unique time during the pandemic when all of our classes needed to pivot to online modalities using Zoom and Canvas. For many of the courses, which had been traditionally taught in-person, this was a large lift and a huge commitment of the faculty to keep the curriculum and academic programs moving forward. Overall, the TCE data indicate that the core MPH classes for the “quality of the course” and “the quality of the teaching” do not indicate any strong weaknesses. In general, each of these classes are typically taught by either the same instructor or a small number of instructors with experience in the course. Often the class is a “signature” class for the instructor and their continuity in teaching the course assures a standard as well as incremental improvements to the course over time.

Table 1-7. TCE data for MPH core classes from Spring 2020-Spring 2022.

EPI Core Courses	Spring 2020		Fall 2020		Spring 2021		Fall 2021		Spring 2022	
	Quality of Course	Quality of Teaching	Quality of Course	Quality of Teaching	Quality of Course	Quality of Teaching	Quality of Course	Quality of Teaching	Quality of Course	Quality of Teaching
CPH 605 (Intro)			4.34	4.57			4.1	4.4		
CPH 612 (Infectious)	4.4	4.4			4.3	4.7			4.4	4.4
CPH 615 (Cancer)			3.5	3.5			3.9	4.00		
CPH 660 (Disease Mapping)	4	4.2			4.5	4.8			4.6	4.4
CPH 711 (Chronic)										
CPH 712 (Advanced)			2.67	4.17			3.6	3.6		

The Advanced Epidemiology course (CPH 712) has been offered by several instructors since 2015 (Abner, Browning, Winter, Kucharska-Newton, Lacy). This course requires that students are well prepared in the basic concepts from the introduction to epidemiology course (CPH 605). In recent semesters, it has been noted by the instructors that students seem less prepared for the content of the material in this course, and faculty often state that this is not “truly an advanced course” due to the necessity of reviewing prior material; the instructors are often not able to make it through material within the semester, which would be covered in most advanced epidemiology texts. This may be especially concerning for the EPB PhD students who are also enrolled in this class.

There are likely several factors involved in this challenge, including the sequencing of the course with introductory epidemiology (CPH 605), which often has a Spring Semester and Summer break in between the course offerings; the current modality (online) of the introductory course (which may not work for some students); and perhaps the lack of adequate TA support for the introductory class. Current efforts are being implemented to structure the sequencing so that these courses follow each other from the fall to the spring semesters within the same academic year, and re-implementing an in-person version of the introductory epidemiology course. It should also be noted that Chronic Disease Epidemiology (CPH 711) has not been offered in many semesters due to low enrollments when it has been offered; it is being offered in Spring 2023.

Benchmarking of our MPH-EPI curriculum.

One of the challenges of running academic programs is that although the content and quality of the program is the collective responsibility of the faculty, it has generally been incumbent upon the program directors to provide the leadership and oversight of how well the program is meeting the requirements of the accrediting organization as well as the needs of the discipline. This is no easy task with a generalist MPH degree which has concentrations, in our College, in 4 distinct subdisciplines (EPI, EH, Health Behavior, and Health Management and Policy). Consequently, there are a number of tensions, which are apparent in faculty discussions regarding the degree.

There is a tension between the expectations of the skills needed for an academic/research epidemiologist and those required for an applied epidemiologist working in a local or state government role. There is a tension between the broadly defined competencies of CEPH for the generalist MPH degree and the competencies that practicing epidemiologists know are required to be competent in the position. Some of our discussions revolving around the self-study have required us to reflect on the “why do we have this degree” and “what types of roles are we training/educating our students for” as perhaps to a large extent, we have been running the same play and programs with limited adjustments made to the status quo. These tensions play out in terms of expectations for the capstone project, the experience in the practicum, and the guidance provided to students while they are in the program. Admittedly, the majority of our faculty (although not all) have spent the entirety of their career in academic roles and have less familiarity with the range of diverse and distinct roles for epidemiologists outside of academia; these outside roles that very often require skills in communication, project management, data management, surveillance, evaluation, policy, and cluster and outbreak investigations.

As a CEPH-accredited program, our curriculum generally follows closely the core and the concentration specific requirements of several of our benchmark institutions. Our curriculum for the MPH in Epidemiology (**Table 1-8**), however, may be lacking with regard to the biostatistical and applied programming provided by

several of our benchmark institutions. We are currently providing what several of our faculty would consider a minimal (at best) sequence of courses for those with an epidemiology concentration.

Although we have strongly encouraged our students to take the BST 635 SAS programming course, as noted above there have been challenges in having this course consistently offered and available to our students. In addition, since it is not a requirement for the program, it is less likely to be consistently offered. **A review of our benchmark institutions confirms that a statistical programming course is a required course for the epidemiology curricula** for Ohio State, Iowa, and the University of Alabama at Birmingham (Table 1-9).

Figure 1-8. MPH in Epidemiology Curriculum

University of Kentucky College of Public Health: MPH Epidemiology
TOTAL MPH in EPI Enrollment: Usually 15-21 new students each year
MPH in EPI (45hrs)
Core Courses (12 credits)
<ul style="list-style-type: none"> • CPH 605 Epidemiology (Fall 1) • CPH 603 Measuring Health Behavior (Fall 1) • CPH 621 Understanding and Communicating Environmental Health (Fall 1) • CPH 663 Foundations of Public Health (Fall 1) • CPH 603 Data Analysis (Spring 1) • CPH 650 Public Health Systems Administration (Spring 2) • CPH 672 Evidence based Public Health (Spring 1)
Required EPI Courses (22-25)
<ul style="list-style-type: none"> • CPH 712 Advanced Epidemiology (Fall 2) • CPH 615 Cancer Epidemiology or CPH 711 Chronic Disease • CPH 612 Infectious Disease (Spring 2) • CPH 660 Disease Mapping and Data Visualization (Spring 1) • CPH 608 Public Health Capstone (Fall 2 and Spring 2) • CPH 609 Public Health Practicum (Spring 1)
Electives (3-6 credits)
BST 635 Databases and SAS Programing is strongly encouraged, although not required.

Further, we currently require only one (BST 603) data analysis course for the MPH in Epidemiology. This is in sharp contrast to our previous MPH curricula (prior to 2016) when a two sequence biostatistics course series was offered for our students; these courses are no longer offered by the Department of Biostatistics. Providing our MPH students with instruction in multivariable regression analysis (linear and generalized linear models) is markedly less successful than in the earlier years of the program.

MPH Epidemiology: Benchmarking with Other Universities.

Table 1-9. Benchmark Epidemiology MPH Degree Programs

Ohio State University	UAB	U. of Iowa	U. of North Carolina
<p>TOTAL MPH/EPI Enrollment: MPH in EPI (45hrs)</p> <p>Core Courses (12 credits)</p> <ul style="list-style-type: none"> • PUBHTLH 6001 Methods in Quantitative Data Analysis (4) • PUBHLTH 6002 History, Values and Essential Services of the U.S. Public Health System (2) • PUBHLTH 6003 Methods in Public Health Planning and Evaluation (2) • PUBHLTH 6004 Essentials of Population Health (4) <p>Required EPI Courses (22-25)</p> <ul style="list-style-type: none"> • PUBHBIO 6211 Design & Analysis of Studies in the Health Sciences II (3) • PUBHBIO 6270 Introduction to SAS for Public Health Students (3) • PUBHEPI 6411[^] Biological Basis of Public Health (3) • PUBHEPI 6442 Social Epidemiology (3) • PUBHEPI 6431 Design & Implementation of Health Surveys (3) • PUBHEPI 7410 Epidemiology II & Lab (4) 	<p>TOTAL MPH / EPI Enrollment: MPH in EPI (42hrs)</p> <p>Core Courses (14 hours)</p> <ul style="list-style-type: none"> • 601 This is Public Health • 602 Community Assessment in Public Health • 603 Quantitative Methods in Public Health • 604 Public Health Programs and Policies • 605 Public Health Management and Evaluation • 606 Public Health Leadership <p>Required Courses</p> <ul style="list-style-type: none"> • 690 Environmental Health Perspectives (1) <p>Concentration Requirements (14 credits)</p>	<p>TOTAL MPH / EPI Enrollment: MPH in EPI (42-3hrs)</p> <p>Core Courses</p> <ul style="list-style-type: none"> • CPH:5100 Introduction to Public Health • BIOS:4120 Introduction to Biostatistics • CBH:4105 Introduction to Health Promotion and Disease Prevention • EPID:4400 Epidemiology I: Principles • HMP:4000 Introduction to U.S. Health Care Systems • OEH:4240 Global Environmental Health <p>Required Epi Courses (19)</p> <ul style="list-style-type: none"> • 4400 Epidemiology I (3) • 5600 Introduction to Epi Data management and analysis (3) • 5241 Statistical Methods in Epidemiology (4) 	<p>TOTAL MPH/EPI Enrollment: MPH in EPI (42hrs)</p> <p>Core Courses (15 credits)</p> <ul style="list-style-type: none"> • Data Analysis for PH (2) • Measurements & Methods for PH Practice (2) • Understanding Public Health Issues (2) • PH Solutions: Systems, Policy, & Advocacy (2) • Developing, Implementing, & Evaluating PH Solutions (4) • Leading from the Inside Out (2) <p>Required EPI Courses (15)</p> <ul style="list-style-type: none"> • Fundamentals of Epidemiology • Data in Public Health • Epidemiologic Data Analysis • Fundamentals of Public Health Surveillance • Methods in Field epidemiology

<ul style="list-style-type: none"> • <i>PUBHEPI 7430 Epidemiology III (4)</i> • <i>One additional biostatistics course. Choose from: PUBHBIO 6250, 7220, 7255, 7230, 7235 (3)</i> <p><i>Electives (3-6 credits)</i> <i>Applied Practicum (2)</i> <i>Culminating Project (3)</i></p>	<ul style="list-style-type: none"> • <i>610 Principles of Epidemiologic Research</i> • <i>624 Introduction to Data Analysis with SAS</i> • <i>625 Quantitative Methods in Epidemiology</i> • <i>611 Intermediate Statistical Analysis I</i> • <i>612 Intermediate Statistical Analysis II</i> <p><i>Require Electives (3)</i> <i>Choose one of Chronic or Infectious Disease.</i></p> <p><i>Electives (6 hours)</i> <i>Internship (3)</i></p> <p><i>Integrative Learning Experience (3)</i></p>	<ul style="list-style-type: none"> • <i>Epidemiology II Advanced Methods (4)</i> • <i>5540 Public Health Surveillance, Mechanisms, and Applications (3)</i> • <i>Public Health lab techniques (1)</i> <p><i>Any Three (REQUIRED)</i></p> <p><i>Electives Tracks (3 hrs.)</i></p> <p><i>Applied Practice Exp (2 hrs.), Capstone Exp (1hr), & Interprofessional Exp (0hr)</i></p>	<p><i>Electives (9 credits)</i></p> <p><i>MPH Practicum (200 hours)</i> <i>MH Culminating experience (3)</i></p>
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MASTER OF PUBLIC HEALTH IN ENVIRONMENTAL HEALTH (MPH-EH)

The MPH in Environmental Health (MPH-EH) is designed to develop practitioners who protect people and communities from physical, chemical, biological, and structural factors that exist outside the body but contribute to disease and poor health outcomes. Environmental health concentrators learn from faculty with expertise in environmental and spatial epidemiology, occupational and environmental medicine, toxicology, children's environmental health, injury prevention, environmental health communication, community-engaged research and community/citizen science, and environmental health literacy and promotion. The curriculum is designed to help students learn to reduce, control, and communicate about environmental health hazards. Graduates should be prepared for careers interpreting data, developing health-protective recommendations, and implementing and evaluating evidence-based solutions in local and state health departments, federal agencies, non-governmental organizations, and the private sector.

At present, 6 EEH faculty members serve as concentration faculty who teach core, required, and/or elective courses, while other EEH faculty members, including the department chair, lead or serve on student capstone committees within the concentration.

Assessment of the MPH-EH Curriculum.

Although revisions in the 2016 Council on Education in Public Health (CEPH) Accreditation Criteria (CEPH, 2016) necessitated changes in the core MPH curriculum that had ripple effects for concentration course sequencing and availability, MPH-EH concentration competencies (**Table 1-10**) have not been amended since before the updated guidelines were released. The current MPH-EH competencies were established by faculty in the then-Department of Preventive Medicine and Environmental Health. At present, concentration faculty are in the process of evaluating the alignment and suitability of these competencies in relation to both the revised CEPH MPH accreditation criteria and public health workforce needs.

Table 1-10. Current Concentration Competencies

EH1. Propose strategies in determining exposure and evaluating risk for selected occupational and environmental hazards.
EH2. Propose engineering, educational, policy and enforcement strategies that reduce occupational and environmental exposure that improve health outcomes in selected populations.
EH3. Critique various literature sources for communicating issues of hazards, practice-based strategies, and environmental justice and equality.
EH4. Develop appropriate methods to identify, characterize and address environmental health issues.
EH5. Critically assess the general mechanisms of toxicity in eliciting a toxic response to various occupational and environmental exposures.

Students attain concentration competencies through a sequence of four (4) required courses totaling twelve (12) credit hours (**Table 1-11**). One of these courses (CPH 621) also is a core course required for all MPH concentrations. Additional relevant content knowledge and skills are developed through elective courses totaling nine (9) credit hours (**Table 1-12**), twelve (12) of which are taught by or in conjunction with College of

Public Health faculty and five (5) of which are available through other colleges. These courses, along with additional core courses required for all students enrolled in the MPH program regardless of concentration, total 42-43 credit hours. As concentration faculty revisit competencies to ensure optimal alignment with current accreditation requirements, workforce needs, and departmental faculty capacity and expertise, concentration courses and electives also are being evaluated for fit. In addition, discussions are ongoing regarding potentially transitioning 1-2 courses (i.e., Disease Mapping; Global Public Health) from elective options to concentration requirements.

Table 1-11. Core and Concentration Courses that Fulfill MPH-EH Concentration Competencies

	EH1	EH2	EH3	EH4	EH5
CPH601 Environmental Health	C	C	C	C	
CPH 620 Occupational Health	C	C	C	C	C
CPH 621 Understanding & Communicating Environmental Health Risk	C	I	C	I	
CPH 622 Toxic Agents & Their Implications in Public Health	C	C	I	C	C

I = Introduces; C=Covers; see Table 1-10 above for description of EH1-EH5

Table 1-12. Current Graduate Electives and Last Date Offered

CPH Electives	Last Offered
CPH 612 Infectious/Emerging Disease	Spring 2022
CPH 614 Managerial Epidemiology	Spring 2020
CPH 617 Occupational & Environmental Epidemiology	Fall 2022
CPH 645 Food Systems, Malnutrition & Public Health	Spring 2020
CPH 647 Research Methods for Public Health	Fall 2019
CPH 648 Eliminating Health Disparities	Spring 2022
660 Disease Mapping & Data Visualization	Spring 2022
CPH 728 Special Topics in Occ/Env Health	***
CPH 729 Independent Study in Occ & Env Health	***
CPH 776 Intro to Global Public Health	Fall 2022
CPH 778 Deans' Interprofessional Honors Colloquium	Spring 2019
PM 661 Occupational and Environmental Sampling	Spring 2020
External Electives	Last Offered
CE 555 Microbial Aspects of Environmental Engineering	unknown; prior to Fall 2022
CE 599 Environmental Health and Engineering	Spring 2023
ENT 561 Insects Affecting Human and Animal Health	Fall 2022
KHP 615 Biomechanics	Fall 2022
RM 545 Radiation Hazards and Protection	Spring 2023

Table 1-13 TCE data for MPH core classes from Spring 2020-Spring 2022.

