

APPROVED BY SENATE
04/22/2019



Proposal to the Senate Educational Policy Committee

PROPOSAL TITLE: Establishment of the Medical Scholars Program, a joint MD/PhD program

SPONSOR: Dr. James M. Slauch, Professor and Head of Microbiology, LAS; Biomedical and Translational Sciences, Carle Illinois College of Medicine, and Director of the (current) Medical Scholars Program

Dean King Li, Carle Illinois College of Medicine

Dean Wojtek Chodzko-Zajko, Graduate College

COLLEGE CONTACT: Dr. James M. Slauch, slauch@illinois.edu, 244-1956

BRIEF DESCRIPTION: The Carle Illinois College of Medicine (CI MED) and the UIUC Graduate College seek to establish a joint MD/PhD program, the Medical Scholars Program (MSP). Students in the program will earn an MD degree from the CI MED and a PhD from one of the existing PhD programs at UIUC. The MSP will carry on the long tradition of training outstanding physician-scholars on this campus, newly invigorated in the engineering-focused CI MED.

The CI MED selects for highly motivated students who have met rigorous prerequisites that will allow them to be successful in the innovative and challenging curriculum. Discovery, design, and innovation are infused into the medical curriculum. A subset of these students will choose to focus more deeply in research and earn a PhD in any one of the graduate programs available on campus. In the long-standing tradition of this campus, students may pursue graduate study in any discipline offered on campus, including biomedical sciences, engineering, the physical sciences, humanities and social sciences. Given their strong background and drive, these students will be highly desirable to the graduate programs.

Students will begin the program in the medical curriculum, completing the first phase (~2 years) of the case-driven, problem-based course work. After completing the USMLE Step 1 exam, they will join a graduate program and complete the PhD before returning to complete the 3rd and 4th years of medical school. This model is

consistent with the majority of MD/PhD programs in the country. The program will have various activities to keep students in their PhD years engaged in medicine and other programming to integrate the two curricula.

The program will be structured as a “joint degree” program (per Graduate College Policy; <https://grad.illinois.edu/gradhandbook/3/chapter2>). Most importantly, this will allow a graduate program to count up to 12 credit hours of medical school coursework toward completion of the PhD course requirements. The individual graduate programs will decide how much credit can be used to fulfill their requirements. The students will have gained considerable background knowledge in the medical curriculum.

CI MED medical students are required to complete a “capstone project” during their 4th year, in which they more fully develop one of their “idea projects”. Fourth year medical students must also complete a “data science project” to ensure they have the skills to deal with large data sets. These are more fully described in an appendix. Upon completion of the PhD and depending on the nature of the thesis work, the CI MED will waive the requirement for the capstone project or the data science project. Alternatively, on a case-by-case basis, the required number of weeks of electives could be reduced for MD/PhD students.

We request to maintain three policy exceptions that are in effect for current MSP students. First, we request an exception to the joint degree requirement that the two degrees be granted simultaneously. Rather, the individual degrees will be awarded upon completion of the respective requirements. Students interview for medical residency positions during the fourth year of medical school. Having been awarded the PhD degree is a significant advantage in competing for prestigious residency programs. Simply waiting to award the PhD until the end of M4 would put our students at a significant disadvantage. Second, we wish to retain the policy that MSP students are allowed 10 years to complete the PhD. Although our goal is for MD/PhD students to complete both degrees in 8-9 years, there is the possibility that students could, for sound academic reasons, interrupt PhD studies to return to medical school for further clinical training. Third, policy states that students must be enrolled in the term that they defend their PhD. For MSP students, they can be enrolled in either graduate school or medical school the semester they defend.

What happens if a student fails to ultimately complete both degrees? If a student earns the PhD (or an MS) using medical school coursework, but then fails to complete medical school, the coursework was completed and the educational outcome is the same. It is more common for a student to withdraw from the graduate program and complete medical school, in which case this policy has no impact.

(Please give a brief but concise description, not justification, of your proposal. For example, if proposing revisions to a curriculum, state specifically what is changing. Where applicable,

note whether stated program changes include additional requirements in the form of prerequisite courses. Requests for curriculum revisions must be accompanied by a table which clearly outlines the current requirements and the proposed revisions. This information may be submitted as an appendix. See Appendix A for an example. Please provide pertinent information only.)

JUSTIFICATION: Physician-Scholars who have clinical understanding and the skills to conduct state-of-the-art research are deemed critical for the future of biomedical research. Indeed, the National Institutes of Health have strongly supported MD/PhD training since 1964. The CI MED is selecting for highly motivated students. We know that a subset of these students will desire to complete a PhD. We anticipate that these students will be coveted by many graduate programs. The graduate and medical curricula are integrated and are being completed simultaneously, even though the degrees are granted at different times by the two programs. Obtaining both an MD and a PhD is not a trivial undertaking, and it is in the best academic interest of the student and the programs to reduce redundant coursework while maintaining a rigorous educational experience.

Although this is a new program with opportunities to creatively build on the novel CI MED curriculum, this campus has long experience with MD/PhD students managed through a joint degree program. We will take full advantage of that experience.

BUDGETARY AND STAFF IMPLICATIONS: *(Please respond to each of the following questions.)*

1) Resources

- a. How does the unit intend to financially support this proposal?

The students in this program will pay tuition while in the medical school training. While in the PhD training years, they will be funded with stipend and tuition waiver by the graduate program consistent with funding of their traditional PhD students. It is understood that the nature and level of this funding will differ between graduate programs and, therefore, individual students in the program will be supported at different levels. The students will participate in some medical school activities while in the graduate program as a means to integrate their studies. Examples include continued enrollment in the Family Medicine Clerkship, which is run as a weekly community out-patient clinic. This will maintain the student's clinical skills while in the graduate program. Scholarships will be provided to cover any medical school tuition charges associated with such activities.

