

9-8-1988

## Graduate Committee 4/7/88 (Received 5/19/88)

Marshall University

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MAY 19 1988

Attachments of Motions  
Graduate Committee  
April 7, 1988

Motion 1) The M.S./M.D. proposal be approved in principle and that its implementation be contingent upon changes and made between the medical school and the Graduate Dean and that the document will provide a mechanism for making future adjustments. (Supporting documentation attached).

Senate  
President

9/8/88  
Date

Rainey Duke  
Approved

\_\_\_\_\_  
Disapproved

President

9/9/88  
Date

[Signature]  
Approved

\_\_\_\_\_  
Disapproved



SCHOOL OF MEDICINE  
Director of Research Development  
1542 Spring Valley Drive  
Huntington, West Virginia 25701-9988  
304/438-8936  
~~XXXXX~~ 696-7326

April 21, 1988

MEMORANDUM

TO: Leonard Deutsch, Ph.D.

FROM: Peter J. Kasvinsky, Ph.D. *PK*

RE: M.S./M.D. Program

This is in response to your call on 4/8/88 regarding changes in the M.S./M.D. Program document as requested by the Graduate Committee.

I enclose substitute pages 3 and 4 for your consideration. The section regarding course requirements has been reworked as has the section on eligibility for comprehensive exam. In addition, a new section (H) on page 9 has been added to arrive at adjustments in the curriculum on an individual basis.

I hope the corrections are what you require. If not, please let me know. Thanks for your assistance.

cc: Dr. Lester Bryant

APPROVED

*Leonard Deutsch*  
5/2/88



SCHOOL OF MEDICINE  
Director of Research Development  
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MARSHALL UNIVERSITY  
SCHOOL OF MEDICINE

January 7, 1988

Proposal for a Combined Program  
M.S. in Biomedical Sciences and Doctor of Medicine

Effective Date: May 1988

Summary:

The Combined Program for the Master of Science in Biomedical Sciences and the Doctor of Medicine degrees is an administrative reorganization of both preexisting degree programs such that a medical student will be able in five years to meet the requirements for both degrees. No changes in the degree requirements for either the Master of Science in Biomedical Sciences or the Doctor of Medicine are requested or anticipated.

No additional costs are anticipated and no additional faculty are required.

This program directly supports Marshall University goals and does not duplicate any existing program in the region.

## PROGRAM DESCRIPTION

### A. Program Objectives

Because of the unique type of graduate program available in Biomedical Sciences at Marshall University School of Medicine, the possibility exists for close cooperation between the Biomedical Science Departments to develop a graduate program for a few selected, highly qualified medical students. Such a program would culminate with receipt of the Master of Science in Biomedical Sciences prior to the Junior year in Medical School and would add only one year prior to the normal four year medical curriculum. In the event that a medical student participant in the program elects to pursue the Doctor of Philosophy in Biomedical Sciences in cooperation with West Virginia University, he or she would be eligible to do so upon receipt of his/her Masters Degree in Biomedical Sciences. Alternately, a participating student could enter the Ph.D. Program upon receipt of the Doctor of Medicine with receipt of the Ph.D. from West Virginia University likely in two years. Admission to the Ph.D. Program would be under existing procedures and policy and needs no further review at this time.

### B. Program Features

#### 1. Admissions and Performance Standards

The regular Marshall University/Graduate School and Medical School admission and performance standards apply to this combined degree program as described in the 1987-1988 Graduate Catalog and School of Medicine Bulletin. Students will apply initially to the School of Medicine, indicating in writing their intention and interest in the program. Upon acceptance to the School of Medicine, the student will apply to the

Graduate School for admission to the Biomedical Sciences Program. All entrance examinations (MCAT and GRE) will be required.

2. Program Requirements

The combined M.S. in Biomedical Sciences/M.D. Program will have the same general degree requirements as described in the 1987-88 Graduate Catalog and School of Medicine Bulletin. No changes in the degree requirements for either degree are requested or anticipated. A program description for the Biomedical Sciences is appended (Appendix A). Requirements are outlined on pages 7 to 9.

Students selected for the combined M.S./M.D. Program would have three full years to complete both the requirements for the M.S. in Biomedical Science and the requirements for their preclinical medical education. To meet program requirements students will participate in three of the basic science courses (Medical Biochemistry, Anatomy, Physiology, Pharmacology and Medical Microbiology) as part of the B.M.S. Program. These courses must be completed with a minimum grade of B as a part of the student's graduate school curriculum. This would require, for example, that during Year I a student would register for BIC 620 in the graduate school rather than BIC 720 in the medical school. The School of Medicine will accept these graduate courses as meeting graduation requirements for the M.D. degree. It should be noted that under the terms of accreditation by the LCME actual registration in the Medical school course is not a requirement for graduation.

eligible for Medical Student Research Fellowships during the three summers involving the master's research and thesis.