	Spring 2020		Fall 2020		Spring 2021		Fall 2021		Spring 2022	
EH Core Courses	Quality of Course	Quality of Teaching	Quality of Course	Quality of Teaching	Quality of Course	Quality of Teaching	Quality of Course	Quality of Teaching	Quality of Course	Quality of Teaching
CPH 601 (EH)	2.0	2.5	<i>N=too small for reporting</i>							
CPH 620 (Occ)	<i>N=too small for reporting</i>									
CPH 621 (Comm)	4.7	4.83			4.75	4.86	4.7	4.88		
CPH 622 (Tox)	<i>N=too small for reporting</i>									

MPH-EH Enrollment Trends

In the three years for which data are available, application numbers ranged from a low of 8 in 2019-20 to a high of 17 in 2018-19. The percentage of applicants receiving offers of admission ranged from 60% in 2021-22 to 75% in 2018-19. The percentage of applicants actually matriculating into the program ranged from 29.4% in 2018-19 to 62.5% in 2019-20. See Tables 1-14a-c below for additional detail.

Student Demographics (MPH-EH)

Three years of available admissions data for the MPH-EH indicate that the program has had past success in recruiting a relatively diverse student body (Tables 1-14a and b). As faculty numbers have declined in recent years, however, the program has needed to reduce the number of annual admissions to ensure adequate capstone support. The most recent cohort reflects declining levels of diversity among admitted students (Table 1-14c). This decline indicates need both to expand faculty capacity and to improve recruitment of competitive applicants who enrich the program by bringing a variety of backgrounds, experiences, and perspectives to bear on environmental health issues.

The MPH-EH program has been moving toward gender balance based on the years for which data are available. In both 2018 and 2019, newly matriculating students self-identified as 60% male and 40% female; in 2021, self-identified male and female students each comprised 50% of newly matriculating students.

Table 1-14a. Fall 2018 Admissions for the MPH in Environmental Health by Race

Race	Offer (N)	Offer (%)	Accepted (N)	Accepted (%)	Admission rate
White	8	72.7%	3	37.5%	25%
Black	2	50%	2	100%	50%
Asian	1	100%	0	0%	0%
Other	0	NA	0	NA	NA
Total	11	64.7%	5	45.5%	29.4%

Table 1-14b. Fall 2019 Admissions for the MPH in Environmental Health by Race

Race	Offer (N)	Offer (%)	Accepted (N)	Accepted (%)	Admission rate
White	2	33.3%	2	100%	33.3%
Black	1	100%	1	100%	100%
Asian	2	100%	2	100%	100%
Other	0	NA	0	NA	NA
Total	5	75%	6	100%	62.5%

Table 1-14c. Fall 2021 Admissions for the MPH in Environmental Health by Race

Race	Offer (N)	Offer (%)	Accepted (N)	Accepted (%)	Admission rate
White	2	50%	2	100%	50%
Black	0	0%	0	0%	0%
Asian	1	100%	1	100%	100%
Other/ Unknown	3	100%	1	33%	33%
Total	6	60%	4	66.7%	40%

Benchmarking the EH curricula.

For program planning, we have examined our current MPH-EH curricula alongside five benchmark programs in environmental health: Ohio State University, the University of Alabama-Birmingham, the University of Iowa, the University of North Carolina, and the University of South Florida. The curricula of these programs are outlined in Table 1-15.

Table 1-15. MPH-EH Benchmarking Data.

	Ohio State University	U. of Alabama - Birmingham	U. of Iowa	U. of North Carolina	U. of South Florida
MPH	TOTAL MPH/EHS Enrollment: 7 MPH in EHS (45hrs) <i>Core Courses</i> <ul style="list-style-type: none"> • Biostats • Advanced EHS • Principles of Epi • Prev Disease & Prom Health through Behavioral Sci 	TOTAL MPH/EOH Enrollment: 40 MPH in EOH (42hrs) <i>Core Courses</i> <ul style="list-style-type: none"> • Biostats • EO Exposure • Intro Epi • Social & Beh Sciences Core • Mgmt & Policy in PH Systems 	TOTAL MPH/OEH Enrollment: 4 MPH in OEH (42hrs) <i>Core Courses</i> <ul style="list-style-type: none"> • Intro PH • Intro Biostats • Intro Health Promotion/Prev • Epi I: Principles • Intro US Healthcare System 	TOTAL MPH/EHS Enrollment: 7 MPH in EH Solutions (42hrs) <i>Core Courses</i> <ul style="list-style-type: none"> • Understanding PH • Methods & Measures • Analysis • Conceptualize PH Solutions 	TOTAL MPH/EOH Enrollment: 37 MPH in EOH (42hrs) <i>Core Courses</i> <ul style="list-style-type: none"> • History/Systems PH • Pop Assessmt, 1 • Pop Assessmt, 2 • Translation to Practice <i>Concentration (12)</i> <ul style="list-style-type: none"> • Principles of EH

<ul style="list-style-type: none"> • Intro to HC Org <p><i>Required EHS Courses</i></p> <ul style="list-style-type: none"> • Toxicology • Occ Health Science • Global Health & Env Microbiology • Risk Assessment • Exposure Science Monitoring Tech • Major Human Diseases in Global PH • Seminar in EHS <p><i>Electives (11hrs)</i></p> <ul style="list-style-type: none"> • Climate Change & Human Health • Eng Design for EH • Ind Studies in EHS • Group Studies in EHS • Water Contam. • Quant Microbial Risk Analysis Modeling • Adv Food Microbio II • Molecular Tech for EHS • Cancer Epi • Epi & EH • Field Exp in PH • Field Exp in Global PH <p><i>Practicum</i> <i>Culminating Project</i></p>	<ul style="list-style-type: none"> • PH Integrative Experience <p><i>Required Track (11 hours)</i></p> <ul style="list-style-type: none"> • Assessing & Managing Env Risks • EO Tox & Diseases • Air/Water Pollution • Current Topics (X2) <p><i>Dept. Elective Tracks (9 hours)</i></p> <ul style="list-style-type: none"> • Env Toxicology • Occ Health & Safety • Industrial Hygiene <p><i>Internship</i></p>	<ul style="list-style-type: none"> • Global EH <p><i>Required OEH Courses</i></p> <ul style="list-style-type: none"> • OEH Seminar • Occ Health <p><i>Any Three (REQUIRED)</i></p> <ul style="list-style-type: none"> • Global Water & Health • EO Epi • Injury/Violence Prev • Occ Safety • Rural Health/Ag Med • Env Toxicology <p><i>Electives Tracks (8hrs)</i></p> <ul style="list-style-type: none"> • EO Epi • Global EH • Injury/Violence Prev • Occ Health • Rural Health and Safety <p><i>Applied Practice Exp (2 hrs)</i> <i>Capstone Exp (1hr)</i> <i>Interprofessional Exp (0hr)</i></p>	<ul style="list-style-type: none"> • Dvlp, Implement, & Eval PH Solutions <p><i>Required EHS Courses</i></p> <ul style="list-style-type: none"> • Health Effects of Env Agents • Env Proc., Exposure, & Risk Assessment • Policy Design for EH Solutions • Global Env Crisis Mgmt (Culminating Experience) <p><i>Two Courses from:</i></p> <ul style="list-style-type: none"> • Global Climate Change • Water/Sanitation Policy • Comm-driven research and EJ • Space-time exposure mapping/risk assessmt • Health hazards of industrial ops • Env chemical processes <p><i>Practicum</i> <i>MPH Electives (3)</i></p>	<ul style="list-style-type: none"> • EO Toxicology • EOH Risk Assessmt • EO Health Law <p><i>Electives (12)</i></p> <ul style="list-style-type: none"> • Comm Air Pollution • Expos Assessmt/Ctrl • Indoor Env Quality • Env Lab Principles • Global Issues in EH • HSE Mgmt & Admin • Princ of Occ Safety • Industrial Hygiene • Industrial Ventilation • Methods in IH I • Methods in IH II • Industrial Tox • Bioterrorism/defense • PH Seminar EOH • Intro Structured Prog./Comp Analysis • HazMat in Workplace • Human Error/Pt Safety • Disease Pathobiology • Occ Epi • Aerosol Tech in IH • Env Modeling <p><i>Special Project</i> <i>Comprehensive Exam</i></p>
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MPH Employment Data.

While the CPH recently hired an alumni director in 2023, we have not been able to obtain data which could be considered complete on our MPH graduates with regard to their current placements and employment.

THE PHD IN EPIDEMIOLOGY AND BIOSTATISTICS.

The EPB PhD program, established in 2009, does not have a separate program budget. While we have been able to support all admitted doctoral students, generally for 3 to 4 years, through a combination of RA positions on grants and TA positions in the College, the number of positions for these graduate assistantships has not been stable. Currently, the program limits admission to those applicants with a definite funding source, which is determined by program faculty during admissions reviews. Students are matched with program mentors by research interests and available funding slots. Historically, our program was critically supported by many student placements in the Applied Statistics Laboratory, which is run by the Department of Statistics. These positions are no longer available. Other program needs are generally covered by Departmental and College Budget lines. Some student travel has been supported by requests through the Graduate School and the College. Efforts to support doctoral student travel to present at regional or national meetings have been facilitated by a procedure to make such a request from departmental travel funds from either DEEH or the Department of Biostatistics. In addition, doctoral students may be supported in their travel by training grant funds (CARERC) or faulty grants.

Our program stipends, which range between \$18,000-\$26,000 per year (two semesters), are less than the mandated NIH stipend levels and far below our benchmarks (**Table 1-16**). Consequently, we have not been able to recruit a number of very qualified students who we made offers to as they have accepted better financial positions at other universities.

Benchmarking of the PhD curriculum.

Table 1-16. PhD in Epidemiology: Characteristics of benchmark and aspirational programs

	JHU	UNC	Iowa	BUSPH	Columbia	Emory Rollins	Vanderbilt
Prior degree	Master's preferred	Master's preferred	Master's in Epi required	Master's in Epi required	Master's in Epi required	Bachelor's	Master's in Epi or Bios required
GRE	No	No	No	No	No	Encouraged	Encouraged
Calculus	Pre-calc	Encouraged	One semester	No	Encouraged	Encouraged	Encouraged
Science	Biology + 1	Encouraged	Two semesters	No	Encouraged	Encouraged	No
Funding	4 years (Tuition + insurance)	Competitive	Competitive	4 years (Tuition + insurance + stipend)	5 years (Tuition + insurance + stipend)	2 years (Tuition + insurance + stipend)	Full funding ((Tuition + insurance + stipend)) duration unclear
Stipend	None	\$12-24K	Varies	?	?	\$31,775	\$35,000

Program Duration	4-5 years	5-6 years	4 years	5 years	5 years	?	72 credits
Teaching Requirement	No	Yes	No	No	Yes	Yes	Encouraged

The Offices of Student Affairs and Academic Affairs in the College of Public Health provides the program support for adherence to educational policies. Processes for course equivalency transfers, course substitutions, course transfers, and vetting of exceptions are handled by the DGS in consultation with the Graduate School. Course scheduling, teaching assignments, grading, and course evaluations are handled by SEAS.

EPB Program History

The Commonwealth of Kentucky Council on Higher Education approved the creation of the Ph.D. Program in Epidemiology and Biostatistics in early 2009. The program is administratively managed within the Department of Epidemiology and Environmental Health and Department of Biostatistics in the College of Public Health. The first class of 6 students matriculated in the Fall semester of 2009. The first graduate from the program, Dr. Timothy Crawford, successfully defended his dissertation in December 2012. As of December 2022, 37 students have graduated from the EPB program. For the 35 graduates for whom current positions are known, all 35 are working in the fields of Epidemiology and/or Biostatistics (**Table 1-17**).

Table 1-17. Career placements for graduates of the PhD in Epidemiology and Biostatistics (2012-2022; n=37)

Career field	N
Academia	17
Faculty	9
Postdoctoral	8
Pharmaceutical	3
Healthcare	10
Tech	4
Government	1
Unknown	2

EPB Program Mission

The PhD program in Epidemiology and Biostatistics at the University of Kentucky was designed to prepare professionals for careers in conducting observational research and clinical trials. This unique program strongly emphasizes the acquisition of applied skills in the complementary fields of epidemiology and biostatistics, as well as the theoretical foundations of these disciplines. Graduates of this program are prepared to address the practical challenges of conducting observational and clinical, translational research in the multidisciplinary work environments of academia, government, and industry. The success of this mission is reflected in **Table X**. The

essentially strong cross-training and mentoring nature of the program is intended to develop independent researchers skilled in designing and conducting studies, as well as analyzing and interpreting the results from an increasing variety of designs and databases in the public health and medical research domains.

The PhD program in Epidemiology and Biostatistics is committed to providing excellent, innovative teaching in both formal courses and individual student mentorship at the graduate level. We want our students to be well-educated scholars for post-doctoral and faculty positions in public and private universities, research positions in the expanding fields of medical research or public health in the private sector, and senior positions in government.

One of the hallmarks of our program is intended to be its small size and focus on interdisciplinary team science. Faculty research is critical to achieving our instructional goals. We seek to conduct research that is nationally and internationally recognized, characterized by publication in peer-reviewed journals and supported by external funding. Finally, in keeping with the University's Land Grant mission, we conduct research that seeks to identify and address significant problems in public health faced by the citizens of our state and region.

The core curriculum includes foundational coursework in theory, methodology, and application of epidemiology and biostatistics:

Table 1-18 Core Curriculum in the PhD Program.

• EPI 714 Epidemiologic Study Design (3 credits)
• EPI 715 Advanced Methods in Epidemiology & Biostatistics (3 credits)
• EPI 717 Introduction to Causal Inference (3 credits)
• BST 682 Generalized Linear Models (3 credits)
• BST 762 Longitudinal Data Analysis (3 credits)
• CPH 786 Doctoral Seminar (4 credits)

In addition to these required courses (19 credits), students are required to complete 15 credits of electives and 4 of residency, for a minimum of 38 credit-hours for completion.

Current issues in the EPB Program.