- b. How will the unit create capacity or surplus to appropriately resource this program? If applicable, what functions or programs will the unit no longer support to create capacity?

The MD/PhD students will constitute a small subset of the MD students, estimated at two from each class. The position of Director of the MSP will be a part time administrative position for a research active faculty member. They will be assisted by ~1/4 FTE of an academic professional to assist with programming and coordination with the graduate programs. These functions will not diminish the capacity of the CI MED to serve the remaining MD students. They will be a relatively normal member of the given PhD program, again not requiring any additional capacities.

- c. Will the unit need to seek campus or other external resources? If so, please provide a summary of the sources and an indication of the approved support.

Once established, the MSP will seek funding from the NIH through the Medical Sciences Training Program (MSTP). This long-standing program from the National Institute of General Medical Sciences is focused on increasing the physician-scientist work force. Individual MD/PhD students are also eligible to apply for NIH NRSA F30 fellowships designed specifically for these joint programs. These fellowships fund the PhD and completion of the MD. We would anticipate a high rate of success given our experience with these fellowships and competitiveness of our anticipated cohort of students.

- d. Please provide a letter of acknowledgment from the college that outlines the financial arrangements for the proposed program.

2) Resource Implications

- a. Please address the impact on faculty resources including the changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc.

These students are not adding to the overall number of students in either the CI MED or the graduate programs. Rather, they are taking an alternative route through the programs. Thus, we do not anticipate additional faculty or other educational resources beyond the administration of the program.

- b. Please address the impact on course enrollment in other units and provide an explanation of discussions with representatives of those units. (*A letter of acknowledgement from units impacted should be included.*)

See 2a

- c. Please address the impact on the University Library (*A letter of estimated impact from the University Librarian must be included for all new program proposals. If the impact is above and beyond normal library business practices, describe provisions for how this will be resourced.*)

See 2a

- d. Please address the impact on technology and space (e.g. computer use, laboratory use, equipment, etc.)

See 2a

For new degree programs only:

- 3) Briefly describe how this program will support the University's mission, focus, and/or current priorities. Include specific objectives and measurable outcomes that demonstrate the program's consistency with and centrality to that mission.
- 4) Please provide an analysis of the market demand for this degree program. What market indicators are driving this proposal? What type of employment outlook should these graduates expect? What resources will be provided to assist students with job placement?
- 5) If this is a proposed graduate program, please discuss the programs intended use of waivers. If the program is dependent on waivers, how will the unit compensate for lost tuition revenue?

DESIRED EFFECTIVE DATE: *(Proposals may not be implemented until they go through all necessary levels of approval. The Provost's office will inform the sponsors in writing when they may implement their proposal. Proposed changes may not be publicized as final on any web sites, printed documents, etc. until written confirmation of final approval is issued.)*

The program will formally begin with the incoming CI MED class of summer 2019.

STATEMENT FOR PROGRAMS OF STUDY CATALOG: *(All proposals must include either a new or revised version of the entry in the Programs of Study Catalog, if applicable. Entries will be published as approved by the Senate. Future changes in the statement for Programs of Study Catalog which reflect changes in the curriculum, must go through the normal review process at the appropriate levels.)*

Medical Scholars Program

Website: TBD

Program Director: James M. Slauch
Medical Scholars Program
320 Illini Union Bookstore MC-325
807 South Wright Street
Champaign, Illinois 61820

(217) 300-5700

E-mail: TBD

Graduate Degree Programs

The Medical Scholars Program enables students to combine the study of medicine leading to the M.D. with graduate study in a second field leading to the Ph.D. The program seeks to produce leaders uniquely qualified and motivated to address the issues shaping modern medical practice, the health care system, and biomedical research; issues related to the profound advances in science and technology; and those that arise from the pressures of socioeconomic forces.

Admission

To enter the Medical Scholars Program (MSP), applicants must meet the admission requirements of, and be accepted by, both the Carle Illinois College of Medicine and the Graduate College. Prospective students must demonstrate a potential for creativity and original research, a sense of social awareness and service, academic excellence, competence in leadership and interpersonal relationships, and an appropriate rationale for their interest in combined study.

Students apply to the Carle Illinois College of Medicine via AMCAS. (See <https://medicine.illinois.edu/admissions/>) Only U.S. citizens and permanent residents are eligible to apply. State residency is not a factor. Students can apply to the MD/PhD track either by using the MD/PhD option in AMCAS or by submitting a supplemental application. Those applicants not accepted to the MD/PhD track will still be considered for MD admissions, unless they expressly state otherwise on their application. Students admitted to the MD/PhD track will subsequently explore an appropriate graduate program based on their research interests. Students will be required to submit a graduate application and be approved for admission by the graduate program and Graduate College. The Medical College Admissions Test (MCAT) is required for admission to medical school; most graduate programs accept the MCAT in lieu of the GRE.

Approved Areas of Specialization

The University offers graduate study in more than 100 fields in which MSP applicants may propose combined degree study. Indeed, MSP students can pursue graduate study leading to a PhD in any discipline offered on campus. In addition to the traditional biomedical sciences, students may pursue graduate study in engineering, the physical sciences, humanities and social sciences.

Requirements


Students in the Medical Scholars Program are expected to fulfill all the degree requirements of both the Carle Illinois College of Medicine and the graduate PhD program. At their discretion, graduate programs allow medical school classes to count toward completion of a portion of the graduate degree. Faculty advisors from the medical school and from the graduate unit help students set realistic long-term study plans that integrate the two curricula.

Financial Aid

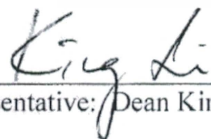
Medical Scholars are responsible for paying tuition while in the medical curriculum. MSP students will receive financial support from their graduate program during the years they spend primarily in graduate work. This support is in the form of a research assistantship, teaching assistantship, or fellowship. Students are highly encouraged to apply for fellowship support from the National Institutes of Health that could fund the last two years of medical school.

