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Graduate Committee (10-18-88)

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RECOMMENDATION

GRADUATE COMMITTEE ~~MOTION~~
October 18, 1988

Reference: Independent Ph.D. in Biomedical Sciences

The Graduate Committee moved and passed unanimously to:

Adopt the proposal for the Doctorate in Biomedical Sciences as amended on October 17, 1988 and recommend that the Graduate Faculty of the Medical School review and give any further recommendations before the adoption of the program by the Faculty Senate.

Dewey D. Sanderson Date 10 / 18 / 88
Dewey D. Sanderson, Secretary of The Graduate Committee

Bradford R. DeVos Date 10 / 18 / 88
Bradford R. DeVos, Chair of the Graduate Committee

Senate Date 10 / 27 / 88 Rainey Duke
President Approved Disapproved

President Date 10 / 30 / 88 [Signature]
Approved Disapproved

Note: The above motion is being sent apart from the Graduate Committee minutes of October 17, 1988

MARSHALL UNIVERSITY

Huntington, West Virginia

September 1, 1988

**Request for Reclassification of the
Doctor of Philosophy Degree Program in
Biomedical Sciences at Marshall University
from Cooperative Degree Status to a Marshall Degree**

Effective Date: July 1, 1989

SUMMARY: Under the current cooperative degree arrangement with West Virginia University, Marshall University students in the Doctor of Philosophy Degree Program in the Biomedical Sciences take all course work except one credit hour on the Marshall campus; WVU officially confers the degree. Stand-alone status is being sought for the EMS Ph.D. degree; it is proposed that Marshall University confer the degree independently.

PART I - PROGRAM DESCRIPTION

A. Program Objectives:

The primary aim of the Biomedical Sciences Graduate Program is to graduate doctoral students who are broadly based in the biomedical sciences, but who have definite interests and special training in one of the following areas: Anatomy, Biochemistry, Microbiology, Pharmacology, or Physiology. The program is designed to be flexible and research-oriented in order to develop the interests, capabilities and potential of all participating students for a career in one of the specialized areas of academic or industrial biomedical science. Interdepartmental collaboration in research and coursework provides each student with the opportunity to obtain a broad, diversified background in biomedical research. Additional coursework and more specialized research training are offered by faculty in individual departments to fully develop each student's ability to conduct independent research in a particular sub-discipline.

Students who intend to pursue the Doctor of Philosophy degree are preferentially accepted into the Biomedical Sciences Graduate Program. However, a Master of Science degree is also offered to introduce students to the current knowledge and areas of research in the basic biomedical sciences.

B. Program Features:

Please see the current Marshall University Catalog description in Appendix V. The basic requirements of the proposed free-standing degree are identical with the exception of requirements for joint admission to Marshall and West Virginia University and the granting of the degree from West Virginia University.

1. Admissions and Performance Standards:

Admissions: Students who wish to enroll in the Doctor of

Philosophy program must apply for admission through the Marshall University Graduate School. They must meet the admission requirements of the Marshall University Graduate School, and the Graduate Study Committee of the Marshall University School of Medicine. Interested persons should contact the Director of Graduate Studies, 1542 Spring Valley Drive, Marshall University School of Medicine, Huntington, WV 25704.

Applicants to the Doctor of Philosophy in Biomedical Sciences program must possess a baccalaureate degree with undergraduate-level course work including: 1 year of general biology, 1 year of general physics, 1 year of introductory chemistry, and 1 year of organic chemistry, all with associated laboratories. Although not required for admission, undergraduate course work in calculus and physical chemistry is desirable as these may be prerequisites for advanced course work in certain areas of specialization.

Prospective students should submit to the Director of Graduate Studies letters of recommendation and Graduate Record Examination (GRE) scores (aptitude and advanced). In addition, transcripts and a completed application for admission and information sheet must be sent to the Marshall University Office of Admission, Huntington, WV 25755.

Applicants who already possess a Master of Science in Biomedical Sciences, or equivalent experience, are eligible to apply for full admission directly into the Doctor of Philosophy program in Biomedical Sciences. The requirements for full admission into the program are essentially the same as those required for award of the Master of Science in Biomedical Sciences with the exception that a requirement for a master's thesis may be waived.

