

## Brothers, Sheila C

---

**From:** Schroeder, Margaret <m.mohr@uky.edu>  
**Sent:** Wednesday, January 28, 2015 11:24 AM  
**To:** Brothers, Sheila C; Hippisley, Andrew R  
**Subject:** UPDATED: Undergraduate Certificate in Research in Human Health Sciences

### New Undergraduate Certificate in Research in Human Health Sciences

This is a recommendation that the University Senate approve the establishment of a new Undergraduate Certificate in Research in Human Health Sciences in the College of Health Sciences.

Best-  
Margaret

-----  
Margaret J. Mohr-Schroeder, PhD | Associate Professor of Mathematics Education | [STEM PLUS Program Co-Chair](#)  
| [Department of STEM Education](#) | [University of Kentucky](#) | [www.margaretmohrschroeder.com](#)



# MEMO

August 11, 2014

**TO:** Sharon R. Stewart, Ed.D., Interim Dean and Professor  
**FROM:** Travis Thomas – Chair Academic Affairs  
**RE:** AA recommendation for approval of certificate proposal

Dear Dr. Stewart,

The Academic Affairs (AA) Committee has completed our review of the CHS proposal for a certificate program in undergraduate research. After thorough review, we unanimously recommend approval of this program. Thanks for the opportunity to review this proposal. Please let me know if I can help clarify anything regarding our recommendation.

Sincerely,

A handwritten signature in black ink, appearing to read "Travis Thomas". The signature is written in a cursive style with a horizontal line extending to the right.

Travis Thomas, PhD, RD, CSSD, *Chair – CHS Academic Affairs Committee (2013-14)*



MEMORANDUM

DATE: July 31, 2014  
TO: Undergraduate Council  
FROM: Sharon Stewart, Interim Dean  
College of Health Sciences (CHS)  
RE: Undergraduate Certificate Proposal: Research in Health Sciences

The purpose of this memorandum is to provide my strong support for the Undergraduate Research in Health Sciences Certificate proposal.

This proposal was prepared by the CHS Director of Undergraduate Research, Dr. Gilson Capilouto, in consultation with administrators and faculty in the College. The purpose of the Certificate is to provide students with an interest in research with the opportunity to obtain significant knowledge and experience in health-related research that will benefit their pursuit of a career in health care.

The undergraduate research program in the CHS has been highly successful. In just a few years, it has grown from 30 students and faculty members in 2011 to 82 students and faculty mentors in 2013. These students come from a variety of majors both inside and outside the college, and the faculty members represent programs in both our Rehabilitation Sciences and Clinical Sciences departments. Students enrolled in the research experiences register for HHS 445 (var cr) and work collaboratively with their research mentor to prepare a contract that outlines the duties and expectations. We will offer our new undergraduate research course (HHS 454) for the first time in FY15. This 3-credit hour course is mandatory for all students enrolled in the new Human Health Sciences degree program and will be mandatory for Certificate students. Because of the interdisciplinary nature of the program, we believe it is appropriate to house it administratively in the College of Health Sciences, not in a specific Department.

The College is prepared to support this program. The Certificate Director will be responsible for program administration. This will be accomplished in her role as the CHS Director of

Undergraduate Research in the CHS Office of Research. We presently pay her salary and an administrative stipend for her work. Faculty mentors are full-time members of the CHS faculty, and DOE time for mentoring undergraduate students is provided as appropriate. Students in our college are already assigned to an advisor in our College, and the Office of Student Affairs is prepared to provide the additional necessary support for the Certificate. Our Assessment Office will assist with Student Learning Outcomes and program evaluation.

In summary, the College of Health Sciences is committed to undergraduate research and has taken a number of steps to strengthen its work in this area. The Certificate program is a natural extension of this work and has my full support. We have been and will continue to provide the resources necessary to support this initiative. Please contact me for any additional information that would be helpful to this application.



UNIVERSITY OF KENTUCKY

Charlotte A. Peterson, Ph.D.  
Joseph Hamburg Endowed  
Professor  
Associate Dean for Research

College of Health Sciences  
University of Kentucky  
900 S. Limestone, CTW 105  
Lexington, KY 40536-0200

DATE: July 31, 2014

TO: Undergraduate Council

FROM: Charlotte A. Peterson, PhD

cpete4@uky.edu  
(859) 218-0476  
(859) 257-2375 fax

RE: Undergraduate Research in Health Sciences Certificate

I am writing to offer my full and enthusiastic support of an Undergraduate Research in Health Sciences Certificate as proposed by the College of Health Sciences. As the CHS Associate Dean for Research, I have been involved with our undergraduate research program since its inception in 2011. The program has grown significantly since then and appeals to a diverse group of students. As stated in the proposal, we have observed that many students stay with their respective mentors for multiple semesters. The addition of a certificate will enhance the research experience of interested students by including didactic coursework in research and research methods, by enabling students to interact more regularly with other undergraduate researchers, and by providing more opportunity to be actively engaged in research reporting and presentation, that will enhance student knowledge of their research area of interest.

