

Graduate Affairs Committee
January 25, 2004
3:30 p.m. - 5:00 p.m.
UL 1126

AGENDA

1. Approval of the minutes for November 23, 2004 Queener
2. Vice Chancellor's Report.....Brenner
3. Associate Dean's Report..... Queener
 - a. CGS Meeting
 - b. NRC Delay
5. Purdue Dean's Report.....Story
6. Graduate Office Report..... Queener
 - a. APPC Action on UG/Grad Fees
7. Graduate Student Organization Report.....Reuille
8. Committee Business
 - Curriculum Subcommittee Report O'Palka
 - Fellowship Subcommittee Report.....Koerner
 - a. Block Grant Allocations
9. Program Approval..... Queener
 - a. Biotechnology Track / MS in Biochemistry and Molecular Biology
 - b. PhD in Mechanical Engineering
 - c. MPH MinorsProgram Update
 - d. MPH Tracks
 - e. MS in Physiology
10. Discussion
11. Next Meeting (February 22, 2005) and adjournment

Graduate Affairs Committee
January 25, 2005

Present: Rachel Applegate, William Bosron, Mark Brenner, Pamela Crowell, David, Ford, Ain Haas, Amy O'Brian (Dolores Hoyt), Andrew Hsu, Michael Klemsz, Joyce Mac Kinnon, Jackie O'Palka, Robert Osgood, Martel Plummer, Sherry Queener, Kristi Reuille, Sharon Sims, Jon Story, Joanne Warner, James Williams, Marianne Wokeck.

Staff: David Koerner, Dswanda Jones

Approval of the Minutes – Dr. Queener

Minutes from the November 23, 2004 Meeting Approved.

Vice Chancellor's Report – Dr. Brenner

Dr. Brenner and Dr. Queener are looking for a more effective way to distribute fellowship funds. Three out of 4 payments were late, which is unacceptable. Most of our students rely completely on this funding. Dean Plater is behind any initiative to find alternate means. One suggestion is to move the entire process from the Financial Aid Office to the Graduate Office. If you are aware of any troubles, please contact David Koerner and copy Dr. Queener.

Associate Dean's Report – Dr. Queener

Introduction of Pamela Crowell, School of Science Associate Dean for Research and Graduate Education. National Council of Graduate School meeting update: Europe and Australia have been intentionally developing a competitive system that is cutting into international enrollment. There is a conscious transformation to a three year undergraduate baccalaureate degree. It makes their students less able to enter our programs because they don't have a four year baccalaureate degree, but makes their programs attractive to international students. National Research Council (NRC) is delayed another year due to funding issues. The notes on the Council of Graduate School meeting will be posted on the Graduate Office website.

Purdue Dean's Report – Dr. Story

The changes in the way the Graduate School is dealing with "non-West Lafayette campuses" went into effect the first day of the new semester. Purdue is working on how to route courses and new programs. They are trying to have each campus approve courses and programs before they come to the Graduate School. Purdue is trying to build camaraderie, to work together. They have found that getting groups together helps things work smoothly. They have invited Dean Slattery to talk to Graduate Council.

Graduate Office Report – Dr. Queener, David Koerner

APPC Action on Undergraduate / Graduate Fees

Students are charged an Undergraduate fee or a Graduate Fee instead of charging students according to the course load they are taking. The options the APPC has looked at are (1) to do nothing and let graduate students pay graduate fees regardless whether they are taking undergraduate or graduate courses. (2) Let the bursar fix it. (3) Students participating in undergraduate prerequisites will be

charged an undergraduate fee for those classes and considered an undergraduate non degree student. Students participating in graduate prerequisites will be charged graduate fee for those classes. The impact of this decision from the student stand point: they will pay fees on the type of class they take. The impact on the Graduate Office is income. The APPC looked at the Fall numbers and found about 1/3 of the students in GND programs are taking undergraduate course as prerequisites, which means the new policy will cause the GND program to lose 1/3 of the graduate non-degree number enrollments. The graduate office will pursue some of the applications monies to offset the loss of revenue. This was approved by APPC in January.

Spring admissions - Koerner

162 students applied and were admitted after December 23, 2004. Of these 162, 144 students applied and were admitted after January 10, 2005 which was the start of the new semester; 28 students were admitted after the first week of the new semester. Admission decisions are being made extremely close to the deadline dates when it comes to the beginning of the school term. Furthermore, we have found 135 students who completed applications for Spring but have no information back from programs as to whether they were accepted, rejected, or simply not acted on. Mr. Koerner sent a listing to applied departments for advice on how to deal with the applicants; he has received no feedback. GAC members decided they want to see when these listings go out, so they can work within their units to improve the situation. David Koerner will offer training and assistance for departments to retrieve information from PeopleSoft.

Graduate Student Organization Report – Ms. Reuille, RN

Deadline for Student Trustee is February 28th. The Indiana statehouse visit for Hoosiers for Higher Education is February 8th. The GSO went to Dean Slattery's house for dinner with the GPSO from Bloomington; the group discussed organizational differences between Bloomington vs. Indianapolis student groups.

Committee Business

Curriculum Subcommittee Report – O'Palka

Meeting in February, please send in Submissions.

Fellowship Subcommittee Report – Koerner

University Fellowship applications are due February 15th. The process has changed, so please review the cover letter to see what is required. Reminder: there are no bonuses for early submissions, but, they are appreciated. Block Grant proposals were reviewed and funded; as a general rule the awards were increased this year to put more money at the department level so the department can make a decision on how to use that funding. RIF Graduate Student support money has been transferred to the departments.

Program Approval – Dr. Queener

Biotechnology Track / MS in Biochemistry and Molecular Biology –

Summary: The similarities between the new track and the original Master's degree include: both require 30 credits, a course in research ethics, and participation in

student seminars for credit. Differences include: the new track does not require the GRE for admission; three methods courses are electives for the original degree but are required for the new track; only one of the five core advances courses required for the original degree is required by the new track; rather than a thesis, the new track requires a research paper that demonstrates integration of the material. Suggested changes: rewording the description of the methodology paper. This track was voted: *Approved, Pending Changes*.

PhD in Mechanical Engineering – Summary: This is a negotiated agreement between Engineering and West Lafayette. The GAC first saw the course in September as an informational item. Dean Plater has requested the GAC review this proposal and vote on it. This proposal was voted: *Approved*.

Minors EPI *Approved*.

Program Update

MPH Tracks have new language clarification and will be forwarded to Bloomington for action.

The new Chairman of Physiology has asked to close admission for MS in Physiology while they reevaluate their curriculum.