Applicants who do not possess a Master of Science in Biomedical Science, or equivalent experience, but who do meet all of the other

requirements listed above can be provisionally accepted into the doctoral program. Provisional acceptance requires the student to successfully complete the master's course work prior to full acceptance.

Performance Standard: To receive a degree, all students in the Biomedical Sciences graduate program must have a scholastic grade-point average of not less than 3.0 (B) in all graduate work completed in the program. All grades of C or less are counted in computing averages, but no more than 6 credit hours of C, and no credit hours below C, may be applied toward degree requirements. Credit/No Credit hours may be included toward degree requirements, but they will not affect the quality grade-point computation.

2. Program and Residence Requirements:

Program Requirements: Every student must take courses in cellular and molecular biology, statistics, and seminar. In addition, each student, with approval of his/her advisory committee, must successfully complete at least one basic course (minimum 4 credit hours) in a minimum of three basic biomedical science departments. Elective courses, chosen with concurrence of the student's advisory committee, will provide the remainder of the required credit hours (a minimum of 18).

Upon admission to the doctoral program, the student's doctoral advisory committee will be formed. The doctoral advisory committee consisting of at least six members will periodically review the student's progress and act as the examination committee. The student's research adviser will serve as the examination committee chairperson. Up to three additional members from the student's major department and two from other departments (one each from the student's two minor departments) will be recommended by the student's research adviser to the Marshall University

Graduate School Dean for appointment to the committee. One member of the committee may be from outside the program and/or the university.

The doctoral student's plan of study and research will be guided by the student's advisory committee. Course work will consist of seminar each semester and electives as directed by the student's advisory committee. After satisfactory completion of all general and specialty course work requirements, the student must successfully complete a preliminary qualifying examination to be admitted to candidacy for the Doctor of Philosophy degree.

The preliminary qualifying examination, the most rigorous and comprehensive examination that the student must take, will be given at the discretion of the student's advisory committee and must be completed by the end of the second year or 48 credit hours after full admission into the doctoral degree program. This examination will consist of both written and oral portions. It must be the consensus of the student's advisory committee that the student has passed the examination, although the committee may permit one dissenting vote. A single portion of the examination may be repeated at the discretion of the committee, but if two or more members are dissatisfied, the entire qualifying examination must be repeated. The student must petition through the advisory committee in order to be permitted to repeat a qualifying examination, and it is anticipated that a waiting period will be specified by the committee during which the student will have opportunity to correct deficiencies. Academic tradition does not allow for a qualifying examination to be administered more than three times.

After admission to candidacy and completion of course work and research, the student must prepare and successfully defend his/her dissertation in a final examination. Satisfactory performance in the

dissertation defense requires approval of all but one member of the student's advisory committee, which then recommends award of the Doctor of Philosophy degree.

Residence: The doctoral program will normally require 2 1/2 to 3 years of full-time graduate work beyond the M.S. degree. This must include a minimum of two semesters of residence in full-time graduate study at Marshall University. In addition, all doctoral students in this program, regardless of receipt of financial assistance, must participate in the teaching and research programs as an integral part of their advanced training.

C. Program Outcome:

The Ph.D. Program in Biomedical Sciences is currently considered a strong cooperative degree program (See Appendix I, "Doctoral Program Review: Biomedical Science," 1/5/86). Eight students have received their Ph.D. degrees since 1986. Currently all are engaged in post doctoral research or have faculty positions.

1. Stand-alone status will be somewhat more cost effective in reducing travel costs to and from West Virginia University by faculty members of doctoral advisory committees and examination committees. On several occasions committee meetings have been cancelled or delayed due to inclement weather conditions during the winter months. This has caused delays in student progress toward degree completion. Faculty from both institutions have expressed concern and dissatisfaction with the current arrangements, which deprive students of day to day interactions with committee members

2. Stand-alone status will be more cost effective in eliminating the requirement for duplication of functions at two separate institutions as

follows: (a) records and transcripts, (b) applications and admissions and (c) joint registration during the final semester of the Ph.D. program. In addition, there will be cost-savings to the student through reduced tuition and fees.