I have actively participated in the development of this proposal and have reviewed it multiple times as it was being vetted and finalized. The proposal has the full support of this office. The CHS Office of Research will provide administrative support to the certificate director in the administration of the certificate. In addition, I agree to serve on the committee that considers any program changes.

Thank you in advance for your time and consideration.

Sincerely,

Charlotte A. Peterson, Ph.D.



Department of Rehabilitation Sciences  
900 South Limestone St  
Wethington Building, Rm 210  
Lexington, KY 40536-0200  
859-218-0477

July 31, 2014

Members of the Undergraduate Council:

I am writing to provide enthusiastic support for the Undergraduate Research in Health Sciences Certificate as proposed by the College of Health Sciences (CHS). I actively participated in the development of the program, including extensive discussion with key leaders throughout the process, and I am confident that this will be a meaningful Certificate to enhance undergraduate success on many levels.

The CHS commitment to undergraduate research was formalized with the appointment of Gilson Capilouto, PhD as the Director in 2011. Dr. Capilouto has done an outstanding job promoting the program to both students and faculty, and you will notice the remarkable growth highlighted in this application. Faculty members of the Rehabilitation Sciences Department have been among the most actively engaged, and they see the benefits of the program in guiding the next generation of professionals to value research. Adding a certificate program will allow a more in-depth opportunity to students to be actively engaged throughout the research process as well as an opportunity to be involved in dissemination of results.

To enable this program to be effective, I commit to allowing the appropriate DOE time for each faculty engaged in mentoring undergraduate research students. This will be a part of the regular annual DOE negotiation process. I also agree to serve on the voting body responsible for considering any program changes in the future.

As I hope is evident, Dr. Capilouto and the entire team have a deep commitment to fostering the development of research throughout the educational process. This proposed Certificate will demonstrate and expand that commitment to serve students and the University in our mission to improve people's lives through excellence in education, research, and creative work.

Sincerely,

Janice Kuperstein, PhD  
Chair, Department of Rehabilitation Sciences

July 30, 2014

University of Kentucky  
Undergraduate Council

Department of Clinical Sciences  
Wethington Building, Room 209  
Lexington, KY 40536-0200  
859 323-1100 ext. 80513  
*fax* 859 257-2454  
www.uky.edu

Dear Council Members:

As interim chair of the Department of Clinical Sciences in the College of Health Sciences, it is my pleasure to support the proposal to develop the Undergraduate Research in Health Sciences Certificate.

Given the importance of undergraduate research in the University's Strategic Plan and the growing evidence of the educational enrichment provided by such experiences, it is evident that this certificate will be a significant addition to the educational offerings of the University.

For the past three years, the College has offered the opportunity for undergraduates to work with faculty members on a research project. The numbers of students involved in the program has grown from 30 to 82 in just three years. The evaluation of the program by the student participants demonstrates the quality of the experiences. There is ample evidence that undergraduate students desire research experience and that the involved faculty work hard to provide a worthwhile experience.

The collaboration of the faculty from the two departments in the College of Health Sciences and those external to the College demonstrate the value that the faculty place on this effort.

We are pleased that the department's HHS (Health Human Sciences) courses will be part of the program and that faculty members from the Department will serve as mentors. We are dedicated to providing outstanding experiences for students in the certificate program and will assure that faculty involved in the program will be provided dedicated DOE time.

Please do not hesitate to contact me if you need additional information.

Regards,



Phyllis J. Nash, M.S.W., Ed.D.  
Interim Chair, Department of Clinical Sciences





UNIVERSITY  
OF KENTUCKY

Chandler Medical Center

Rehabilitation Sciences Doctoral Program

---

900 S. Limestone  
Lexington, KY 40536-0200  
(859) 218-0860  
Fax (859) 323-6003

July 30, 2014

TO: Undergraduate Council

I am writing to offer my full and enthusiastic support of the proposed Undergraduate Research in Health Sciences Certificate as proposed by the College of Health Sciences. Since its inception in 2011, a number of the Ph.D. students in our Rehabilitation Sciences doctoral program have involved undergraduates in their research giving them the opportunity to develop their own skills relating to lab management and mentoring. The addition of a certificate will provide the advantage of complimentary didactic coursework in research and research methods as well as complimentary coursework in the respective area of interest enhancing the research skills of our future allied health workforce.

