EUP# 2015-02-13336

FACULTY SENATE

TEXAS A&M UNIVERSITY

February 10, 2015

MEMORANDUM

TO: Dr. Mark A. Hussey, Interim President

FROM: Jim Woosley, Speaker

SUBJECT: Undergraduate Curriculum Committee **(FS.32.229)**

The Faculty Senate submits for your approval the item from the Undergraduate Curriculum Committee at its regular meeting on February 9, 2015. Attached is a copy of the material sent to our Senators.

Special Consideration
College of Veterinary Medicine and Biomedical Sciences
Department of Veterinary Physiology and Pharmacology
Certificate in Biomedical Research and Development
Request for a new certificate program

cc: Karan Watson
Christine Stanley
Michael Benedik
Sandra Williams
Eleanor M. Green

FACULTY SENATE AGENDA ITEM REVIEW

This item has been reviewed by the Office of the Provost (OP). Below are recommended action(s): FS.32.229

Presidential Action:	*OP Recommended Action*
X Recommend Approval	__ Hold for Further Review
__ Review Only	__ System Review/Submission
	__ BOR Approval
	__ THECB Approval/Notification
	__ SACSCOC Approval/Notification

✓ Approved: ____ Reviewed:

Mark A. Hussey 3/2/15

Mark A. Hussey Date

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60. Special Consideration

College of Veterinary Medicine and Biomedical Sciences
Department of Veterinary Physiology and Pharmacology
Certificate in Biomedical Research and Development
Request for a new certificate program

Special Consideration

SPECIAL CONSIDERATION

COLLEGE OF VETERINARY MEDICINE AND BIOMEDICAL SCIENCES

DEPARTMENT OF VETERINARY PHYSIOLOGY AND PHARMACOLOGY

CERTIFICATE IN BIOMEDICAL RESEARCH AND DEVELOPMENT

REQUEST FOR A NEW CERTIFICATE PROGRAM

H24

Requested by the Department or Unit of : VTPP

Program Type, Level, Designation, Title, Description, Hours

Program Type Certificate Program X Degree Program ☐

Program Level Undergrad Certificate X Grad Certificate ☐ Bachelor ☐ Master ☐ Doctoral ☐

Degree Designation *(i.e., BS, BA, MA, MS, MAgr, Med, PhD, EdD, etc.)* ____

Title of proposed program: Certificate in Biomedical Research and Development

Proposed CIP Code (*if known*): 26.0901.00

Brief program description *(provide a catalog description for undergraduate and graduate certificates)*:

Biomedical Research Certificate
Open to All Majors

The Biomedical Research Certificate, offered by the Department of Veterinary Physiology & Pharmacology, will provide students the opportunity to gain advanced training in biomedical research. Students in the Certificate Program will gain a broader understanding of the creation, evaluation, and dissemination of new knowledge while performing publishable original biomedical research within a research-intensive community. The Biomedical Research Certificate Program requires a minimum of 18-credit hours in designated courses, each of which includes engagement in inquiry-based research. Specific certificate requirements are available in the Biomedical Sciences Office and the Department of Veterinary Physiology & Pharmacology. Details are also available at htpp://vetmed.tamu.edu/vtpp.

Minimum program semester credit hours (SCH)	*Certificates - 12 hours**	*Bachelors - 120 hours*	*Masters - 30 hours*
Proposed program hours:	18	____	____

**12 hours minimum to appear on transcript*

Off-Campus or Distance Delivery

% of Program a student can take off-campus or through Distance Education	Program Start Date	SACS Approval**	When Provost needs to inform SACS
☐ 25%	____	Notification Only	--------
☐ 50%	____	Approval Required	6 months before first day of program
☐ 80%	____	Approval Required	6 months before first day of program
☐ 100%	____	Approval Required	6 months before first day of program

***Notification letter arranged through the Vice Provost for Academic Affairs and sent by TAMU President.*

Program Delivery Mode

		Location
X	On-campus	Texas A&M University, College Station Campus
☐	Broadcast / TTVN	____
☐	Specific off-campus location***	____
☐	Distance Education / Internet	In-State ☐ Out-of-State ☐ Start Date ____
☐	Out-of-Country	Will this program be offered with another institution? Yes ☐ No ☐ If yes, contact the Vice Provost for Academic Affairs for additional reporting requirements.