3. With the development and stabilization of the Marshall University School of Medicine it is no longer necessary that Marshall confederate its programs with another institution to achieve credibility for them.

4. Under the present cooperative degree, the pecuniary and prestige benefits accrue primarily to West Virginia University. If a stand-alone doctorate is offered by Marshall University, these and similar benefits will come to our faculty and institution, thereby improving the morale and reputation of Marshall University. Thus, more extramural research funding should be available to a doctoral degree granting institution than to a masters' degree granting institution.

5. Acquisition of a stand-alone Ph.D. will allow Marshall University to move toward one of its stated institutional goals as announced in the BOR's Agenda for Action: 1985-1990 (p. 102), Appendix II.

6. Since West Virginia University does not have a Biomedical Sciences Ph.D. granting program, allowing Marshall University to grant this degree will not result in a duplication of programs.

PART 11 - PROGRAM NEED AND JUSTIFICATION

A. Relationship to Institutional Goals/Objectives:

One of the institutional goals for Marshall University is the acquisition of stand-alone doctoral programs. Several program areas have been identified for possible development in the current master plan of the West Virginia Board of Regents (Agenda for Action 1985-1990, pp. 29 and 102). The approved cooperative degree program in Biomedical Sciences meets the needs and potential requirements of a stand-alone program and would not impact the funding needs of other programs, since its budget is wholly supported by the School of Medicine.

In addition to the institutional goals, the Board of Regents has directed that Marshall University provide assistance to business and industry and generally assist in regional economic development. The Marshall University service area for this function includes Charleston as well as the Huntington-Ashland-Ironton area, the major population, manufacturing, retailing and financial centers of the state.

Of paramount importance to Marshall in accomplishing its Board-directed mission of assistance to business and industry is the implementation of doctoral degree programs, as well as the continual improvement and expansion of research capabilities and strengthening of existing graduate programs. Benefits of offering career-related doctoral programs accrue both to the University and to business and industry:

1. Nationwide, it has been shown that the presence of strong university-based research and doctoral programs is a major factor in industrial site location for new employment opportunities and in expansion/renovation plans of existing businesses.
2. Opportunities for employees to continue their education at the graduate level improve productivity and reduce turnover.

3. A strong campus/industry research effort provides additional outside funds for doctoral programs and faculty development.

4. The presence of doctoral programs and research greatly enhances a university's ability to compete successfully for federally funded programs.

Given the State's need to dramatically improve economic conditions, to induce new business and industry to locate in West Virginia, and to foster expansion and retention of existing business and industry, the model of other states should be followed in developing doctoral programs at Marshall University.

B. Existing Programs:

The existing cooperative program in Biomedical Sciences is currently taught at Marshall University as part of the School of Medicine/Graduate School. No other interdisciplinary program in the biomedical sciences currently exists in the State of West Virginia and no duplication is proposed by a stand-alone doctorate.

C. Program Planning and Development:

This request for stand-alone status for the cooperative Ph.D. Program in Biomedical Sciences was initiated by Marshall University President Dale F. Nitzschke on May 25, 1988. On June 11, 1988, Vice-President Lester R. Bryant appointed Dr. Peter J. Kasvinsky, Director of Research Development and Graduate Studies in the School of Medicine to prepare documentation in support of the request. After several meetings between Dr. Bryant, Dr. Kasvinsky, and Dr. Leonard Deutsch, Dean of the Graduate School, an ad hoc committee of the Faculty Senate was appointed to consider the establishment of the existing Ph.D. in Biomedical Sciences on a stand-alone status. All of the normal approval channels for new programs were utilized. For this request approvals

were obtained at the following levels:

1. Graduate Studies Committee, School of Medicine and Basic Science department chairpersons
2. Dean, School of Medicine
3. Dean, Graduate School
4. Faculty Senate: Academic Planning Committee
Graduate Committee
Senate
Senate President
5. University President

Letters of support from each level of approval are included in Appendix

III.