I have carefully reviewed this proposal in its final form and offer my full support. Furthermore, I agree to serve as Certificate Director in Dr. Capiluto's absence.

Thank you for giving this proposal your full consideration.

Sincerely,

Carl G. Mattacola, PhD, ATC  
Professor and Director-  
Rehabilitation Science Doctoral Program,  
Division of Athletic Training



College of Health Sciences

Office of Student Affairs  
CTW Building  
900 South Limestone  
Lexington, KY 40536-0200

August 1, 2014

Undergraduate Council,

I am writing to offer my full and enthusiastic support of an Undergraduate Research in Health Sciences Certificate as proposed by the College of Health Sciences (CHS). As the CHS Assistant Dean for Admissions and Student Affairs, my office offers advising to all undergraduates interested in a health profession. The Undergraduate Research in Health Sciences Certificate appeals to a diverse group of students from a variety of disciplines across the university. Students involved in undergraduate research will remain engaged in our college for several semesters, thus it is important to offer advising to students who would like to attain an Undergraduate Research in Health Sciences Certificate, both through their mentors and through formal academic advising. This will support students in their pursuit of the certificate and in exploring all possible career options.

I have actively participated in the development of this proposal and have reviewed it multiple times as it was vetted and finalized. The proposal has the full support of this office. The CHS Office of Student Affairs will provide advising, an electronic application for students applying for a research certificate, and administrative support to the certificate director in the administration of the certificate.

Thank you for giving this proposal your full consideration.

A handwritten signature in black ink that reads "Randa R. Remer".

Randa R. Remer, Ph.D.  
Assistant Dean of Admissions and Student Affairs  
College of Health Sciences

see  
blue.



College of Health Sciences

Division of Health Science  
Education and Research (HSER)  
Programs Human Health Sciences  
Clinical Leadership & Management  
Wethington Building, Room 207  
Lexington, KY 40536-0200

859 323-1100 Ext. 8-0495

*fax* 859 257-2454

[www.mc.uky.edu/healthsciences](http://www.mc.uky.edu/healthsciences)

see  
blue.



Undergraduate Education  
557 Patterson Office Tower  
Lexington, KY 40506-0027

859 257-3027  
*fax* 859 257-1455

[www.uky.edu](http://www.uky.edu)

December 1, 2014

Dean Sharon Stewart  
College of Health Sciences  
University of Kentucky  
Lexington, Kentucky 40506-0027

Dear Dean Stewart:

I am writing to express the support of the Division of Undergraduate Education for the undergraduate certificate for Research in the Health Sciences that has been prepared by Dr. Gilson Capilouto. Dr. Capilouto has consulted with me during the process.

While it is the intention of UGE to submit a proposal for a certificate in undergraduate research, our proposal would be significantly different from the very specific Health Sciences certificate under consideration at this time.

Sincerely,

A handwritten signature in black ink that reads "Benjamin C. Withers". The signature is written in a cursive style with a large, looped "B" and "W".

Benjamin C. Withers, Ph.D.  
Professor of Art History  
Associate Provost for Undergraduate Education

**see blue.**  
An Equal Opportunity University

November 21, 2014

Dr. Sharon Stewart, Interim Dean  
College of Health Sciences  
Charles T. Wethington, Jr. Building, Rm 123  
900 South Limestone  
University of Kentucky  
Lexington, KY 40536-0200

Dear Professor Stewart,

I am pleased to offer my support on behalf of the College of Arts and Sciences for the proposed Undergraduate Research in Human Health Sciences Certificate, to be offered by the College of Health Sciences. I have reviewed the proposed curriculum and find that your certificate will provide a substantive experience for students in your college interested in pursuing research.

The HHS certificate appropriately draws on faculty and instructional staff from all departments in the College of Health Sciences, thus ensuring its interdisciplinary focus. The curriculum provides an excellent model of an interdisciplinary undergraduate research certificate, incorporating one methods class, 6-9 credits in research experience, and an "outside area" class to be approved by the student's faculty mentor. We see the value of encouraging research at the undergraduate level, and we are happy to support your certificate for students in your college. Our own research-intensive undergraduate programs - especially Psychology, Biology, and Chemistry - are already constructed so as to provide a highly-focused research experience for nearly all majors in those disciplines, incorporating discipline-specific methods courses, an independent research experience, and a capstone. For this reason we do not foresee encouraging students in our majors to pursue the Undergraduate Research Certificate in Human Health Sciences, but we acknowledge the value of this certificate for students in your college.