Below, faculty in the program have briefly delineated some of the current issues and concerns that have been debated in the Graduate Faculty meetings of the EPB program. To some degree, these are perennial concerns for PhD program in higher education which experience budget challenges, as doctoral programs are not inherently resource generating for Universities, and expectations among degree candidates for the support of their studies.

1. **Admissions and class size.** One of the key concerns has been admissions and the size of the program that we are able and willing to support. Generally, there is a sense that an entry level cohort of 4-6 students each year (or every other year) would preserve the value of the cohort group for the students and also keep the required class sizes at a level that would make it worthwhile and more cost effective for the faculty member offering the course. Departments (DEEH and Biostatistics) have generally provided 4-6 TA and GRA positions to help support the incoming doctoral students. The challenge is moving the students into research positions after the first 1.5 years.

2. **Funding for the PhD students.** Funding is a perpetual challenge for Graduate programs. Some of the more successful programs in the country provide entering PhD students with funding from the Graduate School during the first 1.5-2 years in the program as they are taking coursework. This is primarily either as a TA or GRA. Afterward, students can often be transitioned to positions on faculty research projects or training grants. Securing training grants, pilot funds, and other sources of support for doctoral students is the collective responsibility of the faculty who are in charge of managing these graduate programs. There is little question that the experience of each PhD student is somewhat unique depending upon their advisors, their research area and project, and the manner in which they approach their dissertation research while often managing other jobs, their personal lives and commitments, and the breadth of issues which arise in everyday life. Certainly, setting some expectations within a doctoral program regarding expected levels of financial support and reasonable timelines in the program is a very necessary and important part of continuing a doctoral program. We have several senior faculty who have consistently supported doctoral students through grant funding and funding from training grants (CARERC).
3. **The focus of the doctoral program—should it be reconsidered?** Our PhD program, which was initiated in 2009, was conceived as providing strong quantitative training in both epidemiology and biostatistics. The expectation was to train researchers with the necessary skills to be successful within a defined area of expertise and who could contribute to their own field. The expectation was that many of these doctoral students would continue in an academic setting but may also find work in industry, government, etc. Any joint discipline program will likely face continuous struggles as academic disciplines have their defined beliefs, niches, and expectations, much of which are based on the prior training and experiences of their faculty. In many ways, if one judges the success of a program by the accomplishments of its students within the program as well as after it in their careers, our program has much to be proud of (**see below—Placement and follow-up of PhD Students**).

In spite of this record, strong concerns have been raised by many program faculty members from both departments that the focus and curriculum of the current program does not well reflect their expectations and desires for doctoral training in biostatistics. To a degree, the program has also brought faculty from EEH and Biostatistics together on many doctoral student projects, which has resulted in shared research experiences that have increased the skills and knowledge of our faculty and created a mutual respect for the contributions of the two disciplines. That said, to a degree, students still tend to “track” towards either epidemiology orientation or biostatistics focus, although the influence of both disciplines are apparent, to varying degrees, in their dissertations.

We have reached the stage in the program for a reflection on the future of the program. There certainly is some sentiment for “re-envisioning” the PhD as a more traditional doctorate in Epidemiology, with strong support from the Department of Biostatistics for core quantitative coursework. The strategy would also be well supported since we have developed MS degrees in both Biostatistics and Epidemiology. This would likely be a trajectory that would be 3-5 years out as a program level change would need to be undertaken and it would be preferable to have several years of experience with the master’s programs in place. In addition, additional faculty in epidemiology who would have the experience and interest in mentoring doctoral students would need to be recruited.

There are also discussions within the departments and College about reconsidering admissions into the DrPH degree program. In general, there is not strong faculty support for engaging in both programs given current resources. A generalist online DrPH degree program may be discussed but again the challenge will be faculty support for mentoring additional doctoral students for their capstone projects.

4. **How dissertations are formed.** Dissertation committees are officially formed only after the student has passed the comprehensive examination, but students often begin working with faculty earlier to develop

their research projects. Committees must be formed to include 3 EPB program faculty, with at least one member representing each department. Students are encouraged to seek an additional subject matter expert to round out the committee. Dissertations follow the 3-paper model. Most students publish at least one paper from their dissertation, with many publishing all three. The faculty on the Graduate Committee continue to work to refine the expectations for the qualifying exam and the dissertation based on experience and the success of our students in the program.

5. **Rigor and depth of the classes.** Enhancing the depth and content of the courses for the PhD program is ongoing consideration and challenge. Due to the large number of programs within DEEH, and the limited number of faculty, courses often have multiple audiences, and include both masters and doctoral students. Entire courses could be devoted to one type of study design approach such as a course on case control studies or cohort approaches. Further, certain topics such as the skills needed for undertaking projects that involve primary data collection, and the skills needed to translate research findings into policy changes that can affect public health, could be explored. Benchmarking of our PhD program will likely follow our decisions on what direction the program should take in the coming years.
6. **Providing teaching opportunities for students.** As mentioned above, many EPB are funded as teaching assistants in the early semesters of the program. However, these roles are largely limited to grading and do not provide much in the way of pedagogical training. Teaching experiences are required or encouraged in many PhD in Epidemiology programs. Students hoping to pursue academic careers especially would benefit from more attention to pedagogical development in the program. The majority of the faculty in the Graduate Committee favor increasing the teaching experience of our graduates and perhaps making this mandatory.
7. **Placement and follow-up of PhD students (Appendix 4).**

MS DEGREE IN EPIDEMIOLOGY.

The recently approved (February 2023) MS program in epidemiology in the College of Public Health is intended to prepare professionals for mid-level careers in conducting population-based research. In contrast to other master's programs in epidemiology, this program will leverage the unique collaborative environment between the departments of Biostatistics and DEEH in the College of Public Health. This is an integrative two-year master's program with a strong emphasis on quantitative and methodological skills development, which lays the foundation for coursework requirements for the joint PhD program in Epidemiology and Biostatistics (EPB) in the College of Public Health or other doctoral programs. The strong cross-training and emphasis on mentorship in the program is intended to develop researchers who will be skilled in designing, conducting, analyzing, and interpreting the results from an increasing variety of study designs and databases in the public health and clinical research domains.

Why did we need to offer another master's degree in science in epidemiology?

The impetus for putting forward a program proposal for an MS in epidemiology arose following conversations from a faculty retreat in which we recognized that the CEPH changes in the requirements for the MPH sufficiently changed the curriculum that we felt the current MPH program was a less rigorous training program

in preparing students for a career in which epidemiology would be their primary discipline. As illustrated in the Table 1-19 below, the audience for the MS is students who wish to have a technical and research orientation while the intended target audience for the MPH degree is students entering a more general public health practice employment opportunity. There are two biostatistics courses that are required for the MS while only one applied data analysis course is required for the MPH. In addition, the MS will require a databased master's thesis as the final requirement while the MPH will require an integrated learning experience (capstone) which will be designed to meet several competencies required in the program but may not necessarily involve the use and analysis of secondary data using the typical epidemiology methods. As mentioned in the discussion of the capstone project throughout this document, the faculty intend to make some changes to the MPH program to accommodate the academic preparation of the current students who are completing the degree and make some adjustments, for example to the 4+ 1 student ILE, so that there are reasonable expectations for the project while accommodating the typical proposed schedule for degree completion.

Table 1-19. Comparison of the MS and MPH Degrees in Epidemiology.

	MS Degree	MPH degree
Credit Hours	39	42
Audience	Research and technical, PhD seeking	Practice
Epidemiology classes	<ul style="list-style-type: none"> • 605 Intro Epidemiology • 712 Advanced Epidemiology • Cancer or Chronic or Infectious Epidemiology • Study Design (714) • Advanced Methods in EpiBio (715) 	<ul style="list-style-type: none"> • 605 Intro Epidemiology • 712 Advanced Epidemiology • Cancer or Chronic • Infectious Epidemiology • CPH 660 Disease Mapping & Data Visualization
Biostatistics classes	<ul style="list-style-type: none"> • BST 600 Methods in Biostatistics –Slade • BST 681 egression Models for Epidemiology(Linear)–Ellis • CPH 635 SAS programming 	CPH 603 Data analysis
Environmental Health, Health Management, Health Behavior classes	None required	4 classes
CPH 663	1 credit version	Required
Electives	12 Elective Hours	6 credits of electives
Practicum	No	Yes
Integrative Learning Experience (Capstone)	No	Yes
Master's Thesis	Yes	No

SUMMARY OF MPH STUDENT FOCUS GROUPS.

A focus group survey was developed by several of the self-study committee faculty (Browning, Hoover) and conducted with six of our MPH students by the SEAS office (Benji Bryant) in March of 2023. The questions in the survey are given in Appendix 5 and focused on student preferences for in-person, online (synchronous and asynchronous courses), their academic preparation for the MPH degree, their reflections on the MPH core courses, the capstone course and process, and the practicum. The complete transcript of the interviews with names removed is available from the self-study committee.

A brief summarization of key results is listed below:

Course format. While students often indicated that well developed online courses offered a flexibility and convenience for their schedules and their travel to campus, many found that this format was not optimal for certain types of courses such as those which involved biostatistics, computer programming (SAS and R), and advanced epidemiologic methods. A number of students indicated how having a lab or discussion section for courses which involved data or numerical calculations was a preference, along with having the opportunity to ask questions of a professor in person rather than on ZOOM or through email. Even for well-designed online courses, a number of students expressed the challenge of taking an asynchronous course as it was less motivating and difficult to “remember they had the course” as well as receiving timely response to their questions on problems. There was a consistent sentiment that two-hour ZOOM classes were exhausting and needed to be split over time. The use of discussion boards with these students was not popular and considered “busy work”. Asynchronous online classes that had group projects were also considered difficult to implement.

Academic preparation. Several students who had a traditional science or social science background as an undergraduate expressed that the transition to Graduate School and the expectations of the classes were reasonable. There were some concerns by students who entered the MPH program with a BPH undergraduate degree. They indicated that some of the undergraduate courses were not challenging, problem solutions were “spoon-fed” and there was little required outside of class. Several indicated that they were not fully aware of what was required in an epidemiology concentration and did not know that applied statistical programming and biostatistics were integral to the discipline. Many indicated that they would like to have had more practice and experience in using EXCEL, SAS, or other software earlier in their master’s training. Several indicated that the training in the quantitative methods needed to occur over the several semesters with the course scheduling and that they were being hit a bit late in their training on some essential skills. Students also expressed concern regarding a lack of integration across classes and of professors not being knowledgeable about the full workload within a given semester and appropriately structuring classes to have a more even workload with regard to all of their classes. A number of students expressed concern that there were few offerings in environmental health courses at the undergraduate or graduate level.

The capstone. The transcript documents that the capstone requirement is a unique challenge for both the students and their professors. Overall, students indicated that they were fairly satisfied with the capstone course, although some thought the focus on writing (particularly structuring paragraphs and sentences) was not necessary. Managing a larger individual effort such as a capstone was considered a new challenge. A few students expressed the concern that the MPH program did not do enough to motivate students or provide them with the resources to start earlier in the program –even in the first year. This year (2023), in particular, we have had a large number of students who have had to wait for months to obtain their data, which has been a frustration. This has especially impacted the 4+1 students who often were taking more than 15 credit hours in their final semester. On the positive side, several found that the capstone did integrate and connect many of the concepts that they were learning about and allowed them to be creative and do work similar to what they may undertake in their profession.

Practicum. Several students expressed challenges with the practicum including getting the hours that they need (“there was not enough work”), poor supervision by advisors, and especially challenges in scheduling practicums during the semesters, especially Spring, when they had heavy course loads and other responsibilities. Practicum experiences were quite variable and very much dependent on the advisors that each student had in impacting the usefulness of the experience.

SUMMARY OF EDUCATIONAL PROGRAMS SURVEY.

A Departmental survey was developed and administered in the Fall of 2022 to collect information from the DEEH faculty on general instructional concerns and specific questions related to the BPH, MPH-EPI, MPH-EH, and PhD programs in the Department. The overall response rate on the survey was 54% (13/24 faculty), which perhaps at some level reflects the faculty most concerned with the several educational programs. There are a number of faculty who have a limited instructional DOE and may have chosen not to respond. The question by question results of the survey are not contained in this document but are available upon request and the survey questions are given in Appendix 3.

Briefly, we summarize a few of the key findings from the survey:

Faculty resources and time. Perhaps much like most self-study reports, there is a strong sense that the faculty are overcommitted and stretched with regard to their instructional effort, given their respective differing distributions of effort to instruction on the DOE. It is well understood that teaching does not carry the same financial remuneration as acquiring grants, which tend to influence salaries and provide opportunities for Wethington awards. The survey indicates that 43% of the DEEH faculty contribute 6-10 hours per week for instruction, although 28% devote 10 or more hours per week. There is substantial variation of instructional effort for faculty, reflecting both title series and grant support. This also poses challenges for continuity of course instruction, especially for several core courses in the MPH program.

There is no cap on the total amount of research funding effort so faculty may “buy out” their obligation from teaching courses. This, in turn, often limits the time that many regular title tenured faculty can devote to instruction. One option often discussed is placing a cap on the research allocation of 80% for tenured faculty so that they can contribute to the instructional programs. In fact, we have a significant number of tenured faculty, particularly at the full professor level, who provide few formal classes due to administrative and research obligations. One strategy being frequently employed is to use the Special Title series to create opportunities for instructional faculty; however, this does limit student exposure to the breadth of faculty experience and research.

MPH Program. The MPH-Epi academic program is the longest running program in the Department and the one which is most familiar to the majority of the faculty. The MPH capstone requirement is one of the most often discussed issues among the teaching faculty. There is a recognition among faculty that the expectations of the requirements of the traditional databased capstone are not in accord with the training currently provided as part of the MPH with a single biostatistics course and no requirement for statistical programming, although the SAS course is highly recommended and a SAS workshop has been offered in the Fall of 2022. Most of our regular titled and tenured faculty serve on capstone committees. Typically, a faculty member may chair 2 committees and serve as a member on 1-3 other committees. The level of commitment to this work is roughly reflected by the DOE distribution of instructional effort, although we have several faculty with very low allocated instructional effort who serve on multiple committees.

BPH program. The survey indicated that faculty are fairly divided in their enthusiasm for expanding the BPH program. While faculty recognize the income generating potential of the undergraduate degree program, there

are concerns regarding the “quality of the program”, the suitability of the degree program as an entrée to the master’s programs, and the additional effort that may be needed from faculty to expand elective offerings in this program. Based on survey results, there is greater enthusiasm for expanding the 4+1 program in epidemiology.