Currently, the following resources are dedicated to the cooperative Ph.D. Program:

Personnel:

| | | |
|-------------------|---------------|----------------|
| Faculty | 25 (1 vacant) | \$1,044,997.74 |
| Classified Staff | 14 | 200,522.68 |
| Graduate Stipends | 16 | 95,000.00 |

Support Resources:

| | |
|------------------------------|------------|
| Extramural Research Support* | 752,903.00 |
| Rsch/Ed Supplies (depts.) | 46,500.00 |
| Student Travel (HERF) | 7,500.00 |
| Seminar Speakers (HERF) | 7,000.00 |
| Student Supplies (HERF) | 13,500.00 |
| Recruiting (HERF) | 2,100.00 |

Equipment:

| | |
|-------------------------------------------|----------------|
| Current inventory dedicated to BMS depts. | \$2,330,000.00 |
|-------------------------------------------|----------------|

TOTAL: \$4,500,023.42

*Current (1988-89) funds from federal and private agencies

A list of current faculty, their departmental affiliation, rank and tenure status is attached (Appendix IV).

D. Clientele and Need:

The primary aim of the Biomedical Sciences Graduate Program is to graduate doctoral students who are broadly based in the biomedical sciences, but who have definite interests and special training in one of the following areas: Anatomy, Biochemistry, Microbiology, Pharmacology, or Physiology. The program is designed to be flexible and research-oriented in order to develop the interests, capabilities and potential of all participating students for a career in one of the specialized areas of academic or industrial biomedical science. Interdepartmental collaboration in research and coursework provide each student with the opportunity to obtain a broad, diversified background in biomedical research. Additional coursework and more specialized research training are offered by faculty in individual departments to fully develop each student's ability to conduct independent research in a particular sub-discipline.

As indicated under II, A. above, improvement of the research base and development of career-related doctoral programs is of paramount importance in the support of regional economic development. The program as presently constituted has been used by several professionals in the clinical laboratory environment or other professional areas to upgrade their skills and improve their positions. It is generally used by individuals with undergraduate degrees in biology or chemistry to move into research careers in the sciences basic to medicine. The nearest similar doctoral programs are at Ohio University and at the University of Kentucky at Lexington (both approximately 2.5 hours by car from Huntington). Students from the Charleston/Huntington metropolitan area would be forced to relocate to Morgantown (which is five

hours away) to gain a similar educational opportunity in-state. Such an action is not likely for students with families. We believe that the existence of a free-standing doctoral program will signal the intention of state government and the BOR to support the growth and development of Marshall University as a research institution. Such support will further improve the ability of faculty research investigators in the School of Medicine and other parts of the University to seek and gain extramural support for research programs. In addition, state support for research at Marshall University will provide a major new resource to Huntington in its effort to recruit new industry to the region.

The prestige factor to the institution should not be neglected. Currently all students in the Ph.D. program graduate from West Virginia University. The reputation of Marshall University would be significantly enhanced if these students were employed and established their careers as graduates of Marshall University. The effect, too, will be to enhance the morale of Marshall University faculty when their institution is recognized as a result of their efforts.

E. Employment Opportunities:

Graduates of the cooperative Ph.D. Program in Biomedical Sciences are employed in the positions as indicated below. No change in possible employment opportunities is expected by a change in the status of the program to free-standing.

Zarrintaj Aliabadi, Ph.D. (1987): Postdoctoral at the University of South Alabama in Microbiology.

Terriane Crisp, Ph.D. (1986): Post Doctoral in Pharmacology, WVU; Assistant Professor of Pharmacology, Northeastern Ohio School of Medicine.

Rodney Hagley, Ph.D. (1986): Postdoctoral in Cell Biology, Baylor College of Medicine; Assistant Professor of Biology, Viterbo College, LaCross, Wisconsin.

Elizabeth Holley, Ph.D. (1987): Postdoctorals at U. of Maryland (Baltimore) and U. of North Carolina in Microbiology.

Dennis Kinney, Ph.D. (1987): Postdoctoral at the Public Health Institute for New York City.

Joan Lynch, Ph.D. (1987), M.D. (1988) Marshall University; Residency in Pediatrics, Marshall University.