CLEARANCES: (Clearances should include signatures and dates of approval. **These signatures must appear on a separate sheet.** If multiple departments or colleges are sponsoring the proposal, please add the appropriate signature lines below.)

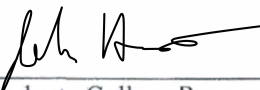
Signatures:


Unit Representative: Dr. James M. Slauch

1/16/19
Date:


College Representative: Dean King Li

01/15/19
Date:


Graduate College Representative: John C. Hart

3/12/19
Date:

Appendices:

1. The letter of acknowledgment from the college that outlines the financial arrangements for the program
2. Schematic comparison of traditional MD and MD/PhD curricula
3. Proposed guidance for graduate programs accepting MD/PhD students
4. Description of Capstone and Data Science Projects
5. Letters/emails of support from University Deans

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

CARLE ILLINOIS COLLEGE OF MEDICINE
320 Illini Union Bookstore, MC 325
807 S. Wright Street
Champaign, Illinois 61820



January 11th, 2019

Financial Arrangements for the Proposed MD/PhD Medical Scholars Program

As outlined in the proposal, we anticipate approximately two students per year joining the MD/PhD track. These do not constitute additional students in the medical school. Rather, they are taking an alternative track through the program.

The students in this program will pay tuition while in the medical school training. Thus, they will not affect tuition income. While in the PhD training years, they will be funded with stipend and tuition waiver by the graduate program consistent with funding of their traditional PhD students. The students will participate in some medical school activities while in the graduate program as a means to integrate their studies (primarily participating in the family medicine clinical clerkship). Scholarships will be provided to cover any medical school tuition charges associated with these activities, and the actual impact on the medical school classes will be minimal.

The position of Director of the MSP will be a part time administrative position for a research active faculty member. They will be assisted by ~1/3 FTE of an academic professional to assist with programming and coordination with the graduate programs. These functions will not diminish the capacity of the CI MED to serve the remaining MD students. They will be a relatively normal member of the given PhD program, again not requiring any additional capacities.

Once established, the MSP will seek funding from the NIH through the Medical Sciences Training Program (MSTP). This long-standing program from the National Institute of General Medical Sciences is focused on increasing the physician-scientist work force. Individual MD/PhD students are also eligible to apply for NIH NRSA F30 fellowships designed specifically for these joint programs. These fellowships fund the PhD and completion of the MD. We would anticipate a high rate of success given our experience with these fellowships and competitiveness of our anticipated cohort of students. These fellowships include tuition payments to the graduate program or medical school, depending on the primary enrollment of the student in any given semester. We look forward to carrying on the long tradition of training outstanding physician scholars at the University of Illinois.

Sincerely yours,

King C. Li, M.D., M.B.A.
Dean, Carle Illinois College of Medicine

Comparison of Traditional and MD/PhD Curricula

Traditional MD -Year 1

Phase 1																														
	7/2	7/9	7/16	7/23	7/30	8/6	8/13	8/20	8/27	9/3	9/10	9/17	9/24	10/1	10/8	10/15	10/22	10/29	11/5	11/12	11/19	11/26	12/3	12/10	12/17	12/24	12/31			
Orientation	Foundational Elements 6 weeks						Break	Cardiovascular 6 weeks						Respiratory 5 weeks					Renal	Renal 5 weeks					Winter Break					
	Engineering Innovation Ethics & Humanities							Engineering Innovation Ethics & Humanities						Engineering Innovation Ethics & Humanities						Eng. Inv Ethics & Humanities										
	Population Health							Physical Diagnosis I																						
	Clinical Integration I							Clinical Integration I																						
														Thanksgiving						Phy. Diagnosis I						Clin. Integration I				

Phase 1																															
	1/7	1/14	1/21	1/28	2/4	2/11	2/18	2/25	3/4	3/11	3/18	3/25	4/1	4/8	4/15	4/22	4/29	5/6	5/13	5/20	5/27	6/3	6/10	6/17	6/24	7/1					
	Clinical Neuroscience 8 weeks								Musculo.	Spring Break	Musculoskeletal 7 weeks							Digestion 4 weeks				Nutrition & Metabolism 3 weeks			Discovery Electives 3 weeks						
	Engineering Innovation Ethics & Humanities								Eng. Inv Ethics...		Engineering Innovation Ethics & Humanities							Eng. Inv Ethics & Humanities				Eng. Inv Ethics & Humanitie									
	Physical Diagnosis II								Physical Diagnosis II																						
	Clinical Integration II								Clinical Integration II																						

Year 2

Phase 1																														
	7/8	7/15	7/22	7/29	8/5	8/12	8/19	8/26	9/2	9/9	9/16	9/23	9/30	10/7	10/14	10/21	10/28	11/4	11/11	11/18	11/25	12/2	12/9	12/16	12/23	12/30				
	Endocrinology 4 weeks				Genito-urinary 3 weeks			Break	Genito-	Women's Health 4 weeks				Obstetrics 3 weeks			Hematology & Oncology 4 weeks				Immuno	Infection / Immunity 4 weeks				Winter Break				
	Eng. Inv				Eng. Inv					Eng. Inv				Eng. Inv			Eng. Inv					Eng. Inv								
	Ethics & Humanities				Ethics...					Ethics & Humanities				Ethics & Humanities			Ethics & Humanities					Ethics..								
	Family Medicine Clerkship						Family Medicine Clerkship																	Clerkship						