EH MPH. There is a strong sense that we do not have an adequate number not adequate faculty breadth of experience (assistant, associate, and full professor levels) to cover all of the degree program offerings currently in the DEEH. This is particularly acute for the EH MPH concentration. Only 5 faculty who completed the survey indicated that they contributed to the MPH-EH program. Efforts are being made to hire in this specialty. Although Dr. Haynes has strong credential in this area and was hired to expand this emphasis, she has not yet offered a course in the program and we have been relatively slow to fill faculty positions in this area. In addition, we have lost several faculty (Sanderson, Spengler, Johnson) through relocation and retirement. The relative faculty gains and losses over the past five years have kept the total numbers of faculty fairly constant, but nearly 40% of faculty disagree that the “current roster of faculty is sufficient for supporting our instructional needs”. To quote a faculty survey respondent below:

The current EH program does not provide training in the traditional EH disciplines such as IH, environmental air and water quality, hazardous waste, sanitation, instrumentation and measurement for exposure assessment. It needs to be remarked and branded for what it does have to offer.

PHD program. The survey data indicate a strong commitment by many faculty to the PhD program. There is the recognition of ongoing challenges of supporting students in this program and there are a small number of tenured faculty having more than 2 PhD students who they are chairing or supporting. Most of the graduate faculty in this program are also serving on multiple doctoral student committees, although the departmental model usually places the bulk of the work load effort on the Chair of the committee. There were comments on the surveys encouraging expansion of the teaching roles of our PhD students, especially with regard to the undergraduate programs.

Revised DrPH. The enthusiasm for expanding to additional academic programs is mixed, with the majority of current faculty indicating unfamiliarity with the details of a “revising the DrPH”. Support appears stronger for a general and online DrPH to which department faculty contribute existing courses or electives. Among some of our faculty, there is recognition of an opportunity with “rethinking the DrPH” as provided in the quote below from the survey:

We NEED to do this and if we don't, we will be missing an amazing opportunity to work with the practice community, as well as fill a void within the state for the offering. People are hungry for this degree. We have those within the practice community that want to co-teach. We can offer this and be a great spot for recruitment, especially with state funding to allow state employees to return to school. We have the desire, we have some increased resources, and the time is ripe for an overhaul of the DrPH program to be innovative and more progressive and in tune with practice.

OVERALL SUMMARY ISSUES ON EDUCATIONAL PROGRAMS.

1. **Faculty and student recruitment.** Actively focus on recruiting a diverse faculty and student body. Devote some discussion to succession planning and what gaps we need to fill in both research areas and senior leadership positions for the coming years.

- 2. Scope of academic programs to match faculty interests and resources.** Decide on the breadth and scope of academic programs we can offer with current resources, while considering class sizes and faculty preferences for program offerings. Almost certainly this includes expansion of our undergraduate offerings for classes of sufficiently large size. This needs to include further discussion of our role with online and remote offerings, as well as whether and how to contribute to ongoing college-level visioning about potential new or re-invigorated academic programs. Department administration has conducted a preliminary needs assessment to identify gaps that currently constrain our ability to support such programmatic growth, as well as providing an initial pathway for filling those gaps in ways that may enable future growth. This work is intended to inform faculty recruitment and programmatic decision-making.

Benchmarking can be useful, but it also is critical to recognize the uniqueness of individual departments and invest in the strength of individual niches that complement the local and regional uniqueness of academic programs. In the foreseeable future, we are not likely to obtain the combination of funding, expertise, and other resources to focus on global health issues to the extent that Johns Hopkins or the University of North Carolina do. However, they cannot adequately understand and address unique aspects of the health of Appalachian populations and rural farmers, nor do they have context-rich knowledge and place-based networks to address the drug use epidemic in Kentucky.

It is worth noting that CEPH accreditation changes in recent years have had impacts on both MPH concentrations within the department. For the MPH-Epi, this has included a need to re-examine the goals and processes involved in the replacement of a longstanding capstone with the new Integrative Learning Experience (ILE). For the MPH-EH, CEPH changes have contributed to a reduction in the overall footprint of environmental health across the entire program, as well as the departure of faculty who formerly played leadership roles within the concentration. These challenges are not unique to the University of Kentucky but do require additional consideration in terms of future directions. For example, with the new MS-Epi program offering, the faculty may wish to re-imagine the ILE in ways that enhance practice-relevant components while reducing faculty burden. MPH-EH faculty may wish to consider revising concentration competencies to align with current offerings, capacity, and expertise, as the University of North Carolina-Chapel Hill has done through its MPH in “Environmental Health Solutions”. With the current faculty search under way, it is possible that the number of Regular Title Series environmental health faculty could more than double before start of the Fall 2023 semester, which would change the landscape for the MPH-EH. All of these issues will require deliberations by respective concentration faculty and achieving consensus moving forward. To this end, department administration is planning an academic program retreat following completion of the self-study in order to advance the conversation and begin making critical decisions.

- 3. Data systems and tracking.** Support and advocate for improving the data systems in the College which track students from admission to graduation and continue with the tracking of our alumni.
- 4. Other Educational Programs for revenue and CE.** Explore opportunities for creative continuing education offerings, such as summer programs, CE for the workforce, etc. Further invest and formalize relationships with local, state, and national entities to assist us in developing education and training that meets public health needs.

Table Ax. Current distribution (2023) of faculty contribution with academic programs.

Column1	Faculty Name	Status	Rank	Title	Teaches in PhD Program	Teaches in Master Program (MPH)	Teaches in Undergraduate	Capstone Mentoring MPH	PHD Committee	DOE effort for instruction 2022
Tenured										
1	Abner, Erin	F	Professor	Regular	X	X		X	X	18%
2	Browning, Steve	F	Associate	Special Title	X	X		X	X	32%
3	Christian, Jay	F	Associate	Regular		X	X	X	X	26%
4	Haynes, Erin	F	Professor	Regular				X	X	1%
5	Kuhls, Krystal	F	Associate	Regular	X					1%
6	Prince, Scott	F	Professor	Clinical		X				25%
7	Tucker, Thomas	F	Professor	Special Title				X		
8	Young, April	F	Professor	Regular		X	X	X	X	12%
Tenure Eligible										
9	Hoover, Anna	F	Asst	Regular		X	X	X		25%
10	Kucharska - Newton, Anna	F	Associate	Regular	X	X		X	X	27%
11	Leigh, Mary Lacy	F	Asst	Regular	X	X		X	X	5%
12	McWhorter, Ketrell	F	Asst	Special Title		X	X			75%
13	Tumlin, Kimberly	F	Asst	Regular		X		X		14%
14	Vickers-Smith, Rachel	F	Asst	Regular	X			X	X	11%
Not Tenure Eligible										
15	Aslibekyan, Stella	PT	Associate	Lecturer						
16	Brown, Sabrina	F	Associate	Research				X		
17	Bunn, Terry	F	Full	Research				X		
18	Cambron, Janie	F	Asst	Lecturer						15%
19	Choate, Radmila	F	Asst	Research						
20	McDowell, Jaclyn	F	Asst	Research			X	X		
21	Fulk, Florence	PT	Asst	Lecturer		X		X		
22	Vollet-Martin, Kaitlin	PT	Asst	Lecturer						
23	Winter, Kathleen	PT	Asst	Clinical		X		X	X	15%
Post-Retirement										

23	Fleming, Steve	PT	Full	Regular	X	X	
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Section 2. Departmental Structure, Faculty, and Budget.

DEPARTMENTAL STRUCTURE AND ORGANIZATION.

Dr. Erin Haynes is the current Chair of the DEEH. Dr. Haynes began her role in 2018, following on her previous appointment at the University of Cincinnati. She was recruited into the position by Dean Donna Arnett and assumed the role of Chair for both the Epidemiology Department and the Preventive Medicine and Environmental Health Department. As a faculty member with expertise in environmental health and community-focused environmental epidemiology, her recruitment was undertaken to provide leadership and strengthen the respective departments, particularly in this area.

Currently, a substantial effort is underway to recruit faculty, in particular those with an environmental health or environmental epidemiology focus, to the DEEH. The Chairs of the Search Committee for this effort are Dr. Thomas Tucker and Dr. Anna Hoover. In total, we are considering 4-6 new faculty positions to increase our expertise in these areas. A number of successful junior faculty who have held notable post-doctoral positions have been identified and indicate an interest in the positions. It is notable that they will likely not be able to contribute to the teaching mission of the DEEH for several years, as new faculty are typically provided at least a one-year waiver of these obligations.

Dr. Haynes undertook an effort to develop a Center for the Environment to create a university wide Center to recognize and support environmental health research on the campus. Although the center was approved, to date limited funds have been made available to support this Center and grow its operation. Substantial effort has been made in the development of the departmental seminars and in bringing notable speakers to the College, particularly in the environmental health and epidemiology disciplines. Further, a focus on supporting junior faculty through established mentoring teams has been given increased attention. Finally, a fairly sizeable effort was undertaken by the departmental AA, the departmental manager, and Chair, to enhance the working environment of the offices through a thorough cleaning, organization, and painting effort of offices, which primarily occurred during the summer of 2022.

Overall the past several years, the Department of Epidemiology, prior to the merger, has been relatively stable with regard to the number of full-time faculty with primary appointments. Efforts have been made for faculty recruitment for several positions. Dr. Ketrill McWhorter was recruited to the Department in 2021 in a Special Title Position in order to enhance teaching needs for both the undergraduate and the master's level. Dr. Krystal Kuhls was recruited to the Department of Epidemiology (now DEEH) as a cancer epidemiologist at the associate professor level. Despite several attempts, we have been unable to recruit a faculty position, at the associate level or higher, which could serve to fill a needed role as an associate director at the Kentucky Injury Prevention and Research Center. Despite offers to two well qualified individuals, this has been a failed search and has been placed on hold.

Several faculty have received tenure (Christian) or have been promoted with rank (Abner, Kuhls, and Young) within the past two years.

The Department of Preventive Medicine and Environmental Health (PMEH), prior to the merger in 2022, has experienced some notable faculty losses as well as program losses. Dr. Nancy Johnson had her position terminated in 2018; she had previously held an active role in EH, particularly with the undergraduate program. Dr. Susan Spengler, a physician who served as one of the primary faculty for the occupational medicine

residency program, retired in June 2022, following on the heels of the closing of the occupational residency program and the transfer of the preventive medicine residency program to Family Medicine in the College of Medicine. Dr. Kimberly Tumlin transferred her faculty position to the Department of Epidemiology in 2019. Dr. Timothy (Scott) Prince, who previously served as the Chair of PMEHE is primarily in a clinical role and has limited commitment to the academic programs and other missions of the Department. As mentioned in the section on education, PMEHE did have responsibility for both the MPH degree in environmental health and the occupational and preventive medicine residency programs. The MPH-EH degree currently admits about 4 students per year and the residency programs have been closed. It is worthy of mention that several of the faculty who were most strongly engaged in these academic programs were not consulted or engaged in the discussions to close the residency programs and view this as a substantial loss to the College.

These and other faculty departures from PMEHE in the decade prior to departmental consolidation reduced available resources and expertise for leading courses related to risk assessment, field sampling, and industrial hygiene. Faculty recruitment efforts are under way to fill these gaps, with an eye toward complementing existing BPH offerings with new, redesigned, and shared multidisciplinary courses that would support National Environmental Health, Science and Protection Accreditation Council (NEHSPAC) accreditation at the BPH level. Curriculum needs to achieve NEHSPAC accreditation are outlined in Appendix 7.

It is notable some transitions also have occurred among Epidemiology faculty including Dr. Sanderson, former Chair of Epidemiology and Interim Dean of the College of Public Health, who transferred his faculty position to the College of Agriculture and who relocated two primary research centers ---the Southeast Center for Injury Prevention and Research (SCAHIP) and the Central Appalachian Research and Education Center (CARERC) --to the College of Agriculture. Dr. Steve Fleming, a longtime member of our faculty and a founding member of the Department of Epidemiology retired in 2021. In addition, Dr. Kathleen Winter, now state epidemiologist in Kentucky, assumed a clinical title appointment, with her primary distribution of effort now in the Cabinet for Health Services in Frankfort. Dr. Anna Kucharska-Newton, who had a joint appointment with the University of Kentucky and the University of North Carolina at Chapel Hill recently adjusted her allocation of effort to continue at 10% effort in her current position in the DEEH. Dr. Tomi Akinyemiju left the Department of Epidemiology to pursue a faculty position at Duke University in 2018. The DEEH needs developing an adequate succession plan and further needs to consider additional hires at the Associate or Full Professor level.

The administrative staff support in the DEEH has been somewhat of a challenge. Ms. Bonnie Gay served as the initial administrative assistant for Dr. Haynes in the Department of Epidemiology but transferred to a new position in the Business Office after about one year. Ms. Angie Fogel accepted the position of Departmental Manager and stayed in the position for approximately one year before leaving for a similar role in the College of Agriculture. Ms. Deana Bellis has been the consistent stalwart staff administrator of both departments and demonstrated her professionalism and loyalty through numerous challenging changes and needed projects within the Department.

There is little question that the current DEEH has been moving through a most challenging period in the history of our College, within the backdrop of a hugely challenging period within the country and world. The shift to remote work for our academic programs and research endeavors has been hugely disruptive and challenging and the WFH movement has changed substantially the manner in which work is transacted. There have been notable successes with these changes and the recognition that a fully online approach does not work well for some types of students as well as faculty and staff. There are challenges for many faculty in feeling a connection to the Department and College and it is perhaps fair to say that a substantial number pursue the work for which they are "funded" and obligated while there has been a loss of some of the benefits of the

traditional in-office environment interactions and comradery. Culture can be difficult to maintain when all are working remotely. The leadership of the College has not been clear in defining how best to undertake the “hybrid” approach which is perhaps the favorite option of the majority of faculty and staff. Clearly, there still are inequities regarding personal choice and decisions on how best to structure the work day.

Our Department is led by a Chair (Dr. Erin Haynes) and a recently appointed (November 1, 2022) Vice Chair of Education (Dr. Anna Hoover). Our Department typically is supported by two full-time staff members: a Department Operations Manager and an Administrative Assistant; however, the Department Operations Manager position has been absent since December 2022, with an active search under way to fill it.

As of January 03, 2023, the department has 21 faculty members at various ranks: Professor (n=5), Associate professor (n=6), Assistant Professor (n=9), and Instructor (n=1). These ranks fill various title series including Regular Title (n=12), Research Title (n=3), Clinical Title (n=2), Special Title (n=3), Part-time (n=3), and Post-Retirement (n=1). Of the Regular Title faculty, four (4) are on tenure-track and five (5) are tenured. The majority of faculty (76%) are White, Non-Hispanic Female (n=16). Increasing faculty diversity is a top priority for the department.

The University’s faculty Distribution of Effort (DOE) is part of our performance evaluation process and is negotiated annually or as needed to reflect changes in faculty instruction, research, service, and administrative activities. EEH faculty have very diverse DOEs.