Robert Mehl, Ph.D. (1986), M.D. (1987): Residency in radiology, Methodist Hospital, Indianapolis.

Michael Spector, Ph.D. (1986): Postdoctoral in Molecular Biology, U. of Texas at Austin; Assistant Professor of Allied Health, U. of South Alabama, Mobile.

F. Program Impact:

The cooperative Ph.D. Program in the Biomedical Sciences was originally set-up in response to a requirement of the Liaison Committee on Medical Education (LCME) that a Ph.D. program be put in place as a condition to accreditation of the Marshall University School of Medicine. A free-standing degree will meet this requirement. In general, graduate study leading to the Ph.D. degree in the sciences basic to medicine (Anatomy, Biochemistry, Microbiology, Pharmacology and Physiology) is thought to strengthen all professional degree (M.D. at Marshall) programs. It does so by requiring faculty to maintain a current research interest in a medically related subject. It keeps the basic scientist abreast of the current literature and requires that new knowledge be applied expeditiously to the study of his or her chosen field. It is generally accepted that individuals carrying-out an active research program in which advanced doctoral students are involved are

better equipped to convey their knowledge to professional students in both a formal and informal setting. Furthermore, the existence of a doctoral level program requires a formal commitment of the institution to research and graduate education not normally found in Master's Degree granting institutions. The current curriculum for graduate study in the Biomedical Sciences will be maintained (See Biomedical Sciences Brochure, Appendix V). No new courses will be needed to implement a stand-alone degree.

G. Cooperative Arrangements:

A sequence has been approved which allows students accepted to the Doctor of Medicine Program to apply and be admitted to the Graduate School for the purpose of jointly pursuing a Master of Science in Biomedical Science. There are currently four students in this sequence. We would like to expand this sequence to enable highly qualified individuals to pursue the M.D. and Ph.D. jointly. A stand-alone doctorate in biomedical sciences would greatly simplify the administration of such a sequence. Criteria for each degree would not change, but joint application, joint registration and inter-university approvals would no longer be necessary.

Several faculty from departments outside the basic biomedical sciences have joint appointments. The following individuals fall into this category:

*Marcus Waldron, Ph.D. (Biological Sciences), Assistant Professor of Pharmacology

*Robert B. Belshe, M.D. (Medicine), Professor of Microbiology

*Maurice A. Mufson, M.D. (Medicine), Professor of Microbiology

Franklin L. Binder, Ph.D. (Biological Sciences), Professor of Microbiology

Ronald E. Gain, Ph.D. (Biological Sciences), Associate Professor of Microbiology

Three of these individuals (*) are currently members or have applied for membership in the Graduate Faculty of West Virginia University. It is expected that more faculty in the Departments of Biological Sciences and Chemistry would seek joint appointments in the basic science departments of the medical school if approval can be granted by Marshall University. Thus, the stand-alone program would serve to improve interdepartmental interactions on this campus and would ultimately result in the placement of Ph.D. level graduate students in laboratories on the main campus. This in turn should further stimulate development of the research capabilities in the Departments of Chemistry and Biological Sciences and move them to their stated goal of eventually establishing their own stand-alone Ph.D. programs.

H. Alternatives to Program Development:

The only viable alternative to this proposal for reclassification of the Ph.D. in Biomedical Science from cooperative degree status to a Marshall University degree is to continue the status quo. Pursuing the latter course of action will, in the opinion of Marshall University, maintain the fiction that the cooperative degree in biomedical science is a highly interactive program to which West Virginia University resources are committed. Maintenance of the cooperative Ph.D. in Biomedical Sciences will not improve the relative standing of Marshall University or the basic science departments of the School of Medicine with regard to pecuniary and prestige benefits as these are for the most part not under the control of the institution. In addition, only a stand-alone degree status would solve the difficult travel and geographical problems inherent in holding dissertation committee meetings either in Morgantown or Huntington. Finally, as indicated in Part II, A., location of a stand-alone doctoral granting program in Huntington, which will support the Ironton/Ashland/Huntington/Charleston area, will be a strong component in economic development of the region. As is well known, Huntington has become

a regional medical center within the last decade. The growth of this health care industry and the School of Medicine in a major population center of the State makes Marshall the logical site for an independent Ph.D. program in Biomedical Sciences, especially since the nearest Ph.D. granting institution is over two hours away from the Huntington metropolitan area.

