

## Brothers, Sheila

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**From:** Cramer, Aaron  
**Sent:** Friday, October 26, 2018 11:36 AM  
**To:** Bird-Pollan, Jennifer; Brothers, Sheila  
**Cc:** Dziubla, Thomas  
**Subject:** New USP: BSCHE Chemical Engineering and PhD Chemical Engineering  
**Attachments:** Chemical Engineering Univ Scholars 2017PhD-updated-combined.pdf

Proposed New University Scholars Program: BS Chemical Engineering and PhD Chemical Engineering

This is a recommendation that the University Senate approve the establishment of a new University Scholars Program: BS Chemical Engineering and PhD Chemical Engineering, in the Department of Chemical and Materials Engineering within the College of Engineering.

### Rationale:

The undergraduate chemical engineering program has a significant number of students each year who have conducted undergraduate research. The department views these students as an untapped resource for quality students in their doctoral program. The proposed USP will streamline the transition of such students into the doctoral program and have the potential to increase the number of such students. The program is structured after the existing USP into the master's program, but the majority of graduate school interest in chemical engineering students at UK is in the doctoral program.

Aaron

Aaron M. Cramer  
Associate Professor and Director of Graduate Studies  
Electrical and Computer Engineering  
University of Kentucky  
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## NEW UNIVERSITY SCHOLARS PROGRAM (USP)

The University Scholars Program (USP) offers students the opportunity and challenge of integrating their undergraduate and graduate courses of study into a single, continuous program leading to both a baccalaureate and master's degree. The student's particular requirements will determine the amount of time needed to complete the program, but the two programs can be completed in less time than that required in a conventional program.

Once approved at the college level, your college will send the proposal to the Graduate Council (GC) for review and approval. (Requirements for the bachelor's degree must remain unchanged, so there is no review by the Undergraduate Council.) After approval by the GC, the GC will send your proposal to the Senate Council office for additional review via a committee and then to the Senate for approval. Once approved by the Senate, the Senate Council office will report approvals to the Provost, Registrar and other appropriate entities, including the contact person. The contact person listed on the form will be informed when the proposal has been sent to committee and other times as appropriate.

1. GENERAL INFORMATION						
1a	Bachelor's major name:	Chemical Engineering				
1b	Bachelor's degree:	<input type="checkbox"/> Bachelor of Arts	<input type="checkbox"/> Bachelor of Science	<input checked="" type="checkbox"/> Other		
	If "Other," explain:	BSCHE				
1c	Bachelor's degree home college:	College of Engineering				
1d	Bachelor's degree home department/school:	Chemical and Materials Engineering				
1e	Graduate major name:	Chemical Engineering				
1f	Graduate degree:	<input type="checkbox"/> Master's of Arts	<input type="checkbox"/> Master's of Science	<input type="checkbox"/> Master's of Education	<input checked="" type="checkbox"/> Other	
	If "Other," explain:	PhD				
1g	Graduate degree home college:	College of Engineering				
1h	Graduate degree home department/school:	Chemical and Materials Engineering				
1i	Requested effective date:	<input checked="" type="checkbox"/> Semester after approval.	OR	<input type="checkbox"/> Specific Date <sup>1</sup> :		
1j	Contact person name:	Thomas Dziubla	Email:	thomas.dziubla@uky.edu	Phone:	257-4063
2. OVERVIEW						
2a	Provide a brief description of the proposed USP. (300 word limit)					

<sup>1</sup> University Scholars Programs are typically made effective for the semester following approval. No program will be made effective unless all approvals, up through and including University Senate approval, are received.

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	The PhD USP in Chemical Engineering will allow the use of electives available at both the undergraduate and graduate level in the chemical engineering to be taken at the graduate level and count towards a PhD degree, allowing for a more rapid transition into research.		
2b	Explain the need (e.g. market demand). (300 word limit)		
	<i>Approximately 10 students in each graduating class of B.S. chemical engineers have conducted a significant amount of undergraduate research (beginning as early as their freshman year). We have had ~1 student every other year continue on as a PhD. These students have all become industry and academia leaders and we believe this is an untapped resource of quality students for our program. This program would serve as a way to streamline the transition and potentially increase the number of students.</i>		
2c	Describe the target audience. (150 word limit)		
	<i>The program will target undergraduates participating in research within our program who are preparing to enter a Ph.D. program.</i>		
<b>3. Basic Requirements</b>			
3a	<input checked="" type="checkbox"/> Check to confirm that the USP is open to undergraduates with senior standing who have completed at least 90 hours of course work.		
3b	Undergraduates must have satisfied all UK Core requirements prior to applying.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
	If "No," explain. (150 word limit)		
3c	Application to the USP is at the end of the student's junior year.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
	If "No," explain. (150 word limit)		
3d	For admission to the USP, the undergraduate GPA is greater than or equal to 3.5 in the student's major (including cross-listed courses) and 3.2 overall.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
	If "No," explain. (150 word limit)		
3e	<input checked="" type="checkbox"/> Check box to confirm that application to the program will follow the current procedures for application to the Graduate School, subject to the conditions in questions 3a through 3d, above.		
3f	<input checked="" type="checkbox"/> Check box to confirm that the USP is designed so that students will not take more than 16 credit hours per semester. (Permission to exceed that number is subject to approval by the Director of Graduate Studies and Dean of the Graduate School.)		
<b>4. Specific Course Requirements</b>			
4a	Up to twelve (12) credit hours from the bachelor's degree may be used towards the graduate degree. How many credits from the undergraduate degree will count towards the graduate degree?		
	12		

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4b List below the 400G- and 500-level courses in the bachelor’s degree that will count towards the graduate degree. The student must be graded as a graduate student in the courses listed below for the course(s) to count towards the graduate degree.