Discussion – Dr. Queener

Next Meeting

February 22, 2005

Meeting Adjourned 4:34pm

**Proposal for an M.S. in Biochemistry and Molecular Biology with a Specialization
in Biotechnology**
(11/11/04)

Introduction: The Department of Biochemistry and Molecular Biology currently operates a Biotechnology Training Program to confer a Certificate in Biotechnology from the IU Graduate School. This proposal for an M.S. in Biotechnology as a track or specialization in the M.S. in Biochemistry and Molecular Biology is a natural extension of the interest of students to pursue the M.S. in this area. The Biotechnology Training Program (BTP) was started in 2001 with funding from the Lilly Endowment INGEN program. The long-term goal was to create a program to train technicians for Indiana University School of Medicine and health-related, central Indiana industrial research laboratories. The BTP works closely with School of Medicine core facilities to train technicians to optimally use core research resources. The program is described at <http://www.medicine.iu.edu/~gradschl/biotechTraining/index.html> .

The main use of start-up INGEN funding was to create a state-of-the-art teaching facility at the Biotechnology Research and Training Center (BRTC). The class room accommodates about 24 students with high resolution video projection and conferencing equipment and computer facilities for instruction at student desks. The 1200 sq. ft. open teaching laboratory will accommodate about 20 students at a time. There are 2 separate 500 sq. ft. support rooms for instrumentation and cell culture. The teaching laboratory has good spectrum of basic core equipment for biochemical research and teaching. In addition to this, core facilities for gene expression analysis, genotyping, protein expression, animal experimentation, proteomics and metabolomics research are available at the BRTC.

The Biotechnology Certificate includes an introductory course in biochemistry and molecular biology, three hands-on laboratory courses in proteomics, cell biology and molecular biology, and interactive problem-based learning courses in biotechnology and responsible conduct of research. The core curriculum for the 17 credit, 1.5 year certificate program is shown in the following table. All courses have been offered at least twice. Our initial experience with the program indicates that problem-based learning in the G828 Concepts in Biotechnology course is very important in teaching integration of biotechnology principles into the flow of basic research projects. The interactions among students promoted by problem-based learning (identification of learning issues, searching the literature and data bases by computer, and team discussions of cases) are very important in developing skills in communication, teamwork, problem solving, and accessing the scientific literature.

Course	Title	Credit	Type	Semester
B500	Introductory Biochemistry	3	Lecture	Fall, Year 1
G828	Concepts in Biotechnology	2	PBL	Fall, yr. 1
G841	Methods in Proteomics	3	Lab	Spring, yr. 1
G828	Concepts in Biotechnology	2	PBL	Spring, yr. 1
G890	Methods in Molecular Biology	3	Lab	Summer, yr. 1
G823	Methods in Cell Biology	3	Lab	Fall, yr. 2
G505	Responsible Conduct of Research	1	PBL	Fall, yr. 2
Total		17		1½ years

The BTP Director is Bill Bosron and the Associate Director is Sonal Sanghani. David Allmann is Admissions Director. David Allmann is course director for G828, Concepts in Biotechnology, Paresh Sanghani for G841, Methods in Proteomics, Mark Lasbury and Chao Lee for G890 Methods in Molecular Biology, Sonal Sanghani for G823, Methods in Cell Biology. B500, Introductory Biochemistry and G505, Responsible Conduct of Research is presented to BTP students at the BRTC classroom in late afternoon by video tape with a core faculty member present during playback to handle student questions.

The numbers of applicants, acceptances, matriculates and progress of students is shown below. We expect that the program size will eventually be about 12 students per class per year, which is a number that fits well with our faculty resources for the program. About 1/3 of our students are technicians at IUPUI, 1/3 are technicians at local industries like Lilly and Roche, and 1/3 are seeking employment. In the last group, the largest single group is women who wish to return to the workforce after staying at home with children. In the first group of 5 students who received the Certificate, two entered M.S. programs at IU and one entered an MBA program, so the Certificate seems to be a gateway to advanced degree programs. One student in the 2003-4 class and two students in the 2004-5 class are simultaneously pursuing both the Certificate and an M.S. at IU. In this regard, the faculty and administrators associated with the Biotechnology Training Program will continue to work with students and programs that want to use the Biotechnology Certificate and courses in their M.S. programs.

Year	Inquiries	Applicants	Acceptances	Matriculates	GPA	Finished 1 st Year	Received Certificate
2002-3	-	11		7	3.3	5	5
2003-4	50	28	14	11	3.3	8	
2004-5	90	18	9	8	3.5		

Objectives of the M.S. Program: The overall objective of the proposal is to offer the Central Indiana workforce an opportunity to enhance their research skills in modern biotechnologies that are critical to health sciences research. To achieve this goal, we will create a new track in the M.S. degree program in Biochemistry and Molecular Biology that focuses on Biotechnology. The core curriculum of the new M.S. track is the

17 credits of the Biotechnology Certificate program. The M.S. track would be expanded to include one more academic course, student seminar and 8 credits of research in a biotechnology core facility. We expect that the program can be completed part-time in 3 years or full time in 2 years.

Unique Features and Strengths of the Program: The initial success of the Biotechnology Certificate program, as described above, is the most important feature and strength of the program. Out of the 7 students who entered the program 2002-3, 5 received Certificates. Approximately 5 additional students are on track to obtain the Certificate in December 2004. A second major strength of the program is the outstanding research Core resources and course instructors available to the Biotechnology Training Program. Seven of the School of Medicine Core Facilities <http://www.medicine.iu.edu/research/cores/> participate in the Training Program. In general, these are the most frequently utilized basic science cores at the School. A third major strength is the quality of the new teaching and laboratory space for the program at the Biotechnology Research and Training Center.

There is interest in M.S. degrees, as indicated by two of the five students who received Certificates in 2004. Moreover, three of the 16 current students are pursuing the Certificate and M.S. degrees simultaneously. We believe that about 1/3 of the Certificate students, or about 4 of 12 new Certificate students per year, would go on to pursue a Biotechnology track in the M.S. in Biochemistry and Molecular Biology program.

Curriculum: The curriculum for the proposed M.S. program includes the 17 credits for the approved Biotechnology Certificate plus one elective graduate course in Basic Sciences (3 credits), plus 2 semesters of student seminar (2 credits) and 8 credits of research in a School of Medicine core facility with a faculty mentor. This is a non-thesis option for an M.S. degree that requires a written paper from the research experience in a core facility.

The elective course options in the spring of year 2 options are: Protein Structure and Function, B807, Cellular Biochemistry and Regulation, B810, Infectious Microbes and Host Interactions, J510, Graduate Neuroanatomy, D527 or Advanced Molecular Biology Methods G910 in the summer of year 2. All of the above courses are already approved by the IUPUI Graduate Affairs Committee for use in graduate degree programs. Other elective courses can be used with approval of the faculty advisory committee. The faculty advisory committee may recommend another elective course in place of the student seminar when appropriate.