***Is this an approved SACS location? Yes X No ☐ If no, a program prospectus must be sent to SACS.
Approved locations as of March 2012: TAMU-Galveston, TAMU-Qatar, University Center-The Woodlands, CityCentre-Houston, Dubai and Saudi Arabia.

Program Funding

Has program funding been finalized at the department or college level? Yes X No☐

If no, explain or attach budget: _____

Will new costs for the first five years of the program be under $2 million? Yes X No☐

If new costs exceed $2 million, coordinating board approval is required.

Submitted by (Contact Person):

James D. Herman	jherman@cvm.tamu.edu
Name	Email
Clinical Professor	979-862-7765
Title	Phone

Certification Statement

By signing below, the Dean of the College certifies the proposed program complies with coordinating board standards. If the program is delivered through Distance Education, the Dean of the College certifies that they are following the *Principles of Good Practice for Academic Degree and Certificate Programs and Credit Courses Offered Electronically.*

Use additional signature lines if program is between three or more departments or colleges.

Signature, Department Head or Interdisciplinary Program Chair	Date	Signature, Department Head or Interdisciplinary Program Chair (*if joint program*)	Date
JOHN N. STALLONE			
Typed or Printed Name		*Typed or Printed Name*	
Chair, College Review Committee	Date	Chair, College Review Committee	Date
Dean of College	Date	Dean of College	Date
Chair, University Curriculum Committee or Graduate Council	Date	Chair, University Curriculum Committee or Graduate Council	Date

Additional Approvals Required: Faculty Senate and President.

New Program Request Form for Certificate Programs, Bachelor's and Master's Degrees

Directions: An institution shall use this form to propose a new bachelor's or master's degree program. In completing the form, the institution should refer to the document *Standards for Bachelor's and Master's Programs,* which prescribes specific requirements for new degree programs. Note: This form requires signatures of (1) the Chief Executive Officer, certifying adequacy of funding for the new program; (2) a member of the Board of Regents (or designee), certifying Board approval, and (3) if applicable, a member of the Board of Regents or (designee), certifying that criteria have been met for staff-level approval. NOTE: Preliminary authority is required for all engineering programs. An institution that does not have preliminary authority for a proposed engineering program shall submit a separate request for preliminary authority prior to submitting the degree program request form. That request shall address criteria set in Coordinating Board rules Section 5.24 (a).

Administrative Information

1. Institution: Texas A&M University

2. Program Name: Certificate in Biomedical Research and Development

3. Proposed CIP Code: 26.0901.00

4. Brief Program Description: Describe the program and the educational objectives:

   Drawing from existing courses and faculty resources within the university, the Biomedical Research Certificate Program will enable participating students to synthesize and integrate academic course work with production of original biomedical research. Completion of this certificate program will better prepare students to participate in an innovation economy by mastering depth of knowledge, demonstrating critical thinking, communicating effectively, practice personal and social responsibility and prepare to engage in lifelong learning.

   Number of Semester Credit Hours Required : 18

5. Administrative Unit – the Department of Veterinary Physiology & Pharmacology in the College of Veterinary Medicine & Biomedical Sciences

6. Proposed Implementation Date – Fall 2015

7. Contact Person – Provide contact information for the person who can answer specific questions about the program:

   Name: James Herman
   Title: Clinical Professor
   E-mail: jherman@cvm.tamu.edu
   Phone: 979-862-7765

Program Information

I. Need

A. Job Market Need – Texas is home to more than 3,600 firms engaged in biotechnology R&D and manufacturing. In April 2014, NIH ranked Texas second in the nation for number of clinical trials, and the state has raised $145 million in biomedicine and pharmaceutical projects through the Texas Emerging Technology Fund (TETF). The national need for workers trained in biomedical research is growing rapidly. The job outlook (2012-2020) according to the Bureau of Labor Statistics is strong for Medical Scientists (13% growth) and Biomedical Engineers (27% growth).