Prefix & Number	Course Title	Credit Hrs
CME 505	Analysis of Chemical Engineering Problems	3
CME 515	Air Pollution	3
CME 523	Concepts, Assessment Tools and Methods in Sustainable Power and Energy	3
CME 542	Electric Power Generation Technologies	3
CME 554	Chemical and Physical Processing of Polymer Systems	3
CME 556	Introduction to Composite Materials	3
CME 580	Design of Rate and Equilibrium Processes for Water Pollution Control	3
TOTAL NUMBER OF CREDIT HOURS:		12

4a. Does the USP involve prerequisite courses<sup>2</sup> or concurrent enrollment<sup>3</sup> in certain courses? Yes  No

If “Yes,” please list the courses below.

Prefix & Number	Course Title	Credit Hrs	Course Type <sup>4</sup>
			Select one....
			Select one....
			Select one....
			Select one....
			Select one....
			Select one....
			Select one....
			Select one....
			Select one....
			Select one....
			Select one....

4b Provide the Bulletin language for prerequisite or concurrent enrollment courses.

**5. ADMINISTRATION AND ASSESSMENT**

5a Describe how the proposed USP will be administered, including admissions, student advising, retention, etc. (150 word limit)

<sup>2</sup> Prerequisite courses are completed prior to initiation of the USP, i.e. at the undergraduate level.  
<sup>3</sup> Concurrent enrollment courses are in progress, i.e. in which the student is currently enrolled.  
<sup>4</sup> Use the drop-down list to indicate if the course is a prerequisite or may be taken currently.

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*The USP will be administered by the program DUS and DGS, who will make admission decisions and advise the student jointly. A research advisor will be assigned at the time of admission so that research and coursework toward the PhD thesis are concurrent.*

5b Describe evaluation procedures for the proposed USP. Include how to determine whether the USP is a success or a failure. (250 word limit)

*The success of the USP will be evaluated from the successful completion of both a B.S. and a Ph.D. after entering the program and the ability of the student to meet the learning objectives of the Ph.D. chemical engineering program at the completion of their study.*

**6. MISCELLANEOUS**

6a Is there anything else about the proposed USP that should be mentioned? (150 word limit)

*This program is parallel to our Master's USP offering . We believe this will be a more sought after degree as the majority of our chemical engineering students interested in graduate school are interested in the Ph.D.*

**7. APPROVALS/REVIEWS**

Document steps in the approval process below.

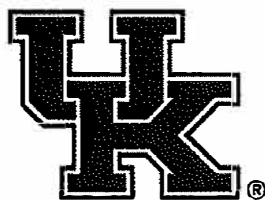
	Reviewing Group Name	Date Approved	Contact Person Name/Phone/Email
7a	<i>(Within College) In addition to the information below, attach documentation of department and college approval. This typically takes the form of meeting minutes but may also be an email from the unit heads reporting department- and college-level votes.</i>		
	<i>Department of Chemical and Mat Eng.</i>	<i>10/23/2017</i>	<i>Douglass Kalika / 859-257-5507 / kalika@engr.uky.edu</i>
	<i>College of Engineering</i>	<i>3/20/2018</i>	<i>Kimberley Anderson / 85-257-1864 / kimberly.anderson@uky.edu</i>
			/ /
			/ /

7b (Collaborating and/or Affected Units)

			/ /
			/ /
			/ /
			/ /

7c	(Senate's Academic Councils)	Date Approved	Contact Person Name
	Health Care Colleges Council (if applicable)		
	Graduate Council	<i>9/27/18</i>	<i>Roshan Nikou</i>

CME 573	Drug Delivery	3
CME 570	Bionanotechnology	3
CME 599	Topics in Chemical Engineering	3
CME 404G	Polymeric Materials	3
	Total	30



**Department of Chemical and  
Materials Engineering**

*177 Anderson Hall  
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douglass.kalika@uky.edu*

October 25, 2017

TO: Whom It May Concern

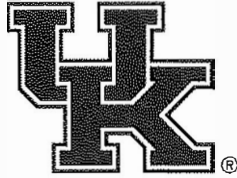
This letter is to confirm that the faculty of the Department of Chemical and Materials Engineering has reviewed and approved the attached proposal for a Ph.D. University Scholars program in chemical engineering. The faculty reviewed the proposal documents via e-mail distribution and have responded with full support.

If you have any questions or concerns, please feel free to contact me.

Sincerely,

*Doug Kalika*

Douglass S. Kalika, Professor and Chair  
Department of Chemical and Materials Engineering



**University of Kentucky**  
**College of Engineering**

*Office of the Dean*

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March 20, 2018

To Whom It May Concern:

This letter is confirm that the faculty of the College of Engineering has reviewed and approved the attached proposal for a Ph.D. University Scholars program in Chemical Engineering. The faculty reviewed the proposal documents via email and there were no concerns raised.

If you have any questions, please contact me.

Sincerely,

A handwritten signature in cursive script that reads "BJ Brandenburg".

BJ Brandenburg

Director of Engineering Student Records

see blue.

*An Equal Opportunity University*