The 8 credits of research will be taken in the summer of year 2 and in year 3 (part-time). The research project will be collaboratively directed by a director of a School of Medicine Research Core and a faculty research mentor using the core facility. It is expected that the student will first work in the Core to learn basic methodologies. The faculty research mentor will assign a research project using the core facility. We expect the students to work at least two afternoons or evenings per week (part-time). The

student will write a research paper on the Core methodologies and completed research project in place of a formal M.S. thesis. We expect that the paper will follow the format of a major research journal like *Journal of Biological Chemistry* or *Biotechnology and Bioengineering*. The manuscript should be about 20 pages, double-spaced with appropriate figures, tables and references. The student should fully describe methodologies and results of the research. The discussion should be prepared in consultation with the research mentor and Core director. The faculty research mentor and Core director will review the paper and assign a grade for the 8 credits of research.

Title	Number	Credit	Type	Semester
Introductory Biochemistry	B500	3	Lecture	Fall, yr. 1
Concepts in Biotechnology	G828	2	PBL	Fall, yr. 1
Methods in Proteomics	G841	3	Lab	Spring, yr. 1
Concepts in Biotechnology	G828	2	PBL	Spring, yr. 1
Methods in Molecular Biology	G890	3	Lab	Summer, yr. 1
Methods in Cell Biology	G823	3	Lab	Fall, yr. 2
Responsible Conduct of Research	G505	1	PBL	Fall, yr. 2
Elective		3	Lecture/lab	Spring, yr. 2, or Summer, yr. 2
Research	B855	1	Research	Spring, yr. 2
Research	B855	1	Research	Summer, yr. 2
Biochemistry Seminar	B890	1	Seminar	Fall, yr. 3
Research	B855	3	Research	Fall, yr. 3
Biochemistry Seminar	B890	1	Seminar	Spring, yr. 3
Research	B855	3	Research	Spring, yr. 3
Total		30		3 Years

Degrees to be Awarded (and performance levels): The degree will be an M.S. in Biochemistry and Molecular Biology with a specialization or emphasis in biotechnology. We will request that the specialization in biotechnology be listed on the M.S. degree diploma, if possible.

Students are required to maintain a GPA of 3.0 in the program. The fixed core courses comprise 19/30 credits; excluding the 3 credit elective and 8 credits of research. Students achieving a grade of C or lower in any core course will be asked to retake the course. Students must complete the certificate program before proceeding on to research. The program is designed to be completed in 3 years part-time with courses starting after 3 PM in the afternoons. Faculty will work with students to design a curriculum for full time participation, if requested.

Admissions Requirements: The admissions requirements will be identical with the Biotechnology Certificate Program. That is: a baccalaureate degree in biology, chemistry or a related field and an overall and science GPA of 3.0 on a 4.0 scale. Applicants should provide letters of recommendations from 3 individuals familiar with their academic record and potential to succeed in the M.S. program as well as a personal statement describing why they are applying to the program. It is expected that the majority of students will be working in a biotechnology-related area and will complete the program as a part-time student. GRE is not required for the Certificate

and will not be required for the MS, since most students will complete the Certificate first, part time. The IUPUI ESL exam is required for students who graduated from an undergraduate school outside of the U.S.

Clientele to be Served: The major source of students for the Biotechnology M.S. will be employees of local biotechnology industries and our own School of Medicine technicians. Employees at Eli Lilly & Co., Roche Diagnostics and other local biotechnology companies have participated in the Certificate program. Another source of students will be individuals seeking a change in career, especially women who wish to reenter the workforce after raising a family. The M.S. program will be a comprehensive educational opportunity to allow the student to be competitive for positions in the biotechnology workforce. Additionally, we believe that the Biotechnology M.S. program will be a gateway into our research-based Ph.D. programs. The 3 year, 30 credit M.S. program will allow students to evaluate whether a research career in a biotechnology discipline is an appropriate choice for them. All of the courses in the M.S. program are approved for graduate credit and may, upon approval of the appropriate advisory committee, be accepted as part of a Ph.D. A table of applications, matriculates and graduates for the Biotechnology certificate program is shown in the Introduction. All M.S. students will complete the Biotechnology Certificate program. Students can apply to the M.S. at any time during the Certificate program or directly to the M.S. program.

Student Financial Support Available: There is no student fellowship or tuition funding available for this M.S. program. However, employees of Indiana University are eligible for a graduate fee courtesy of \$908.33 per semester which covers 3 credits per semester. Most local biotechnology companies will cover fees for an employee. Students may also apply for financial aid. As shown in the table comparing biotechnology programs at other institutions, our estimated tuition and lab fee costs of \$6,506 for the program are substantially lower than other programs nationally.

Evidence of Student Demand: As shown in the table on page 2, we have had between 11 and 28 applications for the Biotechnology Certificate in the past 3 years. Between 7 and 11 student matriculated into the Certificate program. Out of the 2002-3 class, 2 of the 5 graduating students went on to M.S. degrees at IU. We believe that about 1/3 of the Certificate class or about 4 students per year will join the Biotechnology M.S. program. In 2003-4, we admitted one student who was concurrently completing a Pharmacology M.S. and in 2004-5 we admitted two students who are concurrently completing M.S. degrees in Medical and Molecular Genetics and in Bioinformatics.

Employment Possibilities for Graduates: As indicated in the Introduction, about 2/3 of our Certificate students are already employed. We believe that this will be true for the M.S. students in this part-time program. We do not have outcomes information on recent graduates who were not employed when they began the Certificate Program but we expect that their credentials for employment would be substantially enhanced by the program.

Relevant Faculty Expertise: The core teaching faculties are well qualified to teach in the program. Dr. William Bosron, Director, and Professor of Biochemistry and Molecular Biology has an active funded research laboratory investigating alcohol and drug metabolism, and currently trains pre and postdoctoral students. He is currently Assistant Dean for Graduate Studies. Dr. Sonal Sanghani, Associate Director, and Assistant Research Professor and Assistant Professor of Biochemistry and Molecular Biology, part-time, is an active researcher in cancer drug metabolism and in the cell biology of liver fibrosis. She is course director for the Cell Biology laboratory course. Dr. Paresh Sanghani, Assistant Research Professor and Assistant Professor of Biochemistry and Molecular Biology, part-time, has an active research laboratory investigating the structure and mechanism of zinc-dependent alcohol dehydrogenases. He is the Director of the INGEN Protein Expression Core and course director for the Proteomics lab course. Dr. David Allmann, Director of Admissions and Professor of Biochemistry and Molecular Biology, has extensive experience with student recruiting and advising. He is an expert in Problem Based Learning curricula and is the director of the Concepts in Biotechnology course. Dr. Hiremagalur Jayaram, Professor of Biochemistry and Molecular Biology, has an active research laboratory investigating nucleic acid metabolism, drug resistance and chemotherapy. He is an expert in case development for Concepts in Biotechnology. A list of participating core facilities and their directors is shown below.