PART III - PROGRAM IMPLEMENTATION AND PROJECTED RESOURCE REQUIREMENTS

A. Program Administration:

This program will be administered via existing personnel of the basic science departments of the School of Medicine. No changes in the institutional administrative organization will be required; however, the Graduate School Dean and Graduate Committee of the Marshall University Faculty Senate will approve Graduate Faculty for participation on Doctoral Committees.

Graduate Study Committee

1. The graduate programs of the Marshall School of Medicine are non-departmentalized programs and are supervised by a committee that transcends individual departments while functioning as the internal advisory and quality control committee of the graduate program within the Marshall School of Medicine.

The functions of the Marshall Graduate Study Committee include:

- a. Evaluation of graduate student applications and admission of students;
- b. Monitoring the activities and make-up of graduate student advisory committees;
- c. Evaluation and recommendation of candidates for assistantships and other awards;
- d. Formulation of guidelines relating to:
 - 1.) student conduct
 - 2.) student vacation
 - 3.) assistantship duties
 - 4.) academic progress
 - 5.) dismissal procedures

- e. Review new graduate course offerings and graduate curriculum periodically;
- f. Review and recommend all graduate faculty in the HMS Program for membership in the Graduate Faculty of Marshall University and approve faculty for supervision of students at the doctoral level.

The organizational structure includes:

- a. Representation - The chairpersons of the five Basic Science Departments of Marshall University;
- b. Chairpersons will serve indefinite terms;
- c. The Director of Graduate Studies will serve as chairman of the committee;
- d. Two at large faculty representatives will be elected to three year terms;
- e. The Dean of the School of Medicine of Marshall University or his designee will be an ex officio member of the committee;
- f. Regularly scheduled meetings to be held.

This committee will not fulfill the administrative activity of student record keeping. This activity would be more appropriately placed in the office of a Director of Graduate Studies, who would work with the Graduate Dean in the administration of the program.

Director of Graduate Studies

2. A Director of Graduate Studies, appointed by the Vice-President and Dean, School of Medicine, will have administrative authority for the day to day administration of the Biomedical Sciences Programs at both the Master's and Doctor of Philosophy levels. The Director of Graduate Studies will have the following functions:

- a. Serve as chairman of the Graduate Studies Committee and report to the faculty and to higher levels of administration the recommendations or other actions of the committee;
- b. Annually prepare a Biomedical Sciences Program Budget for approval by the Graduate Studies Committee and Dean. Administer the approved budget.
- c. Administer graduate student admissions to the program according to the policies of the Graduate Studies Committee and the admissions standards as stated in Part I, B, 1 of this document;
- d. Be responsible for the awarding of all stipends and general administration of stipends according to the following procedures:

All Personnel Action Requests (PAR) for graduate assistants, independent of departmental affiliation, will originate in the Program Office, both to initiate employment for new students and to reappoint for the July 1st fiscal year on an annual basis. On or about May 1st of each year the Program Director will assemble a list of current appointees and rank order list of newly admitted students taking into account: (1) Overall GPA, (2) Graduate Record Exam Scores, and (3) Letters of Reference for the latter. These lists will be submitted to the Graduate Studies Committee along with data showing the distribution of stipend funds to the five basic science departments. The Graduate Studies Committee will determine the award of stipends from these lists of eligible students.

The number of available stipends annually will be determined by the submission of a Program Budget to the Associate Dean for Finance and Administration and the Dean of the School of Medicine. This budget will be prepared by the Director of Graduate Studies and reviewed by the Graduate Studies Committee. Upon budget approval by the Dean, stipends may be awarded. The Graduate Dean will supply tuition waivers.

- e. Communicate the approval of faculty for Graduate Faculty membership and/or supervision of graduate students at the doctoral level to the Graduate Dean for review by the Graduate Committee of the Faculty Senate.