Our full-time faculty have a range of effort for instruction. Our Research Title series faculty are not expected to teach and their DOEs for instruction range from 0-1%. This 1% comprises of guest lectures and/or student mentoring. Our two Clinical Title series faculty have 15% for teaching which equates to approximately one course each and time for student mentoring and engagement. Our Special Title Series faculty have teaching effort ranging from 25-75% this includes a range of 17-60% for courses and the remainder (0-18%) for mentoring students. Our Regular Title series faculty had effort for instruction ranging from 1-27%. The two with (1%) for instruction are due to a) high level administrative positions and federal research funding and b) high level of research funding. It should be noted that the latter faculty member will be teaching this academic year. Our faculty have a total of 312% effort for instruction of which 206% is ear-marked for courses. Part-time faculty served as instructors for four 3-credit hour courses.

The instructional work of the department includes several faculty members outside of the College of Public Health:

Florence Fulk, PhD: Undergraduate and Graduate Education

Stella Aslibekyan, PhD: Graduate Education

Jacelyn McDowell, DrPH: Undergraduate Education

Time to tenure and promotion.

Our Regular Title and Special Title Series Faculty follow the University’s timeline for tenure and promotion. The University requires a 2- and 4-year review of each faculty member. Feedback is solicited regarding progress towards promotion and tenure by the chair from faculty at or above the tenure eligible faculty member’s rank. A summary letter of the feedback is provided to the faculty member and the Dean.

EARLY-STAGE FACULTY MENTORING

Our Department requires all early early-stage faculty to have a mentoring committee (**Table 2-1**). It is recommended that the committee be comprised of at least three mid-career to senior career faculty members with at least one of the members from within the department who has experience going through the APT process. The committee must be approved by the Department Chair. It is strongly encouraged that the mentee meets with the mentoring committee 2-3 times/per year to review milestones and discuss any challenges or obstacles. In addition to the mentoring committee, Dr. Haynes meets monthly with each tenure-track early career faculty and quarterly with each non-tenure track faculty to ensure that progress is being made and to help navigate any issues they experience.

Table 2-1. DEEH Faculty Mentoring: Participation on Mentoring Committees by Senior Faculty

Mentees	Senior Faculty					
	Haynes	Tucker	Abner	Young	Bunn	Browning
Lacy		X	X			
Tumlin		X				X
McWhorter			X			X
Vickers-Smith			X	X		
Hoover	X	X				
Choate			X			X
Cambron	X					
Winter			X			
Christian*		X				X
Kuhs*		X				

*Promoted to Associate Professor with tenure in July 2022

Plan for new faculty recruiting

Due to the merger of the two departments, we have support from the Dean to recruit six new faculty. These faculty will be critical to the re-build of the environmental health research and training program. A search committee has been formed and is actively recruiting and interviewing candidates. In addition to filling teaching and research expertise gaps related to PMEH faculty retirements and departures, these new faculty will be critical to growing enrollments in existing programs and supporting the development of new initiatives, including potentially seeking NEHSPAC accreditation for an environmental health track in the BPH program as well as supporting environmental health training for a future proposed generalist DrPH degree within the college.

Staff

The department has numerous staff (n=52) to assist with faculty research grants and state contracts. Ms. Susan Westneat is a data analyst who has been at the University of Kentucky for more than 30 years and has worked with several of the research centers including the Southeast Center for Agricultural Health and Injury Prevention as well as the Central Appalachian Research and Education Center. In addition, she provides support for student capstone projects in the MPH program and has provided some instruction in the capstone (CPH 605) course. Currently, she is supported on grants from CPH, the College of Nursing, and the College of Medicine. Most staff supported by the department work in Frankfort at the Kentucky Department for Public Health. Others are located within the communities where our faculty have targeted research, including areas of eastern Ohio, eastern Kentucky, and Indiana/Illinois. Three staff members are Hispanic/Latinx, seven are Asian, nine are male. Thus, our staff are predominantly Non-Hispanic, White females.

Post Doctorate

The department has one post doctorate working on funded research in the Haynes lab. In addition, there are several postdoctoral researchers working with Drs. Abner and Browning in associated research centers.

Staff development

We offer professional development training to all UK employees. These trainings are experiential opportunities to strengthen job performance, build leadership capabilities, and grow personally and professionally throughout your tenure at the university. This is one way our training team develops and retains the University's talent.

We offer technology and software training to all UK employees. Guided by an instructor, you'll get hands-on practice to learn new digital skills. All training experiences are designed to enhance the contributions technological advancements make to your work, your department and the University, to show you strategies and solutions for doing your job more successfully, to enable you to meet and engage with colleagues, and to provide ways to assist you as you advance professionally.

<https://www.uky.edu/hr/training>

BUDGET.

The Department's budget has grown over the last 4 years from 3.4M in 2018 to 4M in 2022. This increase is attributed to enrichment and startup funds allocated from the university. The state appropriation has remained fairly constant over the last 5 years while our grants and contracts have increased from 2.4M in 2018 to 4M in 2021 and 3.1M in 2022.

Student support is a major expenditure for our department. This demonstrates our commitment to our students. The funding allocated to students has decreased since 2018, but this is reflective of the decline in student enrollment (section XX).

	2018	2019	2020	2021	2022
Source of Funds					
State Appropriation	\$ 1,498,890	\$ 1,659,510	\$ 1,429,086	\$ 1,322,815	\$ 1,473,079
Grants/Contracts	\$ 2,449,544	\$ 2,755,634	\$ 2,873,970	\$ 4,078,940	\$ 3,187,137
Indirect Cost Recovery (Enrichment)	\$ 60,718	\$ 89,969	\$ 102,948	\$ 111,070	\$ 164,675
Endowment	\$ 13,747	\$ 14,042	\$ 14,210	\$ 14,376	\$ 14,732
Gifts	\$ 5,845	\$ 1,820	\$ 1,570	\$ -	\$ 350
Start Up Funds (from Univ)	\$ 94,342	\$ 808,864	\$ 26,430	\$ 24,990	\$ 29,658
Misc. Revenue	\$ 2,574	\$ 3,130	\$ 1,530	\$ 770	\$ 2,595
Total	\$ 4,125,661	\$ 5,332,969	\$ 4,449,743	\$ 5,552,961	\$ 4,872,226
Expenditures					
Faculty Salaries & Benefits	\$ 1,677,724	\$ 1,576,359	\$ 1,772,236	\$ 1,525,557	\$ 1,867,757
Staff Salaries & Benefits	\$ 716,558	\$ 864,279	\$ 1,025,863	\$ 1,739,429	\$ 1,096,788
Operations	\$ 544,589	\$ 625,021	\$ 973,971	\$ 971,703	\$ 943,870
Travel	\$ 90,329	\$ 70,835	\$ 68,505	\$ 27,193	\$ 44,828
Student Support	\$ 408,036	\$ 505,420	\$ 177,811	\$ 293,515	\$ 136,897
Total	\$ 3,437,236	\$ 3,641,914	\$ 4,018,386	\$ 4,557,396	\$ 4,090,140

Funds flow into the College and Department are based on three UK Budget models: Net Tuition Revenue (NTR), College Productivity Model (CPM), and Performance Funding Allocation (PFA). It is important to note that the College Base Reallocation is 7.5M and that that CPH obtains 70% of these funds through the PFA and 30% from CPM. As the department looks to the future, we need to consider the university's funding models – specifically the NTR model – as this is our biggest opportunity to secure additional revenue for the department. As we consider this model, it is important to consider the return for programs (table x).

Category	Special	Online	Graduate	Undergraduate
Share with College	60%	60%	40%	40%
Description	Net tuition from students in approved international programs, or designated as Project Graduate	Net tuition from students enrolled in a fully online degree or certificate program (undergraduate and graduate students)	Net tuition from graduate students	Net tuition from undergraduate students

WORK LIFE SURVEY RESULTS.

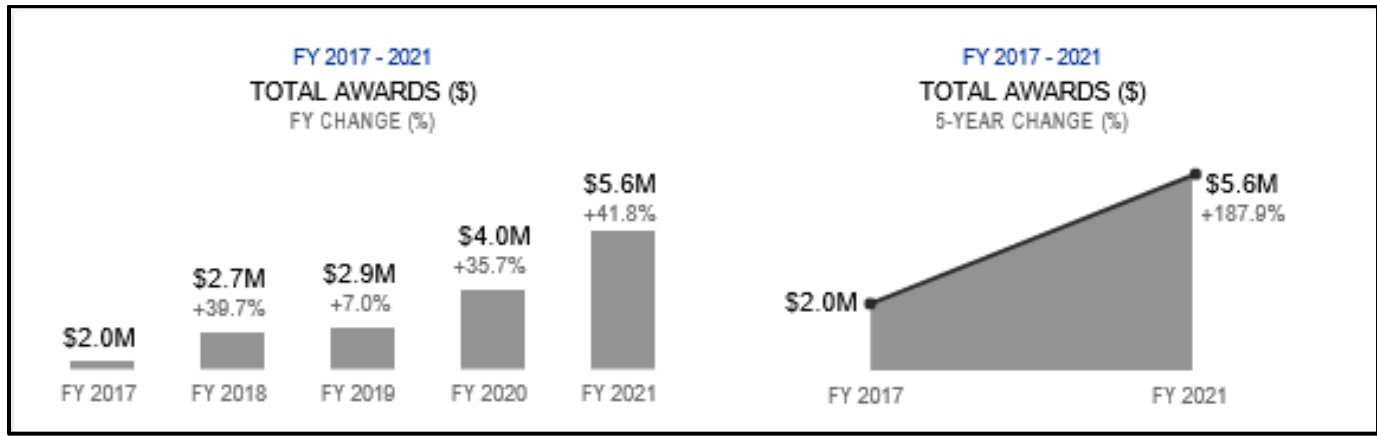
In 2021 the University conducted a Work Life Survey. The top and bottom 5 questions are provided in Table 2-2. The survey was completed by a total of 25 individuals: faculty (n=14) and staff (n=11) (64% response rate). It is clear that our Department enjoys its working relationships with colleagues. The issues are also clear: understaffing of the department and work stress. The Department during this time had one Administrative Assistant who left the position for a grant's management role.

Top 5 Questions	Total Favorable
Working Relationships: My colleagues / the people I work with are willing to help each other, even if it means doing something outside their usual activities.	100
Working Relationships: People in my department treat each other with respect.	96
Sustainable Engagement: My department colleagues usually get along well together.	96
Supervision: My Department Chair/Director/Supervisor: Treats me with respect	92
Sustainable Engagement: I am proud to be associated with UK.	92
Bottom 5 Questions	
Stress, Balance, & Workload: There is usually sufficient staffing in my department to handle the workload.	24
Empowerment: UK has established a climate where people can challenge our traditional ways of doing things.	36
Career Development: I think the University is doing a good job of retaining its most talented employees.	36
Stress, Balance, & Workload: The amount of stress I experience at work significantly reduces my effectiveness. (N)	40
Sustainable Engagement: I am able to sustain the level of energy I need throughout the work day.	44

Section 3. Research Section.

The Department of Epidemiology and Environmental Health has a robust research portfolio. Grants and contracts awarded to faculty members in the Department have more than doubled from 2.0M in 2017 to 5.6 M in 2021 (**Figure 3-1**). The Department has the highest level of extramural research funding in the College. The Kentucky Injury Prevention Research Center (KIPRC) whose faculty are closely tied to the Department is also the highest funded Center located within the College.

Figure 3-1 DEEH Research Funding.



The sources of these extramural research funds are shown in **table 3-1**.

Table 3-1 Sources of Extramural Funds in the DEEH.

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Federal Government	\$1,664,848	\$2,412,125	\$2,274,753	\$3,294,880	\$3,765,581
State Government	\$181,347	\$57,992	\$11,000	\$11,000	\$1,167,878
Nonprofit		\$164,000	\$213,832	\$255,848	\$242,578
Other	\$107,804	\$96,283	\$422,819	\$405,017	\$450,041
Total	\$1,953,999	\$2,730,400	\$2,922,404	\$3,966,745	\$5,626,078

While the improvements in research productivity are impressive, they underrepresent the actual research productivity of the department. The University of Kentucky is one of only six land grant universities to have an NIH funded aging center, an NIH designated cancer center and an NIH funded CTSA all on the same campus. A number of Epidemiology and Environmental Health faculty are actively engaged with these centers and other centers on campus that are outside the College. These centers provide the faculty valuable opportunities to participate in cutting edge research. Unfortunately, some of the grant, cooperative agreement and contract funding associated with faculty who are engaged with these centers is not captured by the College and is thus not reflected in the above information. In the future, being able to correctly capture this information will be important.

AREAS OF RESEARCH EMPHASIS

The research interests of the Department faculty are very eclectic. The general areas of research in which members of the faculty are actively engaged include cancer, aging, opioid dependence, heart disease, environmental health, and violence. While this list is not all inclusive, these areas do represent opportunities for growth.

Needs and opportunities

Kentucky is a state with many health challenges. The state has high rates of poverty and low educational attainment and these issues are especially acute in the Appalachian area of the state. Kentucky also has the highest cancer incidence and mortality rates in the country compared to all other states, an opioid epidemic, high rates of obesity, and unique environmental challenges. Again, this list is not complete. But it is important to note that the health issues in the Commonwealth are many. These many health related issues have led to a very diverse research portfolio among the Department faculty. Yet, there is not significant depth in any of these areas. In the future, it will be important for the Department to focus on specific areas and recruit new faculty that complement and enhance our research capabilities in these areas of focus. It will also be important to link both new and existing faculty with the well-developed centers at the University. Most science today is team science. Being linked with one of the centers helps a faculty member focus their research, provides valuable collaborators, and significantly increases the probability of funding. A list of faculty and the research activities in which they are currently engaged as captured by the College are in appendix X. However, it is important to note that this list is not complete.

Research Productivity

Linking existing regular, special or research title faculty member with appropriate centers and collaborators as stated above continues to be a valuable way to help improve research productivity. In an effort to support early career faculty and help them secure extramural funding, the Department has worked with each early career faculty member to establish a mentoring committee. It remains the responsibility of the individual faculty member to organize and schedule meetings of their mentoring committee. As a result, the frequency of the meetings and the content of the meetings can vary substantially. The best and likely most productive mentoring committees are those that meet at least quarterly. During these meetings the faculty member provides a current copy of their CV and updates of their progress. This allows the members of their committee to make recommendations, connect the faculty member with specific collaborators both inside and outside the University, review grant proposals or specific aims for a grant, and evaluate the faculty members progress toward promotion and tenure. When this process is fully implemented, it has proven to be an effective way to increase research productivity.

Research Opportunities for Students

The Department provides masters and doctoral level students the opportunity to actively participate in research. The graduate students that have participated in research are frequently graduate research assistants. The many funded projects requiring research assistants have provided a wide variety of opportunities for students. Graduate students are also required to conduct their own research project as part of their Capstone or Dissertation and the results of these research projects are frequently published in peer reviewed journals.