Core Facility	Director
Biochemistry Biotechnology Facility	Robert Harris
Cell & Protein Expression	Paresh Sanghani
Flow Cytometry	Edward Srouf
Ind. Center for Biological Microscopy	Kenneth Dunn
In vivo Imaging	Tim DeGrado
Proteomics	Mu Wang
Transgenic & Knockout Mouse	Loren Field

Impact on Undergraduate and Other Graduate Programs: As mentioned above, we have preliminary data to show that the Biotechnology Certificate program is a 'gateway' for students to test graduate school before enrolling in M.S. programs. We believe that the Biotechnology M.S. program will be a 'gateway' for students interested in the research Ph.D. or professional M.D. programs at IU or elsewhere. We believe that this M.S. track is unique at IUPUI and that it will not conflict with other M.S. programs on IU campuses (see letters of support).

Compatibility with University and Campus Missions: It is clear from statements by Chancellor Bantz that the development of Biotechnology Training programs is central to the mission of the IUPUI campus as articulated in his 2003 installation address 'IUPUI and the Power of Two'

http://www.iport.iupui.edu/performance_report/teach/pr_teach_provide.htm .

Implementation Plan: As indicated above, the Biotechnology Certificate Program has been in operation for 3 years. All of the core courses are in operation and the new INGEN Biotechnology Training facilities at the Biotechnology Research and Training

Center. The additional courses for the M.S. degree are already in operation except for the research course. As indicated in the table above, we have support from 8 School of Medicine Core facilities to have students participate in faculty research under core director guidance.

Plan for Administering the Program: We have an existing administrative structure for the program: Dr. William Bosron, Director, Dr. Sonal Sanghani, Associate Director, Dr. David Allmann, Admissions Director. We have an existing advisory committee: Drs. Abbott, Allmann, Bosron, Jayaram, Lasbury, S. Sanghani, Wang and Witzmann. The committee meets in the spring to consider admissions strategies, perform program evaluations and review curricula. Admissions activities are performed by Email. The Training Program Director reports directly to the Chair of Biochemistry and Molecular Biology, Dr. Thomas Hurley and to the Chair of the INGEN Steering Committee, Dr. Ora Pescovitz.

Comparison with Similar Programs at other Universities and at other Campuses of Indiana University: There are several laboratory-oriented Biotechnology Training programs in the US and programs from major research institutions are listed below. The Biotechnology programs primarily oriented toward the business of biotechnology are not included. While some programs can be done part-time, we believe that our IUPUI Biotechnology MS program is the only one that was designed to be part time from the onset. Thirty graduate credits or about 10 courses (not counting research) seem to be the norm in the program. It should be pointed out that tuition for the Indiana University programs is far lower than other U.S. programs in this area.

University	Department	Effort	Credits	Duration	Fees*
IUPUI (this proposal)	Biochemistry	Part	30	3 years	\$6,506
Indiana Univ. Bloomington	Biol., Chem.	Full	30	1 year	\$6,381
Penn State	Huck Institute	Full	30	1.5 years	\$32,247
Johns Hopkins Univ.	Advanced Acad. Progs.	Full	10 courses	2 years	\$20,750
Univ. Penn	Eng and Sci	Full	11 courses	2.5 years	~\$41,652
Northwestern	Eng and Sci	Full/Part	5 quarters or	~1.5 years	\$49,235
Univ Mass	Biology	Full	30		\$11,145
Georgetown	Biochemistry	Full/Part	30	1 year	\$23,595

*State resident tuition for total credit hours or years (depending on assessment scheme).

DRAFT
April 5, 2004

Rules and Guidelines
for participation of IUPUI in the Ph.D. Program of Purdue
University for studies in the Mechanical Engineering

A cooperative agreement between:
The Purdue School of Engineering and Technology, IUPUI
and
The School of Mechanical Engineering, Purdue University,
West Lafayette

In this document, we lay out the framework for a cooperative component of the Ph.D. program at Purdue University, by which graduate students may pursue their Ph.D. degree in Mechanical Engineering while in residence at IUPUI. This agreement does not establish a new, distinct program, but rather establishes the guidelines by which ME Department at IUPUI can more fully participate Kathy Purvis, Managing Director Student Financial Aid Services in the Purdue University Ph.D. program. The purpose of this agreement is to formalize this arrangement, thus improving the competitiveness at both campuses for fulfilling the missions of the university: discovery, learning, and engagement. The success of this cooperative program depends critically upon the development of a strong collaboration between campuses in each of these missions, and we identify within this document metrics that will allow us to identify strengths and weaknesses of this collaboration. The guiding principles to be observed in establishing the guidelines for this program, presently and in the future, are twofold. First, the quality of the educational program must adhere to the highest standards possible. Second, the program must afford the students within the ME graduate program increased opportunities in education and research. With these principles in mind, we set forth in this document the Rules and Guidelines for the administration and implementation of this cooperative program.

A. Steward Department: The School of Mechanical Engineering, West Lafayette shall serve as the Steward Department.

B. Head of the Graduate Program: The Head of the School of Mechanical Engineering, West Lafayette is the Head of the Graduate Program, as recognized by the Graduate School.

C. ME Graduate Committee: The ME Graduate Committee at the West Lafayette campus (WL) has the responsibility for establishing all policies regarding the ME graduate program, subject to the rules and guidelines of the Purdue University Graduate School. As such, IUPUI participation in the ME Ph.D. program is subject to the rules and guidelines established by this committee. One faculty member from ME department at IUPUI shall serve as a voting member on the WL ME Graduate Committee. This member will be appointed by the Chair of ME at IUPUI.

D. Cooperative Agreement Oversight Committee: A Cooperative Agreement Oversight Committee will be established to monitor the activities and progress of the Cooperative Agreement Program. This committee shall consist of seven members, including the ME Associate Head for Graduate Education, who is to chair this committee, the ME Head at WL and the ME Chair at IUPUI, two faculty members from IUPUI and two faculty members from WL. The latter four members will serve terms of five years (with staggered completion dates), and are to be assigned by their respective school head/chair. This committee is to report to, and make recommendations for program revisions to the WL ME Graduate Committee. In addition to general oversight of the program, this committee has the responsibility to hear any disagreements and disputes that may arise concerning this program, and mediate a resolution.

E. Admission to the Ph.D. program: Students seeking admission to the program must apply through the standard application process. The student should indicate the campus at which he/she is primarily interested in studying. The applicant pool will be open to both campuses for review of suitability and recruitment. There will thus be the possibility of transferring the student's admission request between the campuses provided that the applicant has no objections to it. (Applicants will not compromise their admission decisions for their primary campus choice by selecting the second option.) Applications to IUPUI campus shall be sent to the IUPUI E&T Graduate Office and shall be evaluated by the IUPUI ME Graduate Education and Research Committee, which will make a recommendation to the ME Graduate Committee in WL for a final decision according to its established standards. Admission letter for every student will indicate the location (West Lafayette or Indianapolis) at which the student will primarily pursue his/her studies.

A student admitted for study at one campus may request to move to the other campus at any time during his/her program. A student may initiate this by submitting a change to his/her plan of study. Approval of the request will be subject to the usual limitations of resources availability.

Exceptionally strong applicants can be admitted to the Direct Ph.D. program for study either at WL or IUPUI after earning their BS degree, without first earning a Master's degree.