Phase 1														Phase 2																
	1/6	1/13	1/20	1/27	2/3	2/10	2/17	2/24	3/2	3/9	3/16	3/23	3/30	4/6	4/13	4/20	4/27	5/4	5/11	5/18	5/25	6/1	6/8	6/15	6/22	6/29				
	Step 1 Review 4 weeks				Step 1 Exam	Break	Discovery Electives 3 weeks			Internal Medicine 10 weeks							OB-Gyn 5 weeks					Pediatrics 5 wks								
	Ethics & Humanities							Ethics & Humanities																						
	Engineering Rounds/IDEA																													
	Family Medicine Student Clinic																													

Year 3

Phase 2																									
7/6	7/13	7/20	7/27	8/3	8/10	8/17	8/24	8/31	9/7	9/14	9/21	9/28	10/5	10/12	10/19	10/26	11/2	11/9	11/16	11/23	11/30	12/7	12/14	12/21	12/28
Pediatrics (cont.)			Electives 10 weeks										Surgery 10 weeks							Elective	Winter Break				
Humanities			Ethics & Humanities										Ethics & Humanities												
Engineering Rounds/IDEA																									
Family Medicine Student Clinic																									

Phase 2										Phase 3															
1/4	1/11	1/18	1/25	2/1	2/8	2/15	2/22	3/1	3/8	3/15	3/22	3/29	4/5	4/12	4/19	4/26	5/3	5/10	5/17	5/24	5/31	6/7	6/14	6/21	6/28
Neurology 4 weeks				Break	Psychiatry 4 weeks				Gateway OSCE	Internal Medicine or Surgery Sub-I 4 weeks				Required Clinical Electives 20 weeks total											
Ethics & Humanities										Ethics & Humanities				Ethics & Humanities											
Engineering Rounds/IDEA										Capstone Project															
Family Medicine Student Clinic										Data Science Project															

Year 4

Phase 3																									
7/5	7/12	7/19	7/26	8/2	8/9	8/16	8/23	8/30	9/6	9/13	9/20	9/27	10/4	10/11	10/18	10/25	11/1	11/8	11/15	11/22	11/29	12/6	12/13	12/20	12/27
Required Clinical Electives 20 weeks total (cont.)								Innovation Week	Clinical, Research, & Engineering Electives						Vacation and Interviews 10 weeks								Winter Break		
Ethics & Humanities									Ethics & Humanities																
Capstone Project																									
Data Science Project																									

Phase 3																		
1/3	1/10	1/17	1/24	1/31	2/7	2/14	2/21	2/28	3/7	3/14	3/21	3/28	4/4	4/11	4/18	4/25	5/2	5/9
Clinical, Research, & Engineering Electives 8 weeks total												Innovation Week	Career Boot Camp				Graduation	
Ethics & Humanities																		
Capstone Project																		
Data Science Project																		

MD/PhD Track -Year 1

Phase 1																														
	7/2	7/9	7/16	7/23	7/30	8/6	8/13	8/20	8/27	9/3	9/10	9/17	9/24	10/1	10/8	10/15	10/22	10/29	11/5	11/12	11/19	11/26	12/3	12/10	12/17	12/24	12/31			
Orientation	Foundational Elements 6 weeks						Break	Cardiovascular 6 weeks						Respiratory 5 weeks					Renal	Thanksgiving	Renal 5 weeks					Winter Break				
	Engineering Innovation Ethics & Humanities							Engineering Innovation Ethics & Humanities						Engineering Innovation Ethics & Humanities							Eng. Inv Ethics & Humanities									
	Population Health							Physical Diagnosis I																Phy. Diagnosis I						
	Clinical Integration I							Clinical Integration I																Clin. Integration I						

Phase 1																											
	1/7	1/14	1/21	1/28	2/4	2/11	2/18	2/25	3/4	3/11	3/18	3/25	4/1	4/8	4/15	4/22	4/29	5/6	5/13	5/20	5/27	6/3	6/10	6/17	6/24	7/1	
	Clinical Neuroscience 8 weeks								Musculo.	Spring Break	Musculoskeletal 7 weeks							Digestion 4 weeks				Nutrition & Metabolism 3 weeks			Discovery Electives 3 weeks		
	Engineering Innovation Ethics & Humanities								Eng. Inv Ethics...		Engineering Innovation Ethics & Humanities							Eng. Inv Ethics & Humanities				Eng. Inv Ethics & Humanities					
	Physical Diagnosis II								Physical Diagnosis II																		
	Clinical Integration II								Clinical Integration II																		

Year 2

Phase 1																																	
	7/8	7/15	7/22	7/29	8/5	8/12	8/19	8/26	9/2	9/9	9/16	9/23	9/30	10/7	10/14	10/21	10/28	11/4	11/11	11/18	11/25	12/2	12/9	12/16	12/23	12/30							
	Endocrinology 4 weeks				Genito-urinary 3 weeks		Break	Genito-	Women's Health 4 weeks				Obstetrics 3 weeks			Hematology & Oncology 4 weeks				Immuno	Thanksgiving	Infection / Immunity 4 weeks				Winter Break							
	Eng. Inv				Eng. Inv				Eng. Inv				Eng. Inv			Eng. Inv						Eng. Inv											
	Ethics & Humanities				Ethics...				Ethics & Humanities				Ethics & Humanities			Ethics & Humanities						Ethics..											
	Family Medicine Clerkship								Family Medicine Clerkship																Clerkship								

Phase 1										Phase 2										PhD								
	1/6	1/13	1/20	1/27	2/3	2/10	2/17	2/24	3/2	3/9	3/16	3/23	3/30	4/6	4/13	4/20	4/27	5/4	5/11	5/18	5/25	6/1	6/8	6/15	6/22	6/29		
	Step 1 Review 4 weeks				Step 1 Exam	Break	Discovery Electives 3 weeks				Internal Medicine 10 weeks										PhD Training							
							Ethics & Humanities																					
							Engineering Rounds/ll																					
							Family Medicine Student																					