DEPARTMENT RESEARCH RESOURCES

The Department is very fortunate to have a number of faculty who have considerable research experience and extramural funding. These tenured faculty include Dr. Haynes who focuses on environment health research, Dr. Tucker who focuses on cancer research, Dr. Browning who focuses on occupation and injury research, Dr. Abner who focuses on cognitive aging and dementia, Dr. Young who focuses on substance use disorder, Dr. Kucharska-Newton who focuses on heart disease and stroke, Dr. Christian who focuses cancer and geographic disparities, and Dr. Kuhs who focuses on cancer. Dr. Terry Bunn, Professor in the Research Title Series, focuses on injury prevention. These individuals are a valuable resource. They actively participate on mentoring committees, Chair Capstone and dissertation committees, direct graduate research assistants, and work with students to help them publish their individual research findings.

There are, however, some important resources that are missing. The College does not have a large enough system to support all faculty in the submission or monitoring of extramural funded projects. In fact, the faculty frequently note their frustration working to prepare, submit, and monitor research projects. This is a serious deficit. Because Colleges of Public Health have very diverse faculty and faculty research interests, it may not be possible for the needed support functions to be done effectively at the College level.

In the future it would be most productive if the DEEH were able to hire an individual who was knowledgeable about NIH grants, cooperative agreements and contract procedures and rules. This individual could help faculty with pre-award activities such as preparing budgets, gathering bio sketches, helping with formatting and helping with the actual submission thereby allowing the faculty member to focus on the science and writing the proposal. This same staff person could be responsible for monitoring all deliverables associated with each funded extramural project, queuing faculty when they had a deliverable deadline, and keeping track of the money spent for each project. This would allow the faculty member to focus on actually conducting the research projects. These activities have proven to not be possible at the College level, but in other centers and programs, these activities have proven to be invaluable. Establishing this position at the Department level could very likely be done and this would allow the Department to take research productivity to the next level.

Section 4. Service, Continuing Education, and Workforce Development.

According to the latest PHWins data, the public health workforce is predominately white, female, and over the age of forty. Although these data reflect primarily government public health workers, they mirror what we see in Kentucky and nationally in the public health workforce. More than ever, we need to recruit for, retain, and support our public health workforce. We need to find ways to incentivize students to choose a public health major, as well as find pipelines for students to have quality internships and careers in public health. This needs to start prior to college, in which we educate younger children about what public health is and how they see public health in everything that they do every single day. The earlier we can foster this type of excitement about public health and the impact that it has, the more chances we have of children understanding and appreciating public health and potentially choosing it as a career moving forward. We must strategically focus on recruitment of individuals, particularly non-white males, so that our workforce better mirrors the populations that we serve. This is also true for leadership at our College so that our students see the impact of those in leadership that look like them.

One area of focus should be quality internship and practicum experiences for students so that they have a direct pipeline to careers in public health. In terms of UKCPH, we have a diverse set of practicum placement sites, but they are predominately in governmental public health organizations, such as the Kentucky Department for Public Health (see practicum section above).

SERVICE, OUTREACH, AND CONTINUING EDUCATION.

The UKCPH Practice and Service Committee is led by Dr. Ketrrell McWhorter and supported by the Association Dean for Practice and Workforce Development, Janie Cambron, both faculty in the DEEH. Defining “service” has always been a challenge in the academic setting. There are differences in what “service” means to different people, even within the same department. There is a lack of data related to what service we are providing as part of our efforts unless it is a continuing education opportunity, which is mostly captured. If we clearly define what service means as a college, then we can better capture data, celebrate our successes, and also champion this culture within the college to be not only internally facing for service but also outward with and for the community. Additional staffing support is through Jon Gent in the Dean’s Office. The committee has completed an AIM statement and is working to clearly define, champion, and celebrate service within our college and beyond. Many of our faculty are committed to internal service, such as UK committees and boards, but there are also several faculty members who have outward service and linkage with our community partners, even nationally. An opportunity for improvement would be to better capture how this is being carried out and communicate success stories. The Association Dean for Practice and WFD is working on infrastructure building for a better process of reporting and celebrating service.

INTEGRATION WITH THE KENTUCKY DEPARTMENT FOR PUBLIC HEALTH.

A primary partner of UKCPH is the Kentucky Department for Public Health (KDPH). Our department collaborates with this organization on many levels, including the Building Epidemiological Capacity in Kentucky (BECKY) committee, internships, disaster response, and through our Centers, especially KIPRC, being a bonafide agent of KDPH. An opportunity for improvement that is underway is to collaborate with KDPH, CARERC, and CAFE/Extension for disaster response training teams for faculty, staff and students in our department, as well as extension agents in CAFE. This is planned growth for 2023. Another opportunity for growth is to highlight more EH careers and have pipeline placements for internships at KDPH and local health

departments. Local health departments have expressed extreme need when it comes to filling EH positions, and KDPH has also echoed their lack of applicants for open positions. An opportunity exists for UKCPH to work with local and state health partners to bring the Registered Sanitarian (RS) exam to our students. Having them prepped for this exam and a RS upon graduation will make them more marketable and will also help them enter the workplace sooner and potentially help fill gaps in unfilled positions. There is also funding at the federal and state level for these types of certifications.

Appendix 1. DEEH Self Study Guiding Questions.

EEH Self-Study Guiding Questions

Education

1. Compare our MPH-Epi and MPH-EH concentration *curriculum* and *concentration competencies* to comparison* and aspiring** schools
 - a. Provide recommendations on courses that would enhance our training of MPH-Epi and MPH-EH professionals.
 - b. Indicate which courses in our program are available online.
 - c. Include the CEPH requirements for both concentrations

*Benchmark/Comparison Schools: University of Indiana, Indianapolis; Oregon State, University of Iowa; University of Maryland

**Aspiring: Harvard TH Chan School of Public Health, University of Michigan SPH, Rollins SPH, Emory University

2. Compare our PhD curriculum with other* schools' PhD Epidemiology programs.
 - a. Provide recommendations on courses/training that would enhance our doctoral training program.
 - b. Provide a recommendation on our potential for building a PhD in Epidemiology.

*Other Schools for Comparison: University of North Carolina, Boston University, Mailman School of Public Health, Columbia; Rollins School of Public Health, Emory; Vanderbilt University

3. What workforce development needs should we consider for undergraduate training in epidemiology and environmental health?
 - a. Include a list of our undergraduate courses and if they are available online
 - b. Provide a recommendation for our expansion of the BPH program training provided by the department.
4. What workforce development training needs are in the existing public health workforce that we could develop new programming to meet this need?

Research

1. What is the research grant portfolio for our faculty, including amount and % funding from NIH, NSF, and contracts from CDC, and state/local health departments? Last year's data is all we need: 2021-2022
2. What research support do we need to consider as grow our faculty numbers?

Leadership

1. What resources, including staff support, can the department provide to support our research and education missions?

Appendix 2. DEEH Departmental Rules.

University of Kentucky College of Public Health DEPARTMENT OF EPIDEMIOLOGY AND ENVIRONMENTAL HEALTH RULES OF PROCEDURE

FUNCTION

The University of Kentucky Department of Epidemiology and Environmental Health is dedicated to excellence in research, teaching, and service. The mission of the Department is to engage with local, regional, state, national, and international partners and seek solutions that improve population health by:

- Advancing the understanding of population distributions, occurrence, and outcomes of diseases and environmental factors that influence health and well-being.
- Training public health champions in the field of epidemiology and environmental health through excellent undergraduate and graduate degree programs.
- Collaborating with local, regional, state, national, and international partners through engagement in research and technical assistance.

The Department will follow the [UK Office of Legal Counsel](#), [Administrative Regulations](#) and [Governing Regulations](#) for all governance processes.

FACULTY DEFINITION

1. The faculty of the Department of Epidemiology and Environmental Health is composed of:
 - a. Core faculty, those faculty members who hold a primary appointment in the Department in the following title series: regular title, special title, clinical title, or research title series;
 - b. Lecture Series;
 - c. Joint faculty, whose primary appointment is in another department;
 - d. Adjunct faculty;
 - e. Voluntary faculty, and
 - f. Emeritus faculty.
2. The structure of the department is such that the administrative leadership is vested in the Chair, and at the Chair's discretion a Vice Chair can be appointed. Department chairs will be reviewed periodically in accordance with GR 9:3.
3. Core faculty have full voting privileges within the Department.
4. Voting may be extended in three-year renewable terms to faculty in lecture series, joint, adjunct, voluntary, and emeritus appointments, by a majority vote of the faculty.
5. All faculty of the Department may also serve as full or associate members of the faculty of the University of Kentucky Graduate School, following the rules of appointment to that body.

6. Regular full-time faculty may be elected to serve on the University Senate as recommended to the Faculty Council in accordance with Senate Rule 1.2.2.1.B.

JOINT FACULTY APPOINTMENT PROCEDURES AND EXPECTATIONS

7. Those interested in a joint appointment will submit a letter to the Chair describing their interest in joining the Department.
8. Core faculty will review and vote on all requests for a joint appointment.
9. Expectations for participation as a joint faculty member include:
 - a. Providing class lectures and/or giving a seminar;
 - b. Serving on student committees; and/or
 - c. Providing research expertise via independent study.
10. Joint appointees will be invited to review their appointment by the Chair every three years.

VOLUNTEER FACULTY APPOINTMENT PROCEDURES AND EXPECTATIONS AR 2:10

FACULTY MEETINGS

The Chair or their designee will preside over all faculty meetings. All meetings will follow the established University policy on open meetings.

There will be regularly scheduled departmental faculty meetings. Special meetings may be called by the Chair as needed. An agenda will be made available prior to the meeting and items may be modified by faculty in attendance. Parliamentary procedure shall be in accordance with generally accepted procedures, relying upon Robert's Rules of Order, should there be differences as to procedure.

On routine issues an absolute majority vote of the voting members present is decisive.

The discussions at the faculty meeting should be free and uninhibited, with ample opportunity provided to express individual views.

Minutes will be taken, transcribed in the form of a statement which summarizes the discussion prompted by each agenda item. Minutes will be circulated to all members of the faculty prior to the following regularly scheduled meeting. The minutes should be approved at the next regularly scheduled meeting. Minutes will be kept on file in the Chair's administrative office.

COMMITTEES

All committees shall be constituted as committees of the whole unless the Chair appoints ad-hoc subcommittees for the purpose of addressing specific issues of a short-term nature. There shall be a variety of roles for the committee of the whole.

Recruitment and Selection of Faculty. [AR 3:5](#)

When there is a need to fill a faculty position, a Departmental committee will be involved in

the search and selection of new faculty.

Faculty Performance Review [AR 3:10](#)

The College of Public Health requires an annual faculty performance review and an updated CV for all faculty. The annual evaluations will be produced as required by the University's Governing Regulations. Faculty members' evaluations are submitted by the Chair to the College of Public Health Dean for approval. Evaluations are maintained in each faculty member's personnel file located in the Dean's office.

The Chair will solicit input from both untenured and tenured faculty for two- and four-year evaluation reviews. The Chair will perform the evaluation and sign after considering input from the faculty.

Faculty Procedures - Other Matters

The Department Chair is responsible for recommendations to the Dean on hiring, promotion, tenure, and termination of faculty. Procedures and criteria used in preparing recommendations shall include consultations with all tenured members of the department.

Faculty members shall be required to develop and complete a Distribution of Effort on an annual basis. The DOE form shall acknowledge each faculty member's activities in research, instruction (including chairing capstone or dissertation committees), administration, professional development and non-sponsored activities as related to their assigned appointment in the Department of Epidemiology. The DOE should closely correlate with the activities which contribute toward salary and be updated as needed.

Establishing Rules. Department Rules are written and submitted to the faculty for review and approval at regular faculty meeting. After approval the rules are placed in permanent record.

Modification of the Rules. Revisions are brought before the faculty in the same manner as the establishment of rules.

Governing and Administration Regulations. Rules of Procedure for departmental faculty are superseded by administrative and governing regulations of the institution.

LOCATION OF APPLICABLE DOCUMENTS

The following documents are located on the University of Kentucky and/or College of Public Health websites:

- a. Administrative and Governing Regulations
- b. University Senate Rules
- c. Graduate School Bulletin
- d. CPH Bylaws
- e. Personnel Policies and Procedures
- f. University of Kentucky Business Procedures Manual

Official faculty personnel files are housed in the CPH Dean's Office.

ACADEMIC MATTERS

University Senate Rules Section IV

Faculty are involved in academic matters on a regular basis, including but not limited to

advising doctoral and Master's students, revising and updating the curricula of the department, establishing class schedules, and overseeing appropriate evaluation of the courses they teach. These matters are introduced, discussed, and finalized as part of the regularly scheduled faculty meetings.

Senate Rules may be downloaded [HERE](#).

BUDGET PREPARATION

A budget for the department shall be prepared and established by the Chair in which defines the allocation of resources, limits on expenditures and management of the Department Budget. Budgets shall be prepared and submitted consistent with such format and specificity as established by the institution.

Interim modifications in established Department budgets shall be made in accordance with the rules established by the College of Public Health.

STUDENT PARTICIPATION

Students may participate in committees or subcommittees of the department faculty as needed on the recommendation of the Department Chair.

Approved:

Erin Haynes, DrPH, MS
Chair, Department of Epidemiology
and Environmental Health

Date

Heather M. Bush, PhD
Acting Dean, College of Public Health

Date

Robert DiPaola, MD
Provost

Date

Appendix 3. Programmatic Instruction: Faculty Survey 2022.

Department of Epidemiology and Environmental Health

Programmatic Instruction

Faculty Survey

The following survey was created to augment the self-study that the Department of Epidemiology and Environment Health Department is currently undertaking. Included questions are designed to provide information on faculty's views of the overall teaching mission of the College of Public Health and the Department, as well as your opinions regarding individual programs currently offered by the Department. Your response to this anonymous survey will be very helpful in identifying strengths and weaknesses of instruction that the Department currently provides. The survey is purposefully short; however, please take advantage of the options for comments to provide additional in-depth perspectives.

A. Overall instruction

1. Which of the following academic programs have you contributed effort to this past year as a formal instructor. (circle all that apply)
 - a. BPH
 - b. MPH-EPI
 - c. MPH-EH
 - d. PhD-EPB
 - e. None

2. Which of the following academic programs have you contributed effort to this past year as a faculty advisor or mentor. (circle all that apply)
 - a. BPH
 - b. MPH-EPI
 - c. MPH-EH
 - d. PhD-EPB
 - e. None

3. In a typical week, either during the Spring 2022 or Fall 2022 semester, how many hours do you contribute to instruction and or advising/mentoring?
 - a. None
 - b. 1-5
 - c. 6-10
 - d. 10-15
 - e. 16 or more

4. On how many capstone committees during Academic year 2021-2022?
 - a. As Chair _____

b. As committee member _____

5. On how many doctoral dissertation committees did you serve Academic Year 2021-2022

a. As Chair _____

b. As committee member _____

6. Please rank our degree programs with regard to your enthusiasm in committing your instructional time to:

	Not interested	Limited interest	Neutral	Moderate interest	Highly enthusiastic	Do not know
BPH	1	2	3	4	5	6
MPH-EPI						
MPH-EH						
PHD-EPB						
MS-EPI (in the future)						

Comments _____

B. The following questions pertain to the BPH program.

The College is considering significantly expanding enrollments in the BPH program. This may, in turn, lead to an increase in the MPH program as well.