F. Residency and Course Requirements: Students in this program are resident at IUPUI. All course registrations (adds, drops, and modifications) are submitted through and processed by ME at IUPUI. All fees are paid at IUPUI.

The Chair of ME at IUPUI will transmit a copy of (1) all course registrations or changes in course registrations within one week of submission, and (2) all grade reports for students in this program within one week of posting to WL ME Associate Head for Graduate Education.

There is no residency requirement to be completed for WL. However, a minimum of four courses from each student's plan of study (or eight courses for direct Ph.D. students) must have originated at WL.

G. Plans of Study, Changes to Plans of Study, and Final Audits: Prior to submission to the Graduate School, all Plans of Study, Changes to Plans of Study, and Final Audits for students pursuing their studies at IUPUI must be approved by: (1) the ME departmental chair and the Dean of Engineering and Technology at IUPUI, and (2) the ME Associate Head for Graduate Education at WL. The Plan of Study must indicate those courses taken at IUPUI and those courses taken through WL.

H. Advisory Committee: The student must form his/her Doctoral Advisory Committee before the end of the second semester of the academic program. For students in the Direct Ph.D. Program, the Doctoral Advisory Committee must be formed by the end of the third semester following the admission to the program. This committee consists of at least four faculty members and is formed upon approval of the Final Plan of Study. This committee shall be co-chaired by one ME faculty member from IUPUI and one ME faculty member from WL. These co-chairs serve as the major professors in guiding the student's thesis research. *The co-chairs from IUPUI and WL are to work together in guiding the student's thesis research. To foster a strong collaborative effort in advising as well as in guiding the thesis research, it is recommended that the two co-chairs mutually consult while selecting the doctoral graduate student.* At least two members of the Doctoral Advisory Committee (including the co-chair) must be ME faculty members at the WL campus. One member of the committee must be from a department/school outside ME. This member can be from WL or IUPUI.

I. Qualifying Examination: Ph.D. students pursuing their studies at IUPUI must take the Qualifying Examination at WL, subject to the same conditions and rules as WL students. An exam may be held simultaneously at IUPUI if a sufficient number of students appearing in a particular Qualifying Examination is from this program.

J. Preliminary Examination, Formal Review Examination, and Final Examination: All examinations must be scheduled through the WL ME Graduate Office, and conducted at the WL campus. The Report of the Examination (Graduate School Forms 10 and 11) must be signed by the WL ME Associate Head for Graduate Education before submission to the Graduate School and copied to the Chair of the Department of Mechanical Engineering at IUPUI. Deadlines for these examinations each semester are established by the Purdue University Graduate School and are tied to the academic calendar of the WL campus.

K. Thesis Approval: The format of the Ph.D. thesis must be checked and approved by the WL ME Thesis Format Advisor. The format checking process will be the same as at WL. The format advisor indicates his/her final approval by signing the Thesis Acceptance Form (*Graduate School Form 9*). This form also requires the signatures of the WL ME School Head and IUPUI Department Chair, signifying approval of the thesis for quality.

L. Other requirements for the Ph.D. degree: Unless otherwise specified in this document or in later determinations by the WL ME Graduate Committee, students pursuing their degrees at IUPUI must adhere to the same requirements and program deadlines as students studying at WL. These rules are specified in the "Doctoral Program Handbook."

M. Change of Residency. As noted in section E, "Admission to the Ph.D. Program," a student admitted for study at one campus may request to move to the other campus at any time during his/her program, subject to the approval of the faculty advisors involved and the availability of support. This requires a change to plan of study, in which the student will indicate all changes to his/her curriculum and advisory committee members. The campus(es) at which all coursework was (or will be) taken must also be indicated. These changes require the approval of the student's old as well as revised Advisory Committee and will be reviewed on a case-by-case basis.

N. Semi-Annual and Annual Reviews: *At the end of each Fall and Spring semesters, the two co-chairs of the student's advisory committee will provide a short (< 1 page) progress report to the Associate Head for Graduate Education at WL. This report will address issues of both research and courses.* The IUPUI ME Graduate Committee will review the academic progress of each

student in this program annually. A summary report prepared by the IUPUI ME Graduate Committee will be sent to the ME Associate Head for Graduate Education at WL for review. The purpose of these reviews is to ensure continuous progress towards completion of degree requirements as well as interaction of the co-advisors with the students

O. Course Proposals: Proposals for new courses, course revisions, and course deletions (*Registrar's Form 40*) at IUPUI must have the following approvals: (1) IUPUI department chair and school dean; and (2) ME Graduate Committee, ME School Head and school dean, WL. The IUPUI ME Graduate Committee will approve experimental offerings (ME 597 or 697) by the department. Proposals to the WL ME Graduate Committee for new courses and course revisions must be accompanied by complete course information, including course title, credits, pre- and co-requisites, description, outline, the name of the professor in charge of the course and justification for the course in the context of existing IUPUI and WL graduate level courses. The Graduate Committee will also solicit an opinion from the Academic Area Committee(s) in WL most closely associated with the proposed course.

P. Approval of IUPUI Faculty Members as Co-Chairs of an Advisory Committee: IUPUI faculty member, who is co-chair of an Advisory Committee, must have a P* status, which needs approval from the steward department. This approval is at two levels: (1) the IUPUI co-chair must be approved by the ME Head of the Graduate Program, and (2) The IUPUI co-chair must be certified by the Graduate School to serve as a co-chair on a student's Doctoral Advisory Committee. A *Request for Graduate Faculty Certification (Graduate School Form 24)* must have the following approvals: (1) IUPUI department chair and school dean; and (2) ME Associate Head for Graduate Education and the Dean of Engineering, WL. All requests to serve as an IUPUI co-chair must be presented to the WL ME Graduate Committee, which will consider the following factors: (1) a satisfactory evaluation of the CV of the faculty member by the Graduate Committee, (2) if required, a positive recommendation from the most closely associated Academic Area Committee(s) within the School of Mechanical Engineering at WL, and (3) a strong research and scholarship record.

For faculty members from IUPUI who are participating in the Ph.D. program (at the co-chair level) for the first time, initially a S status will be considered for advising a specific student. Following a successful completion of the joint advising effort, the faculty member from ME IUPUI can request a P* status for all future co-advising of doctoral students.

Q. Advertisement of the IUPUI component of the Ph.D. program: ME at IUPUI and/or ME at WL may advertise this component of the program in print

and through their web sites and program handbooks. All such materials must have the prior approval of the WL ME Head of the Graduate Program.

R. Review of the Cooperative Agreement: The ME Graduate Committee will conduct a review of the cooperative agreement every five years, or more frequently at its discretion. In this review, the following data will be examined and evaluated:

1. Academic progress of students currently in the program.
- ~~4-2.~~ Academic record of students who have completed the program.
3. Issues that have arisen in the cooperative program, and how they were resolved.
4. Other factors related to the cooperative agreement.
- ~~4-5.~~ Distribution of grades earned in WL courses and Indianapolis courses.