We look forward to continuing to work with you and your college on matters of mutual interest and concern, for the benefit of all our students at the University of Kentucky,

Sincerely,



Mark Lawrence Kornbluh  
Dean

**From:** Stewart, Sharon R  
**Sent:** Tuesday, December 02, 2014 12:21 AM  
**To:** O'Hair, Mary J  
**Subject:** undergraduate certificate proposal

Hi Mary John,

I was glad to hear that the COE does not have any objections to the CHS proposal for an undergraduate certificate in human health sciences research. I was especially glad to hear that Melody voiced no concerns since her program is probably the most closely related to some of our programs.

We plan to move forward with the proposal and hope to get it through the Senate in the near future.

Thanks again for vetting this with your faculty.

All the best,  
Sharon

**Sharon R. Stewart, Ed.D.**  
Interim Dean and Professor

University of Kentucky College of Health Sciences  
Charles T. Wethington, Jr. Building  
900 S. Limestone, 123

Lexington, Kentucky 40536-0200  
Phone: 859.218-0480 FAX: 859.323.1058

Email: [srstew01@uky.edu](mailto:srstew01@uky.edu)

Statement of confidentiality: The contents of this email and any attachments are confidential and are intended solely for the addressee. The information may also be legally privileged. This transmission is sent in trust for the purpose of delivery to the intended recipient. If you have received this transmission in error, any use, reproduction or dissemination of this transmission is strictly prohibited. If you are not the intended recipient, please notify the sender immediately by reply email or at 859.323.1100, ext. 80570, and delete this message and its attachments, if any.

**From:** "O'Hair, Mary J" <[mjohair@uky.edu](mailto:mjohair@uky.edu)>  
**Date:** December 2, 2014 6:04:25 AM EST  
**To:** "Stewart, Sharon R" <[srstew01@uky.edu](mailto:srstew01@uky.edu)>  
**Subject: Re: undergraduate certificate proposal**

Thanks, Sharon. Let me know how we can help.

Mary John O'Hair, Dean

College of Education / University of Kentucky / [Education.uky.edu](http://Education.uky.edu)

Sent from my iPhone

## Proposal- Undergraduate Research in Human Health Sciences Certificate

Please find attached a proposal for an undergraduate certificate in undergraduate research in human health sciences. The proposal is presented by Gilson Capilouto, Ph.D. who will serve as the Faculty Director for the certificate and is currently Associate Professor, Department of Rehabilitation Sciences and Director of Undergraduate Research, College of Health Sciences. The certificate proposal was developed by Dr. Capilouto in conjunction with Dr. Sharon Stewart, Interim Dean, College of Health Sciences, Dr. Charlotte Peterson, CHS Associate Dean for Research, Dr. Phyllis Nash, Interim Chair, Department of Clinical Sciences, Dr. Geza Bruckner, Program Director, Human Health Sciences, Dr. Janice Kuperstein, Chair, CHS Department of Rehabilitation Sciences, Dr. Carl Mattacola, Program Director, Rehabilitation Sciences Doctoral Program, Dr. Randa Remer, Assistant Dean, CHS Office of Student Affairs and Dr. Rena Murphree Keath, Director, Office of Assessment.

### 1. General Information:

The home for the proposal will be the College of Health Sciences.

Due to the interdisciplinary and interdepartmental nature of the certificate, it will be housed within the College versus a hosting academic unit. The rationale for this approach is detailed throughout the proposal.

The proposed certificate name is: Undergraduate Research in Human Health Sciences Certificate

Effective date: semester following approval- January 2015

CIP Code: 51.0000

### 2. Proposal Contact:

Dr. Gilson J. Capilouto

Associate Professor and Director of Undergraduate Research, CHS

8592180555

gilson.capilouto@uky.edu

### 3. Routing Log:

Reviewing Group	Date Approved	Contact Person Name/phone/email
Program Director, Human Health Sciences	July 31 <sup>st</sup> , 2014	Dr. Geza Bruckner 218.0859 gbruckn@uky.edu
Interim Chair, Department of Clinical Sciences	July 30 <sup>th</sup> , 2014	Dr. Phyllis Nash 218.0570 pnash@uky.edu
Chair, Department of Rehabilitation Sciences	July 31 <sup>st</sup> , 2014	Dr. Janice Kuperstein 218.0593 jkupe0@uky.edu
College of Health Sciences Academic Affairs Committee		Dr. Travis Thomas 218.0863 dth225@uky.edu
Associate Dean for Research, College of Health Sciences	July 31 <sup>st</sup> , 2014	Dr. Charlotte Peterson 218.0476 cpete4@uky.edu
Interim Dean, College of Health Sciences	August 1 <sup>st</sup> , 2014	Dr. Sharon Stewart 218.0480 srstew01@uky.edu
Undergraduate Council	12/4/14	Joanie Ett-Mims