Year 3

PhD																												
	7/6	7/13	7/20	7/27	8/3	8/10	8/17	8/24	8/31	9/7	9/14	9/21	9/28	10/5	10/12	10/19	10/26	11/2	11/9	11/16	11/23	11/30	12/7	12/14	12/21	12/28		
	PhD Training																								Winter Break			

Years 3 - 7

PhD														PhD													
1/7	1/14	1/21	1/28	2/4	2/11	2/18	2/25	3/4	3/11	3/18	3/25	10/7	10/14	10/21	10/28	11/4	11/11	11/18	11/25	12/2	12/9	12/16	12/23	12/30			
PhD Training														PhD Training													
																							Winter Break				

Year 7

PhD																									
1/6	1/13	1/20	1/27	2/3	2/10	2/17	2/24	3/2	3/9	3/16	3/23	3/30	4/6	4/13	4/20	4/27	5/4	5/11	5/18	5/25	6/1	6/8	6/15	6/22	6/29
PhD Training and Defense														OB-Gyn 5 weeks					Pediatrics 5 wks						
																							Ethics & Humanities		
																							IDEA		
																							Clinic		

Phase 2										Phase 3															
1/4	1/11	1/18	1/25	2/1	2/8	2/15	2/22	3/1	3/8	3/15	3/22	3/29	4/5	4/12	4/19	4/26	5/3	5/10	5/17	5/24	5/31	6/7	6/14	6/21	6/28
Neurology 4 weeks				Break	Psychiatry 4 weeks				Gateway OSCE	Internal Medicine or Surgery Sub-I 4 weeks				Required Clinical Electives 20 weeks total											
Ethics & Humanities										Ethics & Humanities				Ethics & Humanities											
Engineering Rounds/IDEA										Capstone Project															
Family Medicine Student Clinic										Data Science Project															

Year 8

Phase 3																									
7/5	7/12	7/19	7/26	8/2	8/9	8/16	8/23	8/30	9/6	9/13	9/20	9/27	10/4	10/11	10/18	10/25	11/1	11/8	11/15	11/22	11/29	12/6	12/13	12/20	12/27
Required Clinical Electives 20 weeks total (cont.)								Innovation Week	Clinical, Research, & Engineering Electives						Vacation and Interviews 10 weeks										Winter Break
Ethics & Humanities								Ethics & Humanities																	
Capstone Project																									
Data Science Project																									

Phase 3																		
1/3	1/10	1/17	1/24	1/31	2/7	2/14	2/21	2/28	3/7	3/14	3/21	3/28	4/4	4/11	4/18	4/25	5/2	5/9
Clinical, Research, & Engineering Electives 8 weeks total												Innovation Week	Career Boot Camp				Graduation	
Ethics & Humanities																		
Capstone Project																		
Data Science Project																		

Recreation of the Medical Scholars Program – Proposal to Graduate Programs

We intend to re-establish the Medical Scholars MD/PhD Program in the new Carle Illinois College of Medicine (CI MED). The proposed structure is consistent with most MD/PhD programs in the country with significant differences from the way the former MSP was structured. Here we outline the new program and expectations of the participating graduate programs.

The CICOM is selecting for highly motivated students. We know that a subset of these students will desire to complete a PhD. We anticipate that perhaps **two students per class** will choose the dual degree and that these highly motivated students will be coveted by many graduate programs.

Overview

Students will begin the program in the medical curriculum, completing the first ~2 years of the case-driven, problem-based course work. After completing the USMLE Step 1 exam, they will join the graduate program in either summer after the second year or the next fall semester and complete the PhD before returning to complete the 3rd and 4th years of medical school. The program will have various activities to keep students in their PhD years engaged in medicine and other programming to integrate the two curricula. The goal will be to maintain clinical skills and involvement.

The program will be structured as a “joint degree” program. Most importantly, this will allow a graduate program to count up to 12 credit hours of medical school coursework toward completion of the PhD course requirements. Each individual graduate program will decide how this credit can be used to fulfill its requirements. The students will have gained considerable background knowledge in the medical curriculum.

CI MED medical students are required to complete a “capstone project” during their 4th year, in which they more fully develop one of their “idea projects”. Fourth year medical students must also complete a “data science project” to ensure they have the skills to deal with large data sets. Upon completion of the PhD and depending on the nature of the thesis work, the CI MED will waive the requirement for the capstone project or the data science project. Alternatively, the required number of weeks of electives could be reduced for MD/PhD students.

Specifics

We anticipate that the number of MSP students in any given graduate program will be very small. We are therefore proposing that admissions, curricula, and funding be handled on an individualized basis within some pre-established guidelines. In all cases, the students must meet the degree expectations set forth by the graduate program. The guidelines below are designed to coordinate admissions and facilitate timely completion of the PhD requirements.

1) Admission into the program

We propose that students be admitted to the CI MED in the MD/PhD track but without formal admission to any graduate program. These students will then discuss their options with the

graduate programs and separately gain admission to a program via application to the Graduate College to begin after their second year. This avoids the potential problems that arise from true joint recruiting and admission to both the MD and PhD programs. Namely, medical school admissions will begin early in the fall semester for those students starting the next summer while graduate programs normally do admissions in the spring. Also, the graduate program would be admitting a student who will not start in the graduate program for at least 2.5 years. It is difficult to make commitments under these circumstances. This will also allow time for the student to make a more informed decision about the most appropriate graduate program to meet their goals. Given the relatively small number of students, their record of accomplishment, and the general support from the graduate programs, we anticipate that the students will easily match into a graduate program. If, for some reason, the student is not admitted to a graduate program, they may continue as a traditional medical student. Of course the offer letter admitting them to the MD/PhD track will explicitly list this caveat, along with the requirement that they maintain good academic standing during the first phase of medical school.