The purpose of this review is (1) to determine whether the program is meeting its goals of providing the best educational and research opportunities for ME students and (2) to revise the program to correct any problems that may have arisen.

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Daniel Hirleman (date)
Head and Professor of Mechanical Engineering
School of Mechanical Engineering, Purdue West Lafayette

Hasan U. Akay (date)
Chair of Mechanical Engineering
School of Engineering and Technology, IUPUI

Suresh Rao
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School of Engineering, Purdue West Lafayette

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Dean
School of Engineering and Technology, IUPUI

John J. Contreni (date)
Interim Dean of the Graduate School
Purdue University

Proposal for a Minor in Epidemiology
Indiana University School of Medicine
Department of Public Health

Rationale: The Department of Public Health is proposing a rigorous, highly focused 12-credit hour minor in Epidemiology because the field of public health is growing in national and international importance, is integral to many areas of pursuit, enhances analytic and data-based management skills that are desirable for many doctoral level research projects, offers population-based research perspectives, offers skills that are of interest to the private and public sectors, and formally acknowledges the course work that doctoral students are currently taking as electives through the Department of Public Health.

Objectives: The minor in Epidemiology will provide students with concepts and principles of the research, field, theory and practice of epidemiology so that they will be able to:

1. Define and discuss basic and advanced epidemiologic concepts.
2. Interpret patterns of disease or health risks observed in patterns of person, place, and time characteristics
3. Identify sources of existing data for potential studies and list the strengths and weaknesses of using secondary data.
4. Calculate measures of disease rates and measures of association between factors and diseases.
5. Identify the advantages and limitations of epidemiologic, health care economic research, and clinical trial study designs when provided with cases studies, and be able to offer appropriate alternative study designs.
6. Critically evaluate the strengths and weaknesses of research studies and the resultant validity.
7. Understand ethics in research methodology, including the need for informed consent, and the role of the institutional review board (IRBs).

Students: The minor in Epidemiology offers the opportunity to draw together students from all health related graduate programs. It is anticipated that the minor in Epidemiology would be especially attractive to doctoral students in Schools of Nursing, Dentistry, Medicine, Health, Physical Education and Recreation, Health and Rehabilitative Sciences, and Public and Environmental Affairs. Based on the number of inquiries we have received from students and faculty, we anticipate a strong interest in this minor.

Faculty: Faculty advisors for the Epidemiology minor will be:

Dr. Stephen Jay, IU School of Medicine Department of Public Health

Dr. Cindy Stone, IU School of Nursing Department of Environments for Health

Dr. Enid Zwirn, IU School of Medicine Department of Public Health

Dr. Greg Steele, IU Department of Public Health

Academic Program: The curriculum for the 12 credit hour minor in Epidemiology is comprised of the following 3 required courses: H517, P600, P601 and one course from the following: P609, P610 or P612. This focused minor provides students with a rigorous grounding in the background and application of epidemiology. Satisfactory completion of the requirements for the minor in Epidemiology will be monitored by the student's minor advisor on their program/dissertation committee.

Required Courses for the 12-hour Minor in Epidemiology:

(these are existing courses in the Department of Public Health)

H517: Fundamentals of Epidemiology	3.0 cr.	Fall Semester
P600: Epidemiological Research Methods	3.0 cr.	Fall Semester
P601: Advanced Epidemiology	3.0 cr.	Spring Semester

Choose one course from the following:

P609: Infectious Disease Epidemiology	3.0 cr.	Spring Semester
P610: Chronic Disease Epidemiology	3.0 cr.	Fall Semester
P612: Patient-Centered Outcomes Research	3.0 cr.	Spring Semester

Course Descriptions:

PBHL H517: Fundamentals of Epidemiology 3.0 cr. Fall Semester

This course introduces basic epidemiologic concepts including determinants of health and patterns of disease in populations and implications of disease processes on prevention strategies and policy development. Among the topics to be covered are measures of morbidity and mortality, sources of data, and design of research studies and clinical trials.

PBHL P600: Epidemiological Research Methods 3.0 cr. Fall Semester

This course provides an in-depth presentation of the major research designs, analytical methods and practical issues specifically related to conducting research in the field of Epidemiology. Descriptive, observational and experimental designs are included. In addition, issues of ethics, protocol, data quality, instrument design and analysis are covered. Prerequisite: Biostatistics or Statistics.

PBHL P601: Advanced Epidemiology 3.0 cr. Spring Semester

This course provides students with an in-depth understanding of advanced epidemiologic concepts and an understanding of epidemiologic techniques not covered in other classes. Topics included will represent cutting edge techniques, philosophical issues and insights to appropriately conduct and interpret the findings of epidemiological studies. Prerequisite: PBHL P600 or equivalent.

Choose one course from the following:

PBHL P609: Infectious Disease Epidemiology 3.0 cr. Spring Semester

This course is designed to provide a basic overview of the infectious disease process, including disease agents, transmission routes, immunity and public health significance. The course introduces principles of infectious disease epidemiology, including outbreak investigation and surveillance, using case studies as examples. Concepts on globalization of disease, microbial ecology, and disease eradication are discussed. Prerequisite: PBHL H517 or equivalent.

PBHL P610: Chronic Disease Epidemiology 3.0 cr. Fall Semester

This course examines chronic health conditions from epidemiological perspectives. Concepts include distribution, determinants, diagnosis, measures of severity, treatment modalities, surveillance measures, survival and prognosis, and quality of care measures. Research methods, prevention strategies and screening tests are presented. Clinical experts present diagnosis and treatment methods. Prerequisite: PBHL H517 or equivalent.

PBHL P612: Patient-Centered Outcomes Research 3.0 cr. Spring Semester

The course is focused on patient-centered outcomes research in the health care field. The different types of patient-centered outcomes assessment tools and their application in determining patient health status, change in health status, and the effectiveness of health care interventions will be discussed.

Timetable: The Department of Public Health is seeking approval for the minor in Epidemiology so that students could begin in the fall of 2005.

Reviewed and Approved by MPH Curriculum Committee 9/2/04
Reviewed and Approved by MPH Program Committee 11/5/04

Proposal for a Minor in Public Health
Indiana University School of Medicine
Department of Public Health

Rationale: The Department of Public Health is proposing a rigorous, highly focused 12-credit hour minor in Public Health because the field of public health is growing in national and international importance, is integral to many areas of pursuit, enhances analytic and data-based management skills that are desirable for many doctoral level research projects, offers population-based research perspectives, offers skills that are of interest to the private and public sectors, and formally acknowledges the course work that doctoral students are currently taking as electives through the Department of Public Health.