1. Current EPI and EH courses offered as part of the BPH program are listed in Appendix 1 of this questionnaire. Do you think that the Epidemiology Faculty should offer additional courses in the BPH program?

- a. Yes
- b. No
- c. Not sure

2. Currently, the MPH program accepts 4-6 4+1 BPH students to Epidemiology and Environmental Health MPH concentration. What, in your opinion, should be the target number of students from the 4+1 program admitted to the Epidemiology and Environmental Health concentration? _____

C. The following questions pertain to the MPH-EPI (Epidemiology) program.

Current core EPI courses offered in the MPH program and the roster of faculty teaching those courses, are listed in Appendix 2.

7. The Department’s Epidemiology faculty roster is sufficient to accommodate the current MPH-EPI (Epidemiology) program objectives.

- a. Totally agree

- b. Agree
- c. No opinion
- d. Somewhat disagree
- e. Completely disagree

Comments _____

8. The MPH-EPI curriculum adequately prepares students for the public health workforce.

- f. Totally agree
- g. Agree
- h. No opinion
- i. Somewhat disagree
- j. Completely disagree

Comments: _____

9. Please rate the following aspects of the MPH-EPI program?

	Very Poor	Poor	Fair	Good	Excellent	Do not know
Program advertising	1	2	3	4	5	
Admission process						
Student mentoring						
Epidemiology course offerings						
Biostatistics course offerings						
Elective offerings						
Statistical programming						
Practicum						
Capstone						
Other:						

Comments: _____

10. The ideal total number of MPH-EPI students to admit to our program each year given faculty resources should be: _____

11. A New MS program in Epidemiology should be approved by the end of the year. We will need to balance our commitment to the MPH with this new program.

What is the ideal number of MS students to admit based on our existing resources? _____

D. The following questions pertain to the MPH-EH (Environmental Health) concentration.

Current core EH courses offered in the MPH program and the roster of faculty teaching those courses, are listed in Appendix 2.

12. The Department’s Environmental Health faculty roster is sufficient to accommodate the current MPH-EH (Environmental Health) program objectives.

- k. Totally agree
- l. Agree
- m. No opinion
- n. Somewhat disagree
- o. Completely disagree

Comments _____

13. The MPH-EH curriculum adequately prepares students for the public health workforce.

- p. Totally agree
- q. Agree
- r. No opinion
- s. Somewhat disagree
- t. Completely disagree

Comments: _____

14. Please rate the following aspects of the MPH-EH program?

Aspect	Very Poor	Poor	Fair	Good	Excellent	Do not know
Program advertising	1	2	3	4	5	
Admission process						
Student mentoring						
Epidemiology course offerings						
Biostatistics course offerings						
Elective offerings						
Statistical programming						
Practicum						
Capstone						
Other:						

Comments: _____

15. The ideal total number of MPH-EH students to admit to our program each year given faculty resources should be: _____

E. The following questions pertain to the Epidemiology/Biostatistics PhD program (EPB)

Current core EPI courses offered in the EPB program and the roster of faculty teaching those courses, are listed in Appendix 3.

16. The PhD-EPB program is meeting the training and advising needs of our doctoral students:

- a. Totally agree
- b. Agree
- c. No opinion
- d. Somewhat disagree
- e. Completely disagree

Comments: _____

17. Please rate the following aspects of the PhD program?

	Very Poor	Poor	Fair	Good	Excellent	Do not know
Program advertising						
Admission process						
Student mentoring						
Epidemiology course offerings						
Biostatistics course offerings						
Elective offerings						
Comprehensive Exam						
Qualifying Exam						
Student financial support						
Overall student support						

Comments _____

18. Does the program have sufficient number of PhD students to serve as TAs supporting the MPH and BPH programs?

- a. Yes
- b. No
- c. Do not know

Comments _____

19. The ideal number of PhD students to admit to our program each year, given faculty resources should be:

Comments _____

20. Do you think the current program is well supported by the College Administration and the Graduate School?
- a. Yes
 - b. No
 - c. I do not currently have enough information to formulate an opinion

Comments _____

21. Do you think that a separate PhD program (Epidemiology only focus) is desirable (instead of the current joint program)?
- a. Yes
 - b. No
 - c. I do not currently have enough information to formulate an opinion

22. Please justify your response to Q.22

23. Do you think that a separate PhD program (Epidemiology only) is feasible with current resources?
- a. Yes
 - b. No
 - c. I do not currently have enough information to formulate an opinion

24. Please justify your response to Q.24

F. The College of Public Health is considering reinstating the DrPH program with the objective to enhance workforce training and to bring additional revenue to the college within the current university fiscal plans. The following questions seek your opinion regarding that proposal.

- G. Do you think that the College of Public Health should revise the DrPH program and reopen admissions?
- a. Yes
 - b. No
 - c. I would like to have more information to formulate an opinion
 - d. Do not know

Comments _____

H. If a revised DrPH program were to be created by the College should that be a:

- a. College wide program?
- b. Concentration specific program?
- c. I would like to have more information to formulate an opinion
- d. Do not know

Comments _____

G. Appendix:

1. List of EPI/EH courses offered at the BPH level

Faculty member	Course	
McDowell	310 DISEASE DETECTIVES: EPIDEMIOLOGY IN ACT	
Fleming	318 GLOBAL CANCER EPIDEMIOLOGY	
Fulk	320 FUNDAMENTALS OF ENVIRONMENTAL HEALTH	
Hoover	351 POPULATION HEALTH AND CRISIS MANAGEMENT	
McWhorter	476G A SICK WORLD: GLOBAL PUBLIC HEALTH	

2. List of EPI/EH core courses offered at the MPH level

Faculty member	Course	Concentration
Fulk	CPH601 Environmental Health	EH
Sanderson	CPH 620 Occupational Health	EH
Hoover	CPH 621 Understanding & Communicating Environmental Health Risk	EH
Prince	CPH 622 Toxic Agents & Their Implications in Public Health	EH
Young	CPH 608 Capstone	EPI/EH
Aslibekyan	605 Epidemiology	EPI
Lacy	712 Advanced Epidemiology	EPI
Kucharska Newton	711 Chronic Disease	EPI
Winter	612 Infectious Disease	EPI

Christian	660 Disease Mapping and Data Visualization	EPI
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3. List of EPI core courses offered at the PhD level

Faculty member	Course	Concentration
Browning	714 Study Design	EPB
Abner	715 Research Methods in Epidemiology and Biostatistics	EPB
Abner	• EPI 717 Causal Inference (3 credits)	EPB
Various	786 Doctoral Seminar	EPB

Appendix 4. EPB Program Graduate listing 2012-2022

	Student	Dissertation Title	Defense Date	Committee Members	Current Position
1	Tim Crawford	Evaluating Retention in Medical Care and its Impact on the Health Outcomes of Individuals Living with Human Immunodeficiency Virus	12/15/2012	Sanderson (C), Kryscio, Fleming, Breheny, Thornton	Asst Prof @ Wright State University
2	Erin Abner	Multistate Markov chains and their application to the biologically resilient adults in neurological studies cohort	7/26/2013	Kryscio (C), Fardo, Browning, Schmitt	Prof @ U of KY CPH
3	Hsin-Fang (Grace) Li	Data Mining and Pattern Discovery Using Exploratory and Visualization Methods for Large Multidimensional Datasets	12/20/2013	Bush (C), Charnigo, Kryscio, Ryan	Statistician @ Providence Center for Cardiovascular Analytics, Research and Data Science
4	Amanda Wiggins	The Psychological Impacts of False Positive Ovarian Cancer Screening Assessment via Mixed and Trajectory Modeling	11/22/2013	Sanderson (C), Androkowski, Charnigo, Van Meter, Browning, Loftin	Lecturer @ U of KY CoN
5	David Bardach	Evidence-Based Hospitals	02/05/2015	Sanderson (C), Charnigo, Browning, Real, Hankins	Senior Quantitative Researcher @ Amazon
6	Jing Guo	Developments in Nonparametric Regression Methods with Application to Raman Spectroscopy Analysis	03/11/2015	Charnigo (C), Huang, Srinivasan, Tucker, Molloy	Asst Prof @ Cal State Chico
7	Mike Singleton	Nonlinear Hierarchical Models for Longitudinal Experimental Infection Studies	03/31/2015	Breheny (C), Sanderson, Charnigo, Browning, Balasuriya, Chambers	Lead Biostatistician @ CorEvitas
8	Leonard Gordon	The Non-Steroidal Anti-Inflammatory Drugs-Myocardial Infarction Association: An Investigation of Kentucky Medicaid Prescription Claims	07/21/2015	Sanderson (C), Browning, Moga, Bush, Bailey, Adams	Senior Data Analyst @ MilliporeSigma
9	Xiuhua Ding	Modeling dementia risk and cognitive change in longitudinal studies	07/13/2016	Kryscio (C), Abner (C), Schmitt, Charnigo, Browning	Assoc Prof @ WKU
10	Catherine Starnes	Evaluating a Bystander Intervention Program on Reproductive Coercion: Using Quasi-Experimental Design	10/11/2016	Bush (C), Coker, Dressler, Browning,	Statistician @ Knowesis

		Strategies to Address Methodologic Issues in Randomized Community Prevention Trials		Stromberg	
11	Rachel Vickers-Smith	Exploration of the misuse, abuse, and diversion of gabapentin	11/30/2016	Havens (C) Young, Charnigo, Lofwall	Asst Prof @ U of KY CPH
12	Lava Timsina	Examining the activities, effectiveness, and contribution of local health departments using a national longitudinal survey of Public Health Systems	12/07/2016	Browning (C) Mays (C) Charnigo Wen	Senior Biostatistician @ IDDI
13	Frank Appiah	Mixture of Regression Models With Applications in Alzheimer's Disease	March 2007	Charnigo (C) Fardo (C) Mays Abner	
14	Sarah Morris	Methods for Determining Time to Return to Play After Recreational Injury in Field and Court Sport Athletes	April 14, 2017	Sanderson (C) Rayens (C) Browning Mattacola	Senior Biostatistician @ Syneos Health
15	Meng Liu	A Predictive Probability Interim Design for Phase II Clinical Trials with Continuous Endpoints	July 17, 2017	Dressler (C) Bush (C) Abner Weiss Mathew	Senior Manager @ AbbVie
16	Yuriko Katsumata	Statistical Analyses To Detect And Refine Genetic Associations With Neurodegenerative Diseases	11/06/2017	Fardo (C), Kryscio, Abner, Nelson, Mudd	Asst Prof @ U of KY CPH
17	Josh Lambert	An Exploratory Statistical Method for Finding Interactions in a Large Dataset with an Application Toward Periodontal Diseases	November 17, 2017	Bush (C), Stromberg, Wang, Young	Asst Prof @ U of Cincinnati
18	Donglin Yan	"Bivariate Generalization of the Time-to-Event Conditional Reassessment Method with a Novel Adaptive Randomization Method"	1/29/2018	Dressler (C) , Bush, Abner, Saed	Asst Prof @ U of KY CoM
19	I Chen Chen	Improved Methods and Selecting Classification Types for Time-Dependent Covariates in the Marginal Analysis of Longitudinal Data	4/11/2018	Westgate ©, Fardo©, Abner, Harrar	Statistician @ NIOSH
20	Whitney Ford	Improved Standard Error Estimation for Maintaining the Validities of Inference in Small Sample	November 13, 2018	Westgate ©, Fardo©, Abner, Shelton, Bardo	Senior Biostatistician II @ CATO SMS

		Cluster Randomized Trials and Longitudinal Studies			
21	Huong Luu	Using Prescription Drug Monitoring Data To Inform Population Level Analysis Of Opioid Analgesic Utilization	December 4, 2018	Slavova ©, Browning, ©, Bush, Freeman	
22	Radmila Choate	Estimating disease severity, symptom burden and health related behaviors in patients with chronic pulmonary diseases	March 19, 2019	Abner ©, Browning, Mannino, Westgate, Freeman	Asst Prof @ U of KY CPH
23	Ran Duan	Evaluate the Effects of Antidepressants on the Risk of Dementia	April 15, 2019	Abner ©, Kryscio, Chen, Moga, Murphy	Manager Biostatistician @ Gilead Sciences
24	Zhengyan Huang	Differential Abundance Analysis and Classification with Empirical Bayes Shrinkage Estimation of Variance (DASEV) for Proteomic and Metabolomic Data	April 18, 2019	Wang ©, Bush, Abner, Stromberg , Thompson	Biostatistician II @ Everest Clinical Research
25	GYeon Oh	Opioid Use in Vulnerable Populations	June 5, 2020	Moga ©, Fardo ©, Abner, Brouwer, Delcher	Postdoc @ U of KY SBCOA
26	Patrick Ward	Enhancing drug overdose mortality surveillance through natural language processing and machine learning	April 2021	Young ©, Slavova, Bush, Havens	Principal Scientist II @ Aetion
27	Courtney Walker	An Assessment of Kentucky Birth Records, Focusing on Early-Onset Hypertensive Disorders of Pregnancy, Environmental Metal Exposures, and Geocoding Precision, 2008-2017		Christian ©, Browning ©, Winter,	Postdoc @ U of KY CoM
28	Vira Pravosud	Sexual behaviors associated with online partner-seeking among men who have sex with men from small/midsized towns or rural areas in Kentucky	June 2021	Young ©,	Postdoc @ UCSF
29	Brian Kovacic	Evaluating the incidence of melanoma and lung cancer of current and former active-duty US military who were deployed in support of Operation Enduring Freedom and Operation Iraqi Freedom		Browning ©, Westgate ©, Sanderson, Ball	Postdoc @ Altria
30	Shama Karanth	Multiple proteinopathies and their role in cognitive impairment and neurodegenerative diseases	March 18, 2021	Abner ©, Fardo, Browning, Nelson	Postdoc @ U of Florida
31	John Flunker	Environmental respiratory exposures and pulmonary	April 29, 2021	Sanderson ©, Browning,	Postdoc @ U of Washington

		function among residents of rural Appalachia, Kentucky			
32	Adam Dugan	Investigations into the Genetics of Mixed Pathologies in Dementia	July 23, 2021	Fardo ©, Vsevolozhkaya ©, Abner, Nelson	Biostatistician @ 23andMe
33	Tofial Azam	Design and analyses of school-based violence prevention cluster randomized trials		Westgate ©, Bush,	Senior Research Statistician @ AbbVie
34	Jade Singleton	Addressing Ascertainment Bias in the Study of Cardiovascular Disease Burden in Opioid Use Disorders - Application of Natural Language Processing of Electronic Health Records	December 2021	Kucharska-Newton ©, Abner ©, Westgate, Akpunonu	Senior Data Analyst @ Seattle Children's Hospital
35	Feitong Lei	Opioid use disorder treatment with buprenorphine: analysis of treatment utilization and associated outcomes in Kentucky	October 2022	Slavova ©, Slade,	Postdoc @ U of KY CoP
36	Shaowli Kabir	A Novel Nonparametric Test for Heterogeneity Detection and Assessment of Fluid Removal Among CRRT Patients in ICU	April 2022	Charnigo ©, Abner, D. Young, Lacy, Neyra	Biostatistician @ MedPace
37	Ximena Oyarzun Gonzalez	Studies of polypharmacy and medication therapy management in population-based cohorts	December 2022	Abner ©, Moga ©, Fardo, Freeman, Kucharska-Newton	Postdoc @ Ohio State

Appendix 5. Questions for the MPH student focus group survey.