C. Program Outcomes

A combined M.S./M.D. program would have at least six major impacts on graduate, premedical and clinical medical education at Marshall University School of Medicine. These are as follows:

1. It will meet the needs and interests of potential medical students in the State of West Virginia and contiguous states. Thus, it will serve to improve recruitment of excellent candidates to the School of Medicine.
2. Interaction between the basic science faculty and medical students would be enhanced. This will in turn increase the interest of both groups in the common ground--Science and Education.
3. An opportunity will be provided for total immersion in the research of the faculty and exposure to the value and import of the basic sciences and research to medicine.
4. Participating students will write a research thesis and/or a scholarly paper and receive the Master of Science degree.
5. A new pool of highly qualified graduate students would be available.
6. Graduates of this combined program would be eligible to enter the cooperative degree program with West Virginia University in Biomedical Sciences for the Doctor of Philosophy.

II. PROGRAM NEED AND JUSTIFICATION

A. Introduction and Relationship to School of Medicine Goals/Objectives

Many medical educators believe that an important feature of the

pre-clinical curriculum in medical school should be to develop informed attitudes toward science: the ability to create hypotheses and the ability to test these hypotheses scientifically. In graduate education, it has probably been the experience of most scientists that the ability to identify a problem, create a hypothesis and to examine that hypothesis by experimental and/or analytical means is developed through years of involvement with laboratory research in close contact with the research advisor, other faculty and senior students. Furthermore, a vast amount of information must be digested prior to the development of these abilities. Thus, we distinguish between a Master of Science degree of three years, where the student has assimilated some basic information and been exposed to the scientific process; and the Doctor of Philosophy degree of five to six years, where the student has demonstrated the ability to use his knowledge in the scientific process of inquiry independently.

A combined M.S./M.D. Program at Marshall University School of Medicine would provide an opportunity for select medical students to develop their analytical and research abilities. Such an opportunity should enhance the students' interest in the basic sciences and allow them to use their research and analytical expertise during the clinical years of their medical school experience.

Such a program would complement the primary mission of Marshall University School of Medicine: the provision of medical education with an emphasis on primary care in rural areas. Thus, a graduate of this program could apply his or her research expertise to problems of primary care in the rural setting if he desired to do so



(i.e. nutritional, epidemiological, or environmental studies, etc.).

B. Existing Programs, Clientele and Need

West Virginia University offers a combined degree program for the M.D. and Ph.D. degrees. According to the catalog the program is arranged on an individual basis between the concerned department and the medical school administration. Many other medical schools offer similar combined M.D./Ph.D. programs, however the frequency of M.S./M.D. programs seems to be limited. No specific examples are available at this time. The need for such programs was discussed at the 1985 Annual Meeting of the Association of American Medical Colleges as a possible means of providing clinical biomedical researchers who are currently in short supply (See Appendix B).

According to the School of Medicine Office of Admissions, between one and three eligible applicants to medical school annually request joint M.S./M.D. or M.D./Ph.D. programs. The vast majority of these excellent students have selected institutions other than Marshall for their medical education. In most of these cases the existence of a formal or informal program for research training was the deciding factor. The Office of Admissions and Administration of Marshall University School of Medicine believe that the existence of this M.S./M.D. program will serve as a powerful recruitment tool for this special group of students.

C. Program Planning and Development

Preliminary discussions were initiated in the Fall of 1984. The program was formalized and presented to the then Dean, Dr. Robert Coon,, who was very supportive. In January 1985 the program was reviewed and approved by the Graduate Faculty of the Biomedical

Sciences Programs in a general faculty meeting.

The program was then approved by the School of Medicine Curriculum Committee on February 26, 1985, and transmitted to Associate Dean William Bristol. As indicated in Vice President Bryant's letter of support (Appendix C) Dr. Bristol failed to follow up and further approval of the program was therefore delayed until December of 1987.

D. Program Impact

Medical students pursuing the Master of Science in Biomedical Sciences will earn approximately 46 credit hours in graduate school courses. No new courses will be required.

III. PROGRAM IMPLEMENTATION

A. Program Administration

This program will be administered via existing personnel in the School of Medicine. No changes in the institutional administrative organization will be required.

B. Program Projections

Based on projections by the School of Medicine Office of Admissions, only three students per year would be admitted to this combined M.S./M.D. program. At any one time, a maximum of nine students (6%) would be involved. We estimate that actual participation will be closer to three students (total 2%).

C. Faculty Instructional Requirements

No additional faculty will be required for this program.

D. Library Resources and Instructional Materials

Since both the support of the M.S. in Biomedical Sciences and Doctor of Medicine degrees is current on this campus, the library can obviously support the combined degree program.