Objectives: The minor in Public Health will provide students with concepts and principles of the research, field, theory and practice of public health so that they will be able to:

1. explain what public health is, how it works, and why it is important
2. advocate for public health programs and resources
3. identify and discuss the core functions and essential services of public health
4. identify historical or contemporary trends in society that affect/affected health directly or indirectly
5. explain the importance of personal and professional ethics in health education / health promotion; discuss the role of theory in designing appropriate health education / health promotion interventions
6. cite the overall significance and potential use of Healthy People 2010 in public health / community health education; identify the priority areas (based on Healthy People 2010) for eliminating health disparities in the US
7. explain the human-environment-health interrelationships that formulate human interaction with the environment
8. identify agents that adversely affect human health / safety and describe risk assessment strategies for environmental agents in human residential, occupational and community environment in the home, workplace and community
9. explain how risk can be effectively communicated to different groups, ranging from the lay public to the scientific and political community
10. explain how public health professionals and their counterparts from all scientific disciplines and levels of government are working to resolve contemporary environmental health problems
11. articulate the issues associated with environmental equity, environmental sustainability, biodiversity, globalization, intergenerational ethics, inter-regional ethics and inter-species ethics, as related to environmental health
12. assess the utility of emerging technologies for environmental monitoring and cite specific exemplary applications
13. define and discuss the basic concepts of epidemiology

14. interpret patterns of disease or risk observed in patterns of person, place or time characteristics
15. identify sources of existing data for potential studies and list the strengths and weaknesses of using secondary data
16. calculate measures of disease rates and measures of association between factors and diseases
17. use a statistical computer program (SPSS, SAS or other) to analyze and interpret data
18. understand how to conduct a community based health needs assessment
19. analyze public health problems using ethical, cultural, and historical frameworks and strategic thinking, evaluating their implications for public health practice
20. critique ethical, social, cultural, political, economic, historical, and legal dimensions of policies and programs, which affect the health of diverse populations
21. describe the impact of environmental, social, psychological, behavioral, and biological determinants of health and disease on policy development
22. design policy options for broad based community problems recognizing political, fiscal, and ethical parameters and constraints
23. make presentations in support of a particular public health proposal using demographic, statistical, programmatic, and scientific information

Students: The minor in Public Health offers the opportunity to draw together students from all health related graduate programs. It is anticipated that the minor in Public Health would be especially attractive to doctoral students in Schools of Nursing, Dentistry, Medicine, Health, Physical Education and Recreation, Health and Rehabilitative Sciences, and Public and Environmental Affairs. Based on the number of inquiries we have received from students and faculty, we anticipate a strong interest in this minor.

Faculty: Faculty advisors for the Public Health minor will be:

Dr. Stephen Jay, IU School of Medicine Department of Public Health

Dr. Cindy Stone, IU School of Nursing Department of Environments for Health

Dr. Enid Zwirn, IU School of Medicine Department of Public Health

Dr. Greg Steele, IU Department of Public Health

Academic Program: The curriculum for the 12 credit hour minor in Public Health is comprised of the following 4 required courses: H500, H501, H517 and H519. This minor provides students with a rigorous grounding in the background and application of public health. Satisfactory completion of the requirements for the minor in Public Health will be monitored by the student's minor advisor on their program/dissertation committee.

Required Courses for the 12-hour Minor in Public Health:

H500: Philosophy and Principles of Health Education	3.0 cr.	Spring
H501: US Health Care: Systems, Policies and Ethical Challenges	3.0 cr.	Fall

H517: Fundamentals of Epidemiology

3.0 cr. Fall

H519: Environmental Science in Public Health

3.0 cr. Summer

Course Descriptions:

PBHL H500: Philosophy/Principles of Health Education (3 cr.)

Students will learn the principles of health education and behavioral science and strategies for their application to health problems in communities and among special populations.

PBHL H501: US Health Care: Systems, Policies and Ethical Challenges (3 cr.)

This course explores components of the health care system and associated managerial challenges. Ideological paradigms that predict utilization and health behavior, guidelines for ethical analysis, the policy process, interaction of federal, state and local politics in formation of policies, and theoretical assumptions associated with major policy models are included

PBHL H517: Fundamentals of Epidemiology (3 cr.)

This course introduces basic epidemiologic concepts including determinants of health and patterns of disease in populations and implications of disease processes on prevention strategies and policy development. Among the topics to be covered are measures of morbidity and mortality, sources of data, and design of research studies and clinical trials.

PBHL H519: Environmental Science in Public Health (3 cr.)

This course examines national and international environmental factors that influence health such as population, toxic substances, energy, food quality and air and water quality. Students will discuss risk analysis as well as prevention strategies.

Timetable: The Department of Public Health is seeking approval for the minor in Public Health so that students could begin in the fall of 2005.

Reviewed and Approved by MPH Curriculum Committee 9/2/04
Reviewed and Approved by MPH Program Committee 11/5/04

Proposal for a Track in Quantitative Epidemiology

Indiana University School of Medicine
Department of Public Health

Rationale: The Department of Public Health is proposing a specialized track within the Epidemiology concentration for students admitted to the MPH Program who have a specialized interest in advanced statistical methods. This track would enable students in the Epidemiology concentration to focus their internship, culminating project, and coursework in epidemiology and quantitative methodology, and complete their degree requirements within the 43 credit hours required for the MPH degree.

The Department of Public Health received approval from the Commission on Higher Education to offer five concentrations in the MPH Program; however, since the inception of the program, very few students elected the Biostatistics concentration (1 student) and the Environmental Health concentration (4 students). With so few students interested in these two concentrations, the Department of Public Health determined that it was not financially feasible to continue to offer them at this time. The Department of Public Health would like to be responsive to the few MPH students who might be interested in quantitative methodology in public health by offering courses, internship experiences and projects that focus in this area. If the track is approved, this focus area can be acknowledged on the transcript.

Objectives: All MPH students begin the program with the “core” courses, after which the track in Quantitative Epidemiology will provide students with advanced statistical concepts and principles in public health research and practice so that they will be able to:

1. Describe theories and measures used in population health models.
2. Describe environmental, social and biological determinants of health and disease and their political, economic and legal contexts.
3. Demonstrate knowledge of statistical theory sufficient to understand and apply new techniques as presented in the statistical literature.
4. Apply public health sciences, including behavioral and social sciences, biostatistics, epidemiology, environmental public health, and prevention of chronic and infectious diseases and injuries.
5. Determine appropriate use of data and statistical methods for problem identification and resolution, program planning, implementation and evaluation.
6. Interact sensitively, effectively and professionally with persons from diverse cultural, socioeconomic, educational and professional backgrounds and lifestyles.
7. Use statistical and other software for data analysis and management.
8. Use quantitative and qualitative data and information for assessment, program management, policy proposals or intervention strategies.
9. Demonstrate ability to communicate with investigators and present results.

Students: It is anticipated that the track in Quantitative Epidemiology would attract MPH students who have an interest in advanced statistical methods in public health.