2) Timing for beginning the graduate program

The students will complete the Step 1 exam and initial clinical rotations and be ready to enter the graduate program in the summer after their second year. Therefore, they will be out of sync with most incoming students. There will be some leeway in this timing, in that students could continue their clinical rotations and begin graduate school at the beginning of the fall semester. The ideal scenario is that the student knows what thesis group they will be joining and simply begins their research as soon as possible. (See below.)

3) Funding

We do not currently intend to fund students for the first stage (2 years) of medical school. Once they join the graduate program, it is expected that they will be funded the same as any other graduate student in the program, ideally in the form of an RA or fellowship, with a competitive stipend. Although they will likely be participating in some med school activities to remain engaged in clinical medicine, there will be no financial implications for the graduate program.

All students in the program will be required to apply for an F30 MD/PhD fellowship from the NIH. These applications require some preliminary data, so students would likely apply after ~ 1 year in the graduate program. These fellowships would fund the student through the end of the graduate program as well as the last two years of medical school. We anticipate that the MSP students will be highly competitive and we have had considerable success and experience with these fellowships in the legacy program.

Once established, the MSP will apply for MSTP funding from the NIH, which would allow us to fund students during the first phase of medical school.

4) Overall requirements

Obtaining both an MD and a PhD is not a trivial undertaking, and it is in the best academic interest of the student and the programs to facilitate completion of the PhD as quickly as possible, ideally within four years. This requires that the students begin their thesis research immediately upon entering the program and that they focus primarily on that research.

Methods to decrease time to degree include reducing redundant coursework while maintaining a rigorous educational experience. The CI MED is selecting for highly accomplished and

motivated students who enter the program with very strong backgrounds, which, at a minimum, includes both the normal premedical training plus a significant math and/or computational background. Furthermore, the students will enter the graduate program after completing a rigorous 2-year curriculum providing a broad background in the basic biomedical sciences and engineering principles, as well as clinical medicine. Thus, these students are more academically prepared than most incoming graduate students. The joint degree program allows for the graduate program to reduce the required course work by up to 12 credits. We propose that the graduate program carefully examine the student's background and research goals and have them complete only the formal coursework required for their research, while fully meeting the degree requirements.

We also propose that the students essentially be a "direct admit" to work with the advisor of their choice. This would allow them to start immediately on their thesis project. Exploration of possible programs and advisors could take place during the first phase of medical school. This could include detailed discussions with potential mentors, attending group meetings, etc. The student might want to do a short rotation or two, either working this into the first phase of medical school or in the spring after taking the Step 1 exam. A student could be accepted into a group on a trial basis. However, we would ask that the program not require formal laboratory rotations in order that the student more quickly begin working on their thesis research.

As stated above, we expect MD/PhD students to be funded, ideally through an RA or fellowship. Having these students serve as TAs will likely slow their progress in research. Moreover, training in peer education is integrated throughout the medical curriculum, negating the argument that serving as a TA while a PhD student is critical for training. However, funding is ultimately at the discretion of the graduate program. Moreover, some students may wish to TA to enhance their experience.

We are striving for rigorous research training, but we would also ask that the program and thesis advisor think carefully about the project and monitor the progress of the student with goal of completing the PhD in four years. Certain disciplines could require additional time for completion of the PhD. There is some leeway in the timing that students return to the medical curriculum, but they need to begin in the summer or early fall in order to be prepared for the residency match system and graduate two academic years later.

Please direct all questions to Jim Slauch, slauch@illinois.edu

Description of the Capstone and Data Science Projects

As stated, upon completion of the PhD, the CI MED could waive the requirement for the capstone project or the data science project. This decision will be on a case-by-case basis dependent on whether the nature and content of the PhD is deemed to have essentially fulfilled one of these requirements. For example, one can imagine that a thesis was focused on analysis of “big data” sets and, therefore, the Data Science Project becomes redundant. If the thesis does not fulfil these requirements, the required number of weeks of electives could be reduced for MD/PhD students.

Currently, the policies and syllabi associated with the Capstone and Data Science Projects are still being finalized. To summarize, the CI MED curriculum includes three “Innovation” courses: an IDEA (Innovation, Design, Engineering, and Analysis) Projects course, Capstone Project course, and Data Science Project course. The IDEA Projects course is a 1-year course that is to be taken in Phase 2 of our curriculum, after the organ/system-based course modules, and when our students begin their required clinical clerkships in the hospital. The IDEA Projects course is designed to develop observation, problem identification, ideation, creativity, and solution-finding skills. Students will be required to identify one problem per clerkship (for each of the 7 required clerkships) that can be addressed by their proposed technological solution. From these 7 ideas, we expect each student to select one for further development/refinement as their Capstone Project. The Capstone Project course is taken in Phase 3 (final phase) of the curriculum and runs for roughly 14 months. Capstone Projects are student-led team-based projects, with teams to be comprised of a diverse group including medical, graduate, and business students, faculty mentors, physicians, and medical staff. Course content is designed to expand on the material from the IDEA Projects course to additionally include medical device design, federal regulatory (FDA) and reimbursement requirements, intellectual property identification, patenting, and protection, ergonomic, human factors, IRB, safety, professional, and ethical responsibilities, integration/adoption of new technologies into patient workflow and the healthcare systems, and finally business plan development. The Data Science Project course is also expected to be completed during Phase 3 of the curriculum, but could begin at any time. The instructional content of this course is designed to teach skills on critically evaluating published clinical studies and outcomes, meta-analysis, data collection, data analysis methods and techniques, and introductions to various commercial software packages and large-data analysis approaches. Each student will be required to complete his/her own Data Science Project using data pulled from public databases, repositories, the scientific literature, or data sources used by university faculty for their research. Each of these Innovation Project courses have been developed by a team of three co-directors with diverse expertise (physician, engineer/scientist, business). Course co-directors will be responsible for defining project expectations and qualifying criteria, developing course syllabi, mentoring and guiding students and teams, and assessing competencies, evaluating performance, and tracking outcomes.