Focus Group Questions:

1. In general, do you prefer in-person, online, or hybrid MPH courses? Why? If you are taking an online course, do you prefer to enroll synchronously or asynchronously? Why? How do you learn differently in in-person versus online courses? What about synchronous online versus asynchronous? What kinds of courses, if any, are better suited for online than others and why? What kinds of courses are better suited for in-person and why? [**~12 minutes**]
2. How prepared have you felt for most of the graduate level courses that you are taking? How difficult have you found the courses to be based on your prior education and training? What if any gaps have you noticed – that is, in what areas do you wish you had known more when you started the MPH program? What redundancies have you found in the courses—especially if you have a prior public health degree such as the BPH? [**~12 minutes**]
3. How do the MPH core courses – the ones you are required to take outside of the concentration --- contribute to your overall knowledge and skillset as a future public health practitioner ? Which have been your favorites and why? Which ones could be improved and how? [**~9 minutes**]
4. How well does the capstone course and the overall framework for the development of the capstone meet your needs? Which, if any, areas of the capstone process could be improved ? What additional resources could better support your capstone development? [Probe: For example: would you benefit from access to data, additional faculty time, etc.] Do you feel that you have sufficient guidance from the faculty? [**~10 minutes**]
5. How has your practicum experience proven valuable for the degree and helped you fulfill competencies for your concentration? What, if any, challenges has your practicum experience created? [**~8 minutes**]
6. Can you share one or two changes that would improve your experience as a student in the College? [**~9 minutes**]
7. What are your current career plans or what career have you envisioned as you are completing the degree ? Who would you like to work for ?

The transcript from the focus groups may be obtained from the Self-Study Committee.

Appendix 6. Results of the MPH Capstone Survey.

10 cases completed MPH Capstone Survey as of 7_27_20

For each of the following types of capstone projects please indicate which you would consider acceptable for the MPH in Epidemiology:

Capstone: Literature Review

		Cumulative		Cumulative	
q1a	Frequency	Percent	Frequency	Percent	
No	5	50.00	5	50.00	ffff
Yes	3	30.00	8	80.00	ffff
Maybe	2	20.00	10	100.00	ffff

Capstone: Program Plan

		Cumulative		Cumulative	
q1b	Frequency	Percent	Frequency	Percent	
No	4	40.00	4	40.00	ffff
Yes	3	30.00	7	70.00	ffff
Maybe	3	30.00	10	100.00	ffff

Capstone: Program Evaluation

		Cumulative		Cumulative	
q1c	Frequency	Percent	Frequency	Percent	
No	2	20.00	2	20.00	ffff
Yes	6	60.00	8	80.00	ffff
Maybe	2	20.00	10	100.00	ffff

Capstone: Policy Analysis

		Cumulative		Cumulative	
q1d	Frequency	Percent	Frequency	Percent	
No	4	40.00	4	40.00	ffff
Yes	4	40.00	8	80.00	ffff
Maybe	2	20.00	10	100.00	ffff

Capstone: Research Paper/Primary Data Analysis

		Cumulative		Cumulative	
q1e	Frequency	Percent	Frequency	Percent	
No	1	10.00	1	10.00	ffff
Yes	8	80.00	9	90.00	ffff
Maybe	1	10.00	10	100.00	ffff

Capstone: Research Paper/2ndaryData Analysis

		Cumulative		Cumulative	
q1f	Frequency	Percent	Frequency	Percent	
					ffff

Yes 10 100.00 10 100.00

For each of the following items for a capstone project, address whether you think it is essential for inclusion in a capstone, preferred, optional or not needed.

Capstone reviews the literature

	Cumulative		Cumulative	
q2a	Frequency	Percent	Frequency	Percent
Essential	9	90.00	9	90.00
Preferred	1	10.00	10	100.00

Capstone addresses 1 or > research/policy related q

	Cumulative		Cumulative	
q2b	Frequency	Percent	Frequency	Percent
Essential	6	66.67	6	66.67
Preferred	2	22.22	8	88.89
Optional	1	11.11	9	100.00

Frequency Missing = 1

Capstone demonstrates causal analysis/thinking

	Cumulative		Cumulative	
q2c	Frequency	Percent	Frequency	Percent
Essential	2	20.00	2	20.00
Preferred	4	40.00	6	60.00
Optional	3	30.00	9	90.00
Not needed	1	10.00	10	100.00

Capstone generates written 20 pg+ document

	Cumulative		Cumulative	
q2d	Frequency	Percent	Frequency	Percent
Essential	4	40.00	4	40.00
Preferred	2	20.00	6	60.00
Optional	2	20.00	8	80.00
Not needed	2	20.00	10	100.00

Capstone requires data analysis using SAS SPSS etc

	Cumulative		Cumulative	
q2e	Frequency	Percent	Frequency	Percent
Essential	8	80.00	8	80.00
Preferred	1	10.00	9	90.00
Not needed	1	10.00	10	100.00

Capstone requires basic data mgmt

	Cumulative		Cumulative	
q2f	Frequency	Percent	Frequency	Percent
Essential	7	70.00	7	70.00

Preferred 1 10.00 8 80.00
 Optional 2 20.00 10 100.00

Capstone performs analysis using online systems CDCWonder etc

	Cumulative	Cumulative		Cumulative
q2g	Frequency	Percent	Frequency	Percent
Essential	1	10.00	1	10.00
Preferred	2	20.00	3	30.00
Optional	5	50.00	8	80.00
Not needed	2	20.00	10	100.00

Capstone performs basic analysis using software generate Table 1, 2

	Cumulative	Cumulative		Cumulative
q2h	Frequency	Percent	Frequency	Percent
Essential	8	80.00	8	80.00
Preferred	2	20.00	10	100.00

Capstone considers biases and limitations of project

	Cumulative	Cumulative		Cumulative
q2i	Frequency	Percent	Frequency	Percent
Essential	7	70.00	7	70.00
Preferred	3	30.00	10	100.00

Capstone performs multivariable analysis/modeling

	Cumulative		Cumulative	
q2j	Frequency	Percent	Frequency	Percent
Essential	3	33.33	3	33.33
Preferred	4	44.44	7	77.78
Optional	1	11.11	8	88.89
Not needed	1	11.11	9	100.00

Frequency Missing = 1

Capstone provides written interpretation of analysis

	Cumulative		Cumulative	
q2k	Frequency	Percent	Frequency	Percent
Essential	9	90.00	9	90.00
Preferred	1	10.00	10	100.00

Capstone is orally defended w 3 person committee

	Cumulative		Cumulative	
q2l	Frequency	Percent	Frequency	Percent
Essential	8	80.00	8	80.00
Preferred	1	10.00	9	90.00
Not needed	1	10.00	10	100.00

Which of the following topics are most important to include in the Capstone course for the MPH in epidemiology.

Capstone course: using PUBMED other library databases

	Cumulative		Cumulative	
q3a	Frequency	Percent	Frequency	Percent
Essential	7	70.00	7	70.00
Preferred	3	30.00	10	100.00

Capstone course: using EndNote other reference mgr software

	Cumulative		Cumulative	
q3b	Frequency	Percent	Frequency	Percent
Essential	4	44.44	4	44.44
Preferred	1	11.11	5	55.56
Optional	3	33.33	8	88.89
Not needed	1	11.11	9	100.00

Frequency Missing = 1

Capstone course: basic human subjects issues IRB

	Cumulative		Cumulative	
q3c	Frequency	Percent	Frequency	Percent
Essential	4	44.44	4	44.44
Preferred	3	33.33	7	77.78
Optional	2	22.22	9	100.00

Frequency Missing = 1

Capstone course: basic data mgmt/file org in SAS, SPSS

	Cumulative		Cumulative	
q3d	Frequency	Percent	Frequency	Percent
Essential	5	50.00	5	50.00
Preferred	3	30.00	8	80.00
Optional	1	10.00	9	90.00
Not needed	1	10.00	10	100.00

Capstone course: online public access databases NCI, Wonder, etc

	Cumulative		Cumulative	
q3e	Frequency	Percent	Frequency	Percent
Essential	2	20.00	2	20.00
Preferred	5	50.00	7	70.00
Optional	3	30.00	10	100.00

Capstone course: faculty research interests and projects UK Research Ctrs

	Cumulative		Cumulative	
q3f	Frequency	Percent	Frequency	Percent
Essential	2	20.00	2	20.00
Preferred	6	60.00	8	80.00
Optional	2	20.00	10	100.00

Capstone course: making clear and effective tables/graphs

	Cumulative		Cumulative	
q3g	Frequency	Percent	Frequency	Percent
Essential	8	80.00	8	80.00
Preferred	1	10.00	9	90.00
Optional	1	10.00	10	100.00

Capstone course: techniques writing up results/discussion

	Cumulative		Cumulative	
q3h	Frequency	Percent	Frequency	Percent
Essential	7	70.00	7	70.00
Preferred	2	20.00	9	90.00
Optional	1	10.00	10	100.00

Capstone course: plagiarism

	Cumulative		Cumulative	
q3i	Frequency	Percent	Frequency	Percent
Essential	6	66.67	6	66.67
Optional	1	11.11	7	77.78
Not needed	2	22.22	9	100.00

Frequency Missing = 1

Capstone course: approaches to reviewing literature/writing lit review

	Cumulative		Cumulative	
q3j	Frequency	Percent	Frequency	Percent
Essential	7	70.00	7	70.00
Preferred	2	20.00	9	90.00
Optional	1	10.00	10	100.00

Capstone course: capstone format/procedures project approval/graduation

	Cumulative		Cumulative	
q3k	Frequency	Percent	Frequency	Percent
Essential	7	70.00	7	70.00
Preferred	3	30.00	10	100.00

Capstone course: developing strong research qs and causal thinking

	Cumulative	Cumulative		Cumulative	Cumulative
q3l	Frequency	Percent	Frequency	Percent	Percent
Essential	4	40.00	4	40.00	
Preferred	5	50.00	9	90.00	
Optional	1	10.00	10	100.00	

Capstone course: include other element

	Cumulative	Cumulative		Cumulative	Cumulative
q3m	Frequency	Percent	Frequency	Percent	Percent
Not needed	3	100.00	3	100.00	

Frequency Missing = 7

Any extra comments

	Cumulative	Cumulative		Cumulative	Cumulative
anyextra	Frequency	Percent	Frequency	Percent	Percent
No	4	44.44	4	44.44	
Yes	5	55.56	9	100.00	

Frequency Missing = 1

To me, "Not needed" just means the students should know the topic already, and "Optional" is stuff they should know already, but maybe a brief refresher would be helpful

A watered down Capstone for Epidemiology students makes no sense and is a disservice to our students.

I think the format is not as important as the steps. To me, the essential pieces are: 1) developing strong questions, 2) having the tools to understand/summarize the literature around that question, 3) being able to clearly present your ideas in written and oral format -- I think that can take many forms. I think optimally it would involve some level of data manipulation/analysis but I don't think that has to be required. Developing strong research questions and causal thinking -- I think this should be 2 separate questions. I think developing strong research questions is essential for MPH students but I don't necessarily think it has to involve causal thinking.

These topics really depend on the decision regarding scope of the capstone. For an MPH, a more translational/practice approach would make it distinct from an MS degree.

MPH students in Epidemiology should be able to ask a study question, review and analyze data, and interpret those data in a written format. Questions and analyses need not be complex, but basic data skill and interpretation must be present.

Appendix 7. NEHSPAC Accreditation Curriculum Needs.

NEHSPAC ACCREDITATION CURRICULUM NEEDS	
Competency	Course Needs
All Courses Required	
Air Quality Control	Potential Partnership with existing College of Engineering course: CE 599 Environmental Health and Engineering
Food Protection	Potential partnership with existing College of Agriculture Course: FSC 53 Food Microbiology
Occupational Health & Safety	New undergraduate course needed
Solid & Hazardous Material & Waste Management	New undergraduate course needed
Water & Wastewater	Potential Partnership with College of Engineering on existing course: CE 551 Water & Wastewater Treatment Engineering
Zoonotic & Vectorborne Diseases & Their Control	Potential to adapt CPH 616 as an undergraduate course
Seven Courses Required, with at Least Four in which Content Is the Primary Topic	
All-Hazards Preparedness	CPH 351 – Population Health & Crisis Management
Built Environment	New undergraduate course needed
Global Climate Change & Health	New undergraduate course needed
Disease Prevention	Potential to adapt CPH 613 as an undergraduate course
Environmental Health & Planning	CPH 320 Fundamentals of Environmental Health
Geographic Information Systems	CPH 365 Data Visualization for Public Health
Global Environmental Health	CPH 476G – Global Public Health
Hydrogeology	New undergraduate course needed
Injury & Violence Prevention	Adapt existing course at the 400-level: CPH 555 Violence, Crime, and Forensic Epidemiology
Institutional Health	Incorporate content into new occupational health course
Radiation Health	Incorporate content into new occupational health course

Recreational Environmental Health	New undergraduate course needed
Risk Analysis	New undergraduate course needed
Soils	Potential to partner with College of Agriculture on existing course: PLS 566 Soil Microbiology

Course Exists in EEH and Is Currently Taught
Course Exists in CPH or Another College that Requires Adaptation and/or Co-Listing
New Course Needed

Appendix 8. Appended DEEH Faculty Comments.

1. “Thank you so much for putting together such a nicely written and organized self-study. I’m just blown away by the amount of work this is.

I also wanted to give you a HUGE thank you for the statement below. The grant submission process is still extremely dysfunctional at the college level, they even caused me to lose my funded NCI K07 award. It took a lot of begging and many hours of submitting mountains of documentation to the NCI to get it reinstated.

In the future it would be most productive if the DEEH were able to hire an individual who was knowledgeable about NIH grants, cooperative agreements and contract procedures and rules. This individual could help faculty with pre-award activities such as preparing budgets, gathering bio sketches, helping with formatting and helping with the actual submission thereby allowing the faculty member to focus on the science and writing the proposal. “