Faculty: The faculty advisor for the Quantitative Epidemiology track will be Dr. Greg Steele, IU School of Medicine Department of Public Health. Drs. Boukai and Katz participated in the discussions at the meetings and provided input regarding proper course selection and sequence of the courses offered through the Department of Mathematical Sciences. The four courses listed in the proposal for this track are offered by the Department of Mathematical Sciences. The prerequisites for the four courses include statistics, and MPH students will complete H517: Fundamentals of Epidemiology and G651: Biostatistics for Public Health prior to enrolling in the courses. Dr. Boukai was supportive of MPH students enrolling in the statistics courses in his department.

Academic Program: All courses for this track have been approved. No new courses are being proposed. Course descriptions are available on the Department of Public Health web site at www.pbhealth.iupui.edu and the Department of Mathematical Sciences web site at www.math.iupui.edu. The curriculum for the 43 credit hour track in Quantitative Epidemiology is comprised of the following required courses:

First Year

Fall Semester

PBHL H501	US Health Care: Systems, Policies and Ethical Challenges	3 cr.
PBHL H517	Fundamentals of Epidemiology	3 cr.
PBHL P501	Public Health Project Development/Program Management Seminar/Lab	1 cr.

Spring Semester

PBHL G651	Biostatistics for Public Health I	3 cr.
PBHL H500	Philosophy and Principles of Health Education	3 cr.
PBHL P502	Issues in Public Health Seminar II	1 cr.

Summer Session

PBHL H519	Environmental Science in Public Health	3 cr.
PBHL P503	Community Project	1 cr.

Second Year

Fall Semester

PBHL P600	Epidemiological Research Methods	3 cr.
STAT G652	Biostatistics II	3 cr.

Spring Semester

PBHL P601	Advanced Epidemiology	3 cr.
STAT S523	Categorical Data Analysis	3 cr.

Summer Session

PBHL P602	Internship w/ an Analytic Component	3 cr.
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Third Year

Fall Semester

PBHL P606	Seminar in Epidemiology	1 cr.
STAT S512	Applied Regression Analysis	3 cr.

	or		
STAT S522	Sampling and Survey Techniques		3 cr.
	or		
STAT S536	Introduction to Survival Analysis		3 cr.

Spring Semester

PBHL P704	Epidemiology Project w/ an Analytic Component		3 cr.
Elective	Elective in Epidemiology or Statistics		3 cr.

Total Credit Hours		<hr/>	43 cr.
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Timetable: The Department of Public Health is seeking approval for the track in Quantitative Epidemiology so that students could begin completing this track as soon as possible.

Proposal for a Track in Environmental Epidemiology

Indiana University School of Medicine Department of Public Health

Rationale: The Department of Public Health is proposing a specialized track within the Epidemiology concentration for students admitted to the MPH Program who have an interest in environmental science in public health. This track would enable students in the Epidemiology concentration to focus their internship experience, culminating project, and coursework in epidemiology and environmental health science, and complete their degree requirements within the 43 credit hours required for the MPH degree.

The Department of Public Health received approval from the Commission on Higher Education to offer five concentrations in the MPH Program; however, since the inception of the program, very few students elected the Biostatistics concentration (1 student) and the Environmental Health concentration (4 students). With so few students electing these two concentrations, the Department of Public Health determined that it was not financially feasible to continue to offer them at this time. Although the number of students in the Environmental Health concentration has been low, the Department of Public Health would like to be responsive to students who are interested in environmental public health issues, particularly in light of the identified need for public health preparedness after 9/11. This track would enable the Department of Public Health to offer courses, internship experiences and projects focused in environmental epidemiology.

Objectives: All MPH students begin the program with the “core” courses, after which the track in Environmental Epidemiology will provide students with concepts and principles of the research, field, theory and practice of environmental epidemiology so that they will be able to:

1. Describe theories and measures used in population health models.
2. Describe environmental, social and biological determinants of health and disease and their political, economic and legal contexts.
3. Identify environmental agents in the home, workplace, and community; identify pathways of human exposure to biological, chemical and physical hazards; and explain how these hazards cause acute and chronic diseases in humans.
4. Apply public health sciences, including behavioral and social sciences, biostatistics, epidemiology, environmental public health, and prevention of chronic and infectious diseases and injuries.
5. Assess and communicate the degree of risk posed by exposure to environmental agents.
6. Determine appropriate use of data and statistical methods for problem identification and resolution, program planning, implementation and evaluation.
7. Interact sensitively, effectively and professionally with persons from diverse cultural, socioeconomic, educational and professional backgrounds and lifestyles.
8. Understand the strengths and weaknesses of technical and behavioral interventions to reduce environmental risks.
9. Use quantitative and qualitative data and information for assessment, program management, policy proposals or intervention strategies.

Students: It is anticipated that the track in Environmental Epidemiology would attract students who have an interest in environmental science in public health. Employment for individuals in this track includes jobs in biological and chemical terrorism surveillance, identification / evaluation of environmental and occupational exposures associated with health risks, and environmental disease control.

Students with an environmental focus in the epidemiology concentration have a unique interest in epidemiological issues of environmental exposures and their human health effects. They are interested in evaluation of the health impacts of unintentional and intentional contaminants to our air, water, crops, etc., particularly in sensitive or vulnerable populations. If the track is approved, this environmental focus in epidemiology can be acknowledged on the transcript.

Faculty: The faculty advisor for the Environmental Epidemiology track will be Dr. Greg Steele, IU School of Medicine Department of Public Health.

Academic Program: The curriculum for the 43 credit hour track in Environmental Epidemiology is comprised of the following required courses

Required Courses for the 43-hour Track in Environmental Epidemiology:

All courses in this track have been approved. No new courses are being proposed for this track. Course descriptions are available on the Department of Public Health web site at www.pbhealth.iupui.edu.

First Year

Fall Semester

PBHL H501	US Health Care: Systems, Policies and Ethical Challenges	3 cr.
PBHL H517	Fundamentals of Epidemiology	3 cr.
PBHL P501	Public Health Project Development/Program Management Seminar/Lab	1 cr.

Spring Semester

PBHL G651	Biostatistics for Public Health I	3 cr.
PBHL H500	Philosophy and Principles of Health Education	3 cr.
PBHL P502	Issues in Public Health Seminar II	1 cr.

Summer Session

PBHL H519	Environmental Science in Public Health	3 cr.
PBHL P503	Community Project	1 cr.

Second Year

Fall Semester

PBHL P600	Epidemiological Research Methods	3 cr.
STAT G652	Biostatistics II	3 cr.

Spring Semester

PBHL P601	Advanced Epidemiology	3 cr.
PBHL E560	Environmental Risk Analysis	3 cr.

Summer Session

PBHL P602	Internship w/ an Environmental Component	3 cr.
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Third Year

Fall Semester

PBHL E520	Environmental Toxicology	3 cr.
PBHL P606	Seminar in Epidemiology	1 cr.

Spring Semester

PBHL P704	Epidemiology Project w/an Environmental Focus	3 cr.
PBHL P650	Readings in Public Health	3 cr.

Total Credit Hours	43 cr.
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Timetable: The Department of Public Health is seeking approval for the track in Environmental Epidemiology so that students could begin completing this track as soon as possible.