#### 4. Overview

##### A. Provide a brief description:

The Office of Research in the College of Health Sciences in collaboration with The Departments of Rehabilitation Sciences and Clinical Sciences is offering an undergraduate certificate in Undergraduate Research in Human Health Sciences. This certificate will enhance the educational goals of any University of Kentucky student interested in obtaining experience in health-related research to benefit the pursuit of a health care career. The purpose of this initiative is to encourage and recognize undergraduate students who devote a significant portion of their undergraduate education in scholarly and research pursuits within the College of Health Sciences.

##### B. This proposed certificate (check all that apply):

- Is cross-disciplinary\*
- Is certified by a professional or accredited organization/governmental agency
- Clearly leads to advanced specialization in a field

*\*Required – students must take courses in at least two disciplines, with a minimum of three credits to be completed in a second discipline.*

##### C. Affiliation

Is the certificate affiliated with a degree program?  Yes  No

Due to the interdisciplinary and interdepartmental nature of this initiative, we are proposing that the certificate be housed in the College of Health Sciences. The proposed certificate program provides undergraduate students with the opportunity to gain advanced knowledge in interdisciplinary clinical and translational research in the human health sciences fields. Currently, students from across campus gain knowledge through CHS faculty mentored research experiences. However, the addition of a certificate program will provide select students with a framework for developing higher level critical thinking skills relating to human health sciences research; along with the knowledge and skills fundamental to independent scientific inquiry.

The College of Health Sciences launched its undergraduate research program in January, 2011. Since that time, the program has enjoyed exponential growth. The following table provides an accounting of the number of students who have been involved in undergraduate research in the CHS since 2011 and demonstrates the interdepartmental and interdisciplinary nature of our undergraduate research initiative.

Academic Year	# of students	Dept Home of Faculty Mentor	Student Major (not comprehensive- serve as examples only)
2011	30	CHS Office of Research - 2 Clinical Sciences-2 Rehabilitation Sciences-26	Psychology Honors Kinesiology Communication Sciences/Disorders
2012	75	CHS Office of Research- 4 Clinical Sciences - 1 Rehabilitation Sciences- 70	Linguistics Kinesiology Communication Sciences/Disorders Mathematics Computer engineering Biochemistry Undergraduate Studies
2013	82	CHS Office of Research - 3 Clinical Sciences - 3 Rehabilitation Sciences- 76	Human Health Sciences Linguistics Communication Sciences/Disorders Kinesiology Materials Engineering Human Nutrition Vocal Music Chemistry Biological and Political Science Health Communication

#### D. Demand

Increasingly, undergraduate students are entering college with a desire to be involved in research activities that provide real world experience in the scientific process. In our own college, we have observed that a number of students choose to remain involved in research over multiple semesters, which motivated us to consider the certificate mechanism as a means of formalizing an in-depth research opportunity for interested students. In addition, the drive toward evidence-based practice has increased opportunities for research in the human health sciences and demands an allied health work force educated in the conduct and dissemination of research. The College of Health Sciences' research portfolio coupled with our interdisciplinary Human Health Sciences (HHS) degree can provide students with a range of opportunities that provide a strong foundation in 'bench to community' research and prepare them well for productive careers. The addition of a certificate program will allow students to have richer, more meaningful research experiences as they participate over time and link their research experience with complimentary didactic coursework. Moreover, we have placed an emphasis on scholarly products and outcomes to help students understand their responsibility for disseminating research findings; an opportunity not always possible in the typical one semester lab experience.

#### E. Describe the demographics of the target student population for the certificate (check each box that applies and describe the intended audience):

- Currently enrolled undergraduate students
- Post-baccalaureate students

#### F. Projected enrollment

The following table shows our enrollment projections for the first three years:

	Year 1	Year 2 (Year 1 continuing + new entering)	Year 3 (Yrs. 1 and 2 continuing + new entering)
# of students	15	25	40

#### G. Distance learning

The proposed certificate offers a combination of distance education and on-campus offerings (see Section 7B for a description of required coursework). HHS 454: Research in Human Health Sciences (3CH) is approved as a distance learning course. Additionally, the student-mentor selected out-of-disciplinary course could be an approved distance learning course. HHS 455: Research Experience in Health Sciences (6 -9 CH) will not be offered as a distance learning course.