B. Student Demand – The demand for the certificate program is evidenced by the large number of undergraduates participating in the DeBakey Undergraduate Research Program since its inception in 2004. Currently serving over 100 students per semester, this program provides rare opportunities for students from freshmen to senior years to participate in original biomedical research. The DeBakey Program typically receives over 250 applications per semester. In a recent survey (n=88), the two most common reason students cite for not being able to participate in research is the lack of existing research opportunities, and lack of access to them. 100% of responders answered affirmatively to the question "Do you believe a research opportunity will help you apply and get the jobs or school opportunities that you want after you graduate?" Furthermore, there is currently no mechanism for students to make more than two semesters of undergraduate research count toward degree completion. This certificate program creates research opportunities, increases access to them, and makes it possible for students to be involved in original research all four years of their undergraduate program.

C. Enrollment Projections – Use this table to show the estimated cumulative headcount and full-time student equivalent (FTSE) enrollment for the first five years of the program. (*Include majors only and consider attrition and graduation.*)

YEAR	1	2	3	4	5
Headcount	100	150	200	250	300
FTSE					

II. Quality

A. Certificate and Degree Requirements –

Category	Semester Credit Hours
Required Courses	12
Prescribed Electives	6
Free Electives	0
TOTAL	18

B. Curriculum –

Prefix and Number	Required Courses	SCH
VTPP 123	Foundations of Physiology	3
VTPP 491	Research	6
VTPP 444	Practicum in Biomedical Research	3

Prefix and Number	Prescribed Elective Courses (Choose either 223/224 OR 234/235)	SCH
VTPP 223	Design of Experiments for Physiology Research	3
VTPP 224	In Vitro Experimentation in Physiology Research	3
VTPP 234	Design of Models for Physiology Research	3
VTPP 235	Analysis and Validation of Models for Physiology Research	3

	TOTAL SCH	(18)

C. Faculty – Use these tables to provide information about Core and Support faculty. Add an asterisk (*) before the name of the individual who will have direct administrative responsibilities for the program. *(Add and delete rows as needed.)*

Name of Core Faculty and Faculty Rank	**Highest Degree and Awarding Institution**	**Courses Assigned in Program**	**% Time Assigned To Program**
Quick, Christopher Associate Professor	Ph.D. Biomedical Engineering Rutgers University	VTPP 234 VTPP 235	50%
Dongaonkar, Ranjeet Clinical Assistant Professor	Ph.D. in Biomedical Science Texas A&M University	VTPP 223 VTPP 224	50%
Stewart, Randolph Clinical Professor	Ph.D. in Biomedical Science Texas A&M University	VTPP 123	15%

Name of Support Faculty and Faculty Rank	**Highest Degree and Awarding Institution**	**Courses Assigned in Program**	**% Time Assigned To Program**
Herman, James Clinical Professor	Ph.D. Biomedical Science Texas A&M University	VTPP 444	15%

D. Students – Because this program extends the infrastructure of the very successful DeBakey Undergraduate Research Program, core faculty have already developed multiple, time-tested approaches to recruit and retain students, particularly from underrepresented groups. The proposed certificate program will be open to undergraduates from all colleges, including (but not limited to) Science, Agriculture and Life Sciences, Veterinary Medicine and Biomedical Sciences, and the Dwight Look College of Engineering. Faculty will continue to be in close contact with undergraduate program advisors in each of these colleges to ensure the certificate program is widely advertised to students, and to minimize scheduling conflicts with required courses. The classes required for the certificate program were designed based on the principles of universal design and inclusion. Activities and workshops include diversity training, conflict resolution, intensive faculty mentoring, and development of persistent community amongst peers, all of which have been shown to positively effect retention of underrepresented groups. Further recruitment occurs at annual student presentations at Student Research Week, as well as targeted recruitment at student organizations for women and underrepresented minorities.