The following was sent to the Deans of Schools and Colleges on campus. Their responses follow.

Dean X,

The **Medical Scholars Program (MSP)** is the long-standing MD/PhD program on this campus. In our 40-year history, the program has trained 338 MD/PhD as well as 32 MD/JD, and 30 MD/MBA, MD/MFA or MD/MSW scholars. We are proud of the breadth of the PhD programs participating in the MSP, representing every college in the University. We have trained physician scholars in the sciences, social sciences and humanities, making the program unique in the country. Given the phasing out of the Urbana site of the UI College of Medicine, the MSP stopped admitting new students after 2015.

We intend to re-establish the Medical Scholars MD/PhD Program in the new Carle Illinois College of Medicine (CI MED). The proposed structure is consistent with most MD/PhD programs in the country with some differences from the way the former MSP was structured. However, we are fully committed to maintaining the breadth of PhD programs available to our students. The program will start small, with approximately two students per year.

The program will be structured as a “joint degree” program, integrating the two curricula. Most importantly, this will allow a graduate program to count up to 12 credit hours of medical school coursework toward completion of the PhD course requirements. Each individual graduate program will decide how this credit can be used to fulfill its requirements. The CICOM is selecting for highly motivated students who will have gained considerable background knowledge during the first phase of the medical curriculum, completed before starting the graduate program.

The MSP is submitting the attached proposal to the Senate Committee on Educational Policy via the Graduate College Executive Committee. Also included is the “Proposal to Graduate Programs” that describes the admissions process and suggestions for facilitating success for MD/PhD students.

I am seeking your support for this proposal. If you are willing, please send me an email to that effect.

The Medical Scholars Program recruits a unique cadre of students that enhance graduate programs and research across campus. We look forward to continuing our long tradition of training outstanding physician scholars.

Of course I will be happy to respond to any questions or concerns.

Thank you,

Jim Slauch

James M. Slauch, PhD
Professor and Head of Microbiology
Director, Medical Scholars Program
217-244-1956
slauch@illinois.edu

Dean Kidwell, College of ACES

From: Kidwell, Kimberlee K <kkidwell@illinois.edu>
Sent: Tuesday, December 18, 2018 4:33 PM
To: Slauch, James McClurg <slauch@illinois.edu>
Cc: Li, King C <kingli@illinois.edu>
Subject: RE: Re-establishing the Medical Scholars Program

James,
Please forgive my delayed response. With the end of the semester closing in on us, I just meet with my leadership team about this request.

The College of ACES supports this proposal. We wish you luck with re-establishing the program.

With warm regards,
Kim

Dr. Kim Kidwell, Dean
Robert A. Easter Chair
College of Agricultural, Consumer, and Environmental Sciences (ACES)
227 Mumford Hall, MC-710
1301 West Gregory Drive
Urbana, IL 61801
217-333-0460
kkidwell@illinois.edu

Dean Hanley-Maxwell, College of Applied Health Sciences

From: Hanley-Maxwell, Cheryl D <cherylh@illinois.edu>
Sent: Friday, December 7, 2018 12:53 PM
To: Slauch, James McClurg <slauch@illinois.edu>
Cc: Li, King C <kingli@illinois.edu>
Subject: RE: Re-establishing the Medical Scholars Program

Hello Jim – I have checked around the College and AHS is very much in support of re-establishing the Medical Scholars MD/PhD program. We have had a number of students from the past program and found them to be excellent students.

Cheryl

Cheryl Hanley-Maxwell, PhD
Dean
College of Applied Health Sciences
110 Huff Hall, MC-586
1206 South Fourth Street
Champaign, IL 61820
217-333-2131 (phone)
217-333-0404 (fax)
url: www.ahs.illinois.edu

Dean Anderson, College of Education

From: Anderson, James D <janders@illinois.edu>
Sent: Friday, November 30, 2018 7:42 PM
To: Slauch, James McClurg <slauch@illinois.edu>
Cc: Li, King C <kingli@illinois.edu>
Subject: Re: Re-establishing the Medical Scholars Program

Dear Jim Slauch,
I strongly support your effort to re-establish the Medical Scholars MD/PhD program in the new Carle Illinois College of Medicine.
Jim Anderson



COLLEGE OF ENGINEERING

Office of the Dean
306 Engineering Hall, MC-266
1308 W. Green St.
Urbana, IL 61801

December 20, 2018

Dear Professor Slauch,

Thank you for the opportunity to consider your request to re-establish the Medical Scholars MD/PhD Program in the new Carle Illinois College of Medicine. The College of Engineering has found the Medical Scholars program to be beneficial to doctoral students in engineering and a positive attribute of our university when recruiting talented students to our programs. We have 46 alumni and 12 current students completing the legacy MD/PhD program with the University of Illinois at Chicago College of Medicine.

The College of Engineering supports the restructure of the program as outlined in the curriculum proposal and intends to encourage Engineering Departments to make the joint MD/PhD program available to their students once it is established.

If you have any questions, please contact us.

Sincerely,

A handwritten signature in black ink, appearing to read 'Rashid Bashir', written over a horizontal line.

Rashid Bashir, Dean
Grainger Distinguished Chair in Engineering
Professor of Bioengineering

Dean Brown, Gies College of Business

From: Brown, Jeffrey R <brownjr@illinois.edu>
Sent: Monday, December 3, 2018 8:04 AM
To: Slauch, James McClurg <slauch@illinois.edu>
Cc: Li, King C <kingli@illinois.edu>
Subject: Re: Re-establishing the Medical Scholars Program

Jim,

I hope you are well.

I am quite happy to express my support on behalf of the Gies College of Business for the Medical Scholars Program. We are excited to see the College of Medicine moving forward with so many strategic initiatives.