### 5. Administration and Resources

#### A. Administration

The Certificate Director will receive applications to the certificate program. The application system will be set-up electronically by the CHS Office of Student Affairs (see LOS Remer). As part of the application process, students will be asked to describe, in writing, their research interests, educational goals and career goals. Based on the written application, the certificate director will identify potential mentors in the College and connect eligible students to those mentors for initial interview. Certificate admission criteria are described in Section 7A.

Student advising will be a shared responsibility between the student's mentor and the CHS Office of Student Affairs (OSA). Faculty mentor advising will be in the areas of the research interest and didactic coursework. The CHS OSA advisors will monitor course completion toward the certificate for each student and when students desire to meet with an OSA advisor, that opportunity will be made available. Once a student is accepted into the certificate program, the student's program advisor will be notified and kept abreast of the student's progression toward the certificate.

To assist with student retention, ongoing mid-semester evaluations with the faculty mentor will be required as long as the student is working toward the certificate. Student progress for all required courses will be monitored to address any deficiencies a student may be demonstrating. Mentors will supply the Certificate Director with each student's midterm evaluation. For concerns that are addressable (e.g. poor organizational skills) a specific plan will be put in place, with specific tasks for improving the concern, in conjunction with definitive timelines for completion. In cases where the concerns are more serious (e.g. poor academic performance), the Certificate Director will work with CHS OSA to connect students to the appropriate University resources, to improve academic success. Again, the student's program advisor will be kept informed of the student's progress.

## **B. Resources**

The projected budget needs for the proposed certificate are minimal. Coursework for the certificate already exists (see LOS Bruckner) and faculty participation is voluntary; however, DOE time commensurate with individual faculty effort will be negotiated annually with respective department chairs (see LOS Kuperstein/Nash/Stewart). The relative contribution across units is based on faculty research opportunities at any given time. The Director of Undergraduate Research is funded by the College of Health Sciences (see LOS Stewart) and administrative assistance for the undergraduate research program is funded by the CHS Office of Research (see LOS Peterson). Additional administrative support will be provided by the CHS Office of Student Affairs (See LOS Remer).

It should be reported that a number of resources are currently in place to complement the certificate program proposed here. For example, the CHS undergraduate research website includes a description of all research opportunities available to undergraduate students. In addition, a faculty toolkit is under construction that includes resources on incorporating undergraduates into research with sample research contracts to assist faculty in developing measurable goals, objectives and tasks. There is also a series of links that support students interested in research such as how to get involved in CHS research and things to think about when considering the type of research experience to pursue. All resources on the website are dynamic and evolve in response to ongoing faculty and student evaluation of the CHS UGR program.

## **C. Faculty of Record**

Faculty of Record will include the Certificate Director (Gilson J. Capilouto) and in Dr. Capilouto's absence, Dr. Carl Mattacola, Director, RHB Doctoral Program (see LOS Mattacola). Participation in the certificate program includes any CHS faculty actively mentoring undergraduate students in research. Currently, for example, this would include seventeen faculty members in the College along with 6 Ph.D. doctoral students in Rehabilitation Sciences (co-mentored by faculty). In addition, we currently have faculty from the Human Development Institute and the College of Pharmacy mentoring CHS undergraduates in research. The body voting on program changes will include the CHS Associate Dean for Research (Peterson), the Certificate Director (Capilouto), the two Chairs from the participating departments (Nash, Kuperstein) and the Program Director, Human Health Sciences (Bruckner). Lastly, the Dean appoints the Director of Undergraduate Research (DUGR) for the College and the DUGR will serve as the Certificate Director. In addition to the approval of the voting body regarding program changes, the college's regular approval process for curriculum approval will be followed.

## **6. Support and Impact**

### **A. Faculty governance**

All required letters of support reflecting college, division and unit support for the certificate accompany this proposal. Written assurance that the resources to support the certificate as presented in the proposal are in place, also accompanies this proposal.

### **B. Other related programs**

The certificate proposed here will compliment many existing UK programs- especially those with a health-related emphasis. Historically, faculty from CHS have served as mentors for students from a variety of UK programs including psychology-honors, kinesiology and chemistry. Our undergraduate research initiative has also served as a compliment to the education of students from nutrition, vocal music, engineering and

linguistics (see section 4C for additional program majors selected at random from our database). We are certain that the addition of a certificate program will only enhance the diversity of students seeking research opportunities in our College. As such, it is not feasible to include a statement of support from each possible academic unit.