E. Library – Provide the library director's assessment of library resources necessary for the program. Describe plans to build the library holdings to support the program.

Current library holdings are sufficient.

F. Facilities and Equipment – Describe the availability and adequacy of facilities and equipment to support the program. Describe plans for facility and equipment improvements/additions.

The facilities exist for this certificate program, including a large computer lab in the new College of Veterinary Medicine and Biomedical Sciences teaching building, as well as dedicated laboratory space. There is no need for improvements or additions.

G. Accreditation – If the discipline has a national accrediting body, describe plans to obtain accreditation or provide a rationale for not pursuing accreditation.

Not Applicable.

H. Evaluation – Describe the evaluation process that will be used to assess the quality and effectiveness of the new degree program.

Assessment will be based on direct measures of learning outcomes through performance in class work and through evaluation by faculty research mentors. Furthermore, students will present at Student Research Week. Indirect measures will be provided by annual surveys, as well as group exit interviews.

III. Costs and Funding

Five-Year Costs and Funding Sources - Use this table to show five-year costs and sources of funding for the program.

Five-Year Costs		Five-Year Funding	
Personnel[1]	$0	Reallocated Funds	$0
Facilities and Equipment	$0	Anticipated New Formula Funding[3]	$0
Library, Supplies, and Materials	$0	Special Item Funding	$0
Other[2]	$0	Other[4]	$0
Total Costs	**$0**	**Total Funding**	**$0**

1. Report costs for new faculty hires, graduate assistants, and technical support personnel. For new faculty, prorate individual salaries as a percentage of the time assigned to the program. If existing faculty will contribute to program, include costs necessary to maintain existing programs (e.g., cost of adjunct to cover courses previously taught by faculty who would teach in new program).
2. Specify other costs here (e.g., administrative costs, travel).
3. Indicate formula funding for students new to the institution because of the program; formula funding should be included only for years three through five of the program and should reflect enrollment projections for years three through five.
4. Report other sources of funding here. In-hand grants, "likely" future grants, and designated tuition and fees can be included.

Signature Page

1. Adequacy of Funding – The chief executive officer shall sign the following statement:

   I certify that the institution has adequate funds to cover the costs of the new program. Furthermore, the new program will not reduce the effectiveness or quality of existing programs at the institution.

   _____
   Chief Executive Officer Date

2. Board of Regents or Designee Approval – A member of the Board of Regents or designee shall sign the following statement:

   On behalf of the Board of Regents, I approve the program.

   _____
   Board of Regents (Designee) Date of Approval

3. Board of Regents Certification of Criteria for Commissioner of Assistant Commissioner Approval – For a program to be approved by the Commissioner or the Assistant Commissioner for Academic Affairs and Research, the Board of Regents or designee must certify that the new program meets the eight criteria under TAC Section 5.50 (b): The criteria stipulate that the program shall:

   (1) be within the institution's current Table of Programs;
   (2) have a curriculum, faculty, resources, support services, and other components of a degree program that are comparable to those of high quality programs in the same or similar disciplines at other institutions;
   (3) have sufficient clinical or in-service sites, if applicable, to support the program;
   (4) be consistent with the standards of the Commission of Colleges of the Southern Association of Colleges and Schools and, if applicable, with the standards or discipline-specific accrediting agencies and licensing agencies;
   (5) attract students on a long-term basis and produce graduates who would have opportunities for employment; or the program is appropriate for the development of a well-rounded array of basic baccalaureate degree programs at the institution;
   (6) not unnecessarily duplicate existing programs at other institutions;
   (7) not be dependent on future Special Item funding
   (8) have new five-year costs that would not exceed $2 million.

   On behalf of the Board of Regents, I certify that the new program meets the criteria specified under TAC Section 5.50 (b).

   _____
   Board of Regents (Designee) Date