Please let me know if you need any additional information from our College.

Jeff

Dean Hu, College of Liberal Arts and Sciences

From: Hu, Feng Sheng <fshu@illinois.edu>
Sent: Thursday, December 6, 2018 2:04 PM
To: Slauch, James McClurg <slauch@illinois.edu>
Cc: Li, King C <kingli@illinois.edu>
Subject: Re: Re-establishing the Medical Scholars Program

Dear Jim,

LAS supports this proposal.

Best,
Feng Sheng

Feng Sheng Hu
Harry E. Preble Dean
Ralph E. Grim Professor
COLLEGE OF LIBERAL ARTS & SCIENCES
University of Illinois at Urbana-Champaign
2090 Lincoln Hall | 702 S. Wright Street | Urbana, IL 61801
P: (217) 333-1350 F: (217) 333-9142
fshu@illinois.edu

Dean Sulkin, College of Media

From: Sulkin, Tracy <tsulkin@illinois.edu>
Sent: Sunday, December 2, 2018 4:17 PM
To: Slauch, James McClurg <slauch@illinois.edu>
Cc: Li, King C <kingli@illinois.edu>
Subject: RE: Re-establishing the Medical Scholars Program

Jim,

Thanks for your email. My colleagues in the College of Media were pleased to be a part of the previous iteration of the MSP, and we are in support of your proposal to re-establish the program.

Please do let me know if you would like any additional information from us.

Best,
Tracy

Tracy Sulkin
Dean, College of Media
Professor of Political Science and Romano Professorial Scholar University of Illinois, Urbana-Champaign

Dean Anderson, School of Social Work

From: Anderson, Steven G <sandersn@illinois.edu>
Sent: Friday, November 30, 2018 3:30 PM
To: Slauch, James McClurg <slauch@illinois.edu>
Subject: RE: Re-establishing the Medical Scholars Program

Hello Professor Slauch,

Thanks for reaching out to me with this. While I expect we would receive few students through the joint program, I am very positive about it and happy to offer our support. We did have a small number of students over time in the previous program, and I think the new Carle focus could be very interesting for the right student interested in interventions with socially disadvantaged groups.

Please let me know if anything else is needed, and best of luck moving this forward.

Best,
Steve Anderson

Dean Constable, College of Veterinary Medicine

From: Constable, Peter D <constabl@illinois.edu>
Sent: Friday, January 4, 2019 2:09 PM
To: Slauch, James McClurg <slauch@illinois.edu>
Cc: Sergent, Yvonne Marie <ysergent@illinois.edu>; Hoyer, Lois L <lhoyer@illinois.edu>; Foreman, Jonathan H <jhf@illinois.edu>
Subject: Re-establishing the Medical Scholars Program

Dear Dr. Slauch,

Thank you for contacting me about re-establishing the Medical Scholars Program in the Carle Illinois College of Medicine. On behalf of the College of Veterinary Medicine, I would like to congratulate you on re-establishing this program. I would also like to take this opportunity to state that we fully support your efforts in this regard.

Please let me know if our college can help you in this matter, and feel free to share this communication with appropriate parties.

Sincerely, Peter Constable, Dean, College of Veterinary Medicine

Peter D. Constable BVSc(Hons), MS, PhD, DACVIM, DACVN(Honorary)
Dean, College of Veterinary Medicine, University of Illinois
3505 Veterinary Medicine Basic Sciences Building
2001 S. Lincoln Ave, Urbana, IL 61802
Email: constabl@illinois.edu url: <http://vetmed.illinois.edu>
Tel (217) 333-2760 Fax (217) 333-4628

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Office of the Provost and Vice Chancellor for Academic
Affairs

Swanlund Administration Building
601 East John Street
Champaign, IL 61820



March 13, 2019

Gay Miller, Chair
Senate Committee on Educational Policy
Office of the Senate
228 English Building, MC-461

Dear Professor Miller:

Enclosed is a proposal from the Carle Illinois College of Medicine and the Graduate College to establish the Medical Scholars Program, a joint MD/PhD program.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kathryn A. Martensen'.

Kathryn A. Martensen
Assistant Provost

Enclosures

c: J. Slauch
K. Li
W. Chodzko-Zajko
J. Hart
A. McKinney
A. Edwards
E. Stuby

Graduate College

110 Coble Hall
801 South Wright Street
Champaign, IL 61820-6210



Executive Committee

2018-2019 Members

Wojtek Chodzko-Zajko
Dean & Chair
Graduate College

Members

Conrad Bakker
Art & Design

Zachary Berent
Graduate Student, Mechanical
Science & Engineering

Xiaoling Chen
Accountancy

Lee DeVille
Mathematics

Lilya Kaganovsky
Comparative & World
Literature

Becky Fuller
Animal Biology

Justine Murison
English

Denice Hood
Education

Tania Ionin
Linguistics

Brian Bailey
Computer Science

Lori Raetzman
Molecular & Integrative
Physiology

Katie Ranard
Graduate Student, Nutritional
Sciences

Sandra Rodriguez-Zas
Animal Sciences

Sela Sar
Advertising

Mark Steinberg
History

Terri Weissman
Art & Design

March 7, 2019

Kathy Martensen
Office of the Provost

Dear Kathy,

Included is a proposal from the Carle Illinois College of Medicine and the Graduate College to **“Establish a Medical Scholars Program, joint MD/PhD program”**.

The proposal was received on January 16, 2019 and reviewed at the Graduate College Executive Committee meeting on February 19, 2019. The committee approved the proposal pending receipt of revisions regarding the admissions procedures and time limits for the program. Those revisions have been received.

We find that this proposal meets the standards of Graduate Education at Illinois and we now forward for your review.

Sincerely,

John C. Hart
Executive Associate Dean
Graduate College

c: J. Slauch
K. Li