The opportunity to pursue a certificate in undergraduate research further enhances the goals of the University of Kentucky Honors Program. The certificate is designed to attract talented, goal-driven students seeking interdisciplinary educational opportunities that are challenging, promote creativity and nurture independent thinking.

Lastly, UK's proposed Strategic Plan, SeeTomorrow, cites the goal to create a "vibrant undergraduate learning community". A draft of the strategic metrics for accomplishing this goal was submitted for faculty review this spring and includes increasing multidisciplinary undergraduate experiences, increasing the percentage of undergraduate students engaged in research and increasing the number of certificate programs. The proposed certificate of undergraduate research in human health sciences meets all of these metrics in a creative, cost-effective, and meaningful way.

### C. External course utilization support

Letters of Support accompany this application from the impacted academic units (Kuperstein and Nash) as well as the Program Director for Human Health Sciences (Bruckner) and the CHS Associate Dean for Research (Peterson). The possibilities for out of discipline/cross discipline didactic coursework are broad and so letters of support for individual courses are not feasible.

## 7. Admissions Criteria and Curriculum Structure

### A. Admissions criteria

The admissions criteria for the proposed certificate are as follows:

- A minimum second semester freshman
- 3.0 GPA
- A statement from a CHS faculty research mentor willing to work with the student
- An application submitted through the Office of Student Affairs

Before beginning, all students accepted into the certificate program will be required to:

- Register with the UK Office of Undergraduate Research
- Complete research ethics education as directed by their mentor
- Complete web-based biosafety modules as directed by their mentor

### B. Curricular structure

- Will this certificate program utilize existing courses?  Yes  No
- If yes, please indicate the number of existing courses being utilized   2
- Will this certificate program require new courses?  Yes  No
- If yes, please indicate the number of new courses being proposed

### Required Courses:

A total of 12-15 credit hours will be required for the certificate and are described below. All required courses for the certificate must be completed with an overall GPA of a 3.0 or better **and** each course within the certificate must be completed with at least a C or better. Courses are described below and can be adapted to accommodate students enrolled in The Honors Program as requested:

1. HHS 454: Research in Human Health Sciences (3CH)

This course provides an introduction to basic methods for undertaking research on issues related to health, health care, and within health services organizations and systems.

2. HHS 455: Research Experience in Health Sciences (6 -9 CH)\*

HHS 455 provides the student with the opportunity to engage in independent work devoted to research on a specific problem with the goal to challenge the student to synthesize concepts from his/her total program and relate them to his/her specific field of research interest. Students work under the direction of a faculty mentor in an area of mutual scientific interest. Student and mentor collaborate to develop a research contract that outlines the expectations of the research experience including: a description of the experience with goals and objectives, tasks for completing the objectives with timelines, and criteria, with percentages, for assessment. Students seeking the UGR certificate will complete, as part of one of their HHS 455 contracts, either (1) a presentation to a local targeted group (e.g. CHS Research Day); (2) poster preparation for national/international conference; OR (3) manuscript development/writing with mentor. Additional activities expected of certificate holders could include participation in the mentor’s lab group/journal club or IRB/IACUC preparation.

\* If a student comes from another academic unit with research experience, the mentor can agree to have 3 credit hours count toward the 6-9 CH of research experience required for the certificate. In addition, students could elect to complete this requirement under the direction of different mentors as long as they demonstrate this is justified for their scientific field of interest.

3. Mentor/student selected coursework (3CH) (i.e. content specific to area of research)- 300 level or above

Student and mentor will collaborate to select an out-of-discipline course to meet this requirement of the certificate program. The course could come from any program on the UK campus with the caveat that the content of the course be specific to the student’s scientific field of interest. For example, a student with a major in communication sciences and disorders interested in the effects of preterm birth on family stress might take a selected course in sociology (A&S), psychology (A&S), or health care navigation (HHS). A student interested in an aspect of aging muscle might take a course in gerontology (GRN) or public health (CPH). The connection between the selected course and its application to the area of research would be clearly linked in the agreement between the student and faculty mentor. In considering course options, the student/mentor would obtain any necessary instructor consent prior to student enrollment.