B. Program Projections:

There are currently 31 students enrolled in the Biomedical Sciences Program: 22 at the Master's and 9 at the Doctoral level. It is expected that enrollment will peak at approximately 40 students with 12 to 14 of these at the Ph.D. level. Growth is expected to sustain a graduation and recruitment rate of approximately 10 students each year with full student turnover every four years. (See Form I, Appendix VI).

C. Faculty Instructional Requirement:

Current resource commitments to faculty are indicated in Part 11, C. At least three additional full-time faculty at the rank of Assistant Professor should be recruited over the next five years. One of these positions in immunology should be funded from state appropriations to provide for immediate needs in this specialty. Two additional "soft money" positions could be funded from salary funds from federal grants held or newly obtained by current faculty. This would provide for needed growth in the basic sciences. As indicated by the LCME Report dated July 2, 1986, (pg 72, Item VI, C) "...the number of faculty in each basic science department is, in fact, minimal,

of scientific expertise in many areas," Appendix VII. It is projected that this need for faculty in the basic sciences, in order to provide a superior program, will require as many as five additional faculty, especially in the areas of molecular biology, neurobiology, protein chemistry and molecular toxicology. However, for the five year period 1989-94 three new positions are suggested.

D. Library Resources and Instructional Materials

The Health Sciences Library currently has some 36,000 volumes and approximately 3000 microforms. As shown in the "Comparison of Libraries at Schools with Ph.D. Programs in Biomedical Sciences" (Appendix VIII), these numbers compare favorably with other similar Universities. Although the holdings of the Health Science Library are far from ideal (LCME Report and Doctoral Program Review, Appendices VII and I), the fact still stands that eight Ph.D. students have graduated under the current circumstances and the limited library resources have not impeded this accomplishment.

In an effort to meet the criticisms of the national accrediting agency (LCME), the administration of the School of Medicine has submitted a plan for a new Health Sciences Library to the Board of Regents. This plan is currently under review. Other preliminary contacts with organizations in the community are also being explored to obtain private funding for improved library resources. According to Vice President Bryant, there is considerable sentiment that several million dollars may be available from the medical community for this purpose.

E. Support Service and Faculties Requirements:

No additional Support Services will be required because of a change in degree granting status. Currently, most basic science faculty involved in

this program are assigned 200-400 sq ft of laboratory and 100 sq ft of office
tration Hospital. Ancillary facilities such as isotope rooms, animal
facilities, computer facilities, instrument rooms, electron microscope suite
and teaching lecture facilities are adequate to continue the Ph.D. Program on
a stand-alone basis.

F. Operating Resource Requirement

See Form 2 (Appendix IX) for a summary of operating resource requirements
by object of expenditure. Since funding for the Biomedical Sciences graduate
program comes from the School of Medicine budget, change of status should have
no effect on funding to other Marshall programs. As indicated in the Self
Study Report to the North Central Association (pg 412): "Funding for the
School of Medicine...(is) adequate and not a drain on the rest of the campus,"
(Appendix X).

G. Source of Operating Resources:

Operating resources would come from appropriated (2800) and non-
appropriated (8600) funds. Under the current School of Medicine Budget
\$44,000 is allocated to graduate assistants. Currently, expenses in this
category are \$95,000 annually. Approximately \$51,000 of these expenses are
contributed from accruals on unfilled positions. Obviously, as positions are
filled this will be difficult to maintain, even with federal grants taking up
some of the expense. It is proposed that all graduate assistants, therefore,
be supported by appropriated funds and that an additional \$21,000/yr be
committed to this category over the five year projection (Form 2). (See
Doctoral Program Review - Biomedical Science, Appendix I.)

PART IV - PROGRAM EVALUATION

The Doctor of Philosophy and Master of Science degree programs in Biomedical Sciences will be evaluated simultaneously on a five year cycle according to the standards and procedures required by the Board of Regents. In addition, they will be evaluated regularly by the Liason Committee for Medical Education as a part of the accreditation process of the School of Medicine.

B. Accreditation Status

The Doctor of Philosophy in Biomedical Sciences program will be reviewed and accredited by the North Central Association as required by the change of "Affiliation Status" in establishing a stand-alone doctorate.