**8. Assessment**

**A. Student learning outcome assessment**

Student Learning Outcome	Course		
	HHS 454	HHS455	Out –of-Discipline Course*
Demonstrate understanding of concepts fundamental to scientific field of interest as evidenced by the ability to identify, summarize and discuss relevant literature.	X	X	
Discuss and apply the ethical components of scientific research to current project(s)	X	X	
Demonstrate advanced knowledge of the scientific process in scientific field of interest		X	X

\*Out-of-discipline coursework is completed after or in conjunction with the first research experience

1. *Demonstrate understanding of concepts fundamental to scientific field of interest as evidenced by the ability to identify, summarize and discuss relevant literature.*

This learning objective will be measured via embedded test questions that are part of HHS 454 as well as faculty evaluation of performance on contract activities that are part of HHS 455 (i.e. presentation, poster preparation, manuscript development, literature review). Students will be graded using standard rubrics for each of these activities. Faculty will access the rubrics via the CHS UGR website. Students must receive 75% or better on both measures to consider this learning objective as met.

2. *Discuss and apply the ethical components of scientific research to current project(s).*

This learning objective will be measured in three ways: (1) via embedded test questions that are part of HHS 454; (2) successful completion of web-based training in research ethics education (i.e. human subjects, animal care and use, and/or lab safety), as directed by mentor and outlined in the contract for HHS 455 (certificate of successful completion issued by CITI); and, (3) via demonstrated knowledge of ethics in scientific research and publishing. Student will complete three required readings on the topic and present the mentor with 2-3 discussion points via reflection from their readings (in prearranged conference). Mentors will grade student responses via standard rubric.

Students must receive 75% or better on embedded test questions/research proposal and reflection to consider this learning objective as met.

3. *Demonstrate advanced knowledge of the scientific process in scientific field of interest.*

This learning objective will be measured in two ways: (1) faculty evaluation of student performance on contract activities that are part of HHS 455 (e.g. participation in the mentor's lab group/journal club; IRB preparation and submission). Students will be graded using standard rubrics for each possible activity; and, (2) student will prepare two-three written statements for discussion with their mentor regarding how information from cross-disciplinary coursework has contributed to their specific research experience (in prearranged conference). Mentors will grade student responses via standard rubric. Students must receive 75% or better to consider this learning objective as met.

Students will also demonstrate their understanding of scientific concepts fundamental to their field and advanced knowledge of the scientific process via their participation in the CHS Community of Undergraduate Research Scholars. The CURS will meet quarterly so students can discuss the work they are doing in their respective labs and get feedback from their peers. In addition, students in the certificate program will be expected to present their work during the CHS Research Day which is part of the CCTS Annual Research Day.

Ongoing student assessment offers multiple opportunities to ensure that the program is delivering on its goals. In cases where students are receiving poor mid-term assessments by their mentors, a remediation plan (including specific targets with stated timelines as criteria for assessment) will be put in place through collaboration between the certificate administrator, respective faculty and student. In cases where the student feels their mentorship is less than good, the Certificate Director as well as an academic advisor from the CHS OSA will meet with faculty and offer resources for improving mentorship.

## **B. Program outcome assessment**

The CHS Undergraduate Research Program has been underway since 2011. Since that time, we have developed a number of benchmarks of success as well as tools for measuring the program's success- from both a student and faculty perspective.

## STUDENT PROGRAM ASSESSMENT

At the end of each semester AND the end of the program, students will complete an online assessment of the program with the following questions used as benchmarks of program success:

1. Did your experience result in any scholarly products (Check all that apply)?
  - Poster presentation
  - Platform presentation
  - Co-authorship on peer-reviewed published manuscript
  - Other: Text Box
  - None
2. How would you rate the faculty/mentor supervision you received?
  - Excellent
  - Good
  - Fair
  - Poor
3. Please describe the impact this experience has had on your career/education goals.  
Free text box

We will consider the program successful if students have had 2 or more scholarly products as a result, believe they received excellent or good mentorship, and if the experience altered or advanced their career/educational goals.

## FACULTY PROGRAM ASSESSMENT

After a given student completes the certificate, respective mentoring faculty will be required to complete an online assessment of the program with the following questions used as benchmarks of success:

1. How would you rate your experience in the certificate program?
  - Excellent
  - Good
  - Fair
  - Poor
  - NA
2. Has participation in the certificate program facilitated your research goals?
  - Yes
  - No
  - NA
3. If NO, why not?  
Free text box
4. Do you plan to continue participating in the CHS Undergraduate Research Certificate Program?
  - Yes
  - No
5. If NO, why not?  
Free text box

We will consider the program successful from the faculty perspective if faculty rate their experience as excellent or good, if the program has facilitated their research goals and if they plan to continue participating in the program.

In addition to the above, the certificate program will receive periodic external review as organized and directed by the Dean of the College of Health Sciences in collaboration with the CHS Associate Dean for Research.