



Date: May 1, 2003
From: Bob Mitchell *Bob Mitchell*
To: Dan Larson
cc: Norm Freed, John Romano *John Romano*
Re: Penn State-Jefferson, Premed-Med Program

Attached are the original articulation agreement, a couple of published articles, and an up-to-date data sheet with information on the Penn State-Jefferson, Premed-Med, Accelerated Program. This material will give you a good background on the program, but let me also list for you some bullet points that will give you a quick overview of this 40-year cooperative effort between Penn State Premedicine and Thomas Jefferson University School of Medicine.

- This program began in 1963, four years before the opening of Penn State's medical school at Hershey. Some of the reasons for initiating this program included:
 - encourage highly capable high school students to pursue medicine, at a time when many of the best were going toward engineering
 - attract some top students to Penn State and Jefferson, who might otherwise not come to these universities
 - reduce stress of the regular competition for medical school admission
 - reduce total number of years to earn an M.D., and thereby possibly add years to the time spent practicing medicine
 - reduce cost of becoming a physician
 - avoid redundancy in undergraduate and medical school courses
 - add another dimension to the composition of a medical school class
- For the first 20 years of this program, when Penn State was on a 10-week, quarter- term system, admitted students would begin their Penn State studies during the summer term right after high school graduation. They would then continue study during Fall, Winter, Spring and Summer terms, before proceeding directly to Jefferson. However, to get their required 82 credits of undergraduate study, these students would return to Penn State for two more summer terms, after their first and second years at Jefferson. Forty-four credits of basic science from the first two years of medical school were counted toward the Penn State B.S. degree. This calendar allowed students to earn both their Penn State B.S. and Jefferson M.D. degrees in just 5 years.
- In 1984, when Penn State switched from a quarter to a semester calendar, the Program was modified to a 6-year program – two years, including two short,

summer sessions at Penn State, followed by four years at Jefferson (with no need for returning to Penn State during summers after starting at Jefferson).

- Last year, in 2002, an option was introduced whereby students are now permitted to select either a 6-year plan or a 7-year plan. The 7-year plan includes three years of study at Penn State, with no summer study required, followed by four years at Jefferson. Students in this plan have more opportunity for things like Independent Study research, participation in Cooperative Education programs, or Study Abroad.
 - Since its start in 1963, this program has graduated 850 students with B.S./M.D degrees. Longitudinal studies from the Jefferson Office of Medical Education clearly show that the program has been a success. Accelerated students, compared with a subgroup of other top Jefferson students who have completed four years of undergraduate study, “do as well academically and report a high degree of satisfaction with medicine as a career. There is no evidence to suggest that they are at a disadvantage on measures of performance, satisfaction or subsequent stress. In addition, accelerated students are indistinguishable from non-accelerated classmates on the basis of study time and social activities”.
 - Over the past several years, the average student admitted to this Program is either near or at the top of his or her high school class and has average SAT scores of 1510. Many are National Merit Scholars, and most arrive at Penn State with at least 25 AP credits.
 - Annual number of applicants to the program over the past 40 years has ranged from as low as 107 to as high as 628. Since 1995, we have been making about 50 offers of acceptance, with expectations that about 25 will matriculate. Generally, two or three students per class will drop out of the program during the first two Penn State years, and an average of one per class will drop out of the Jefferson part of the program. However, some of these return at a later date or go on to other medical schools.
 - Students must maintain a 3.5 GPA during their undergraduate time at Penn State, and they must score at least 9’s on the MCAT exam. However, most of these students leave Penn State with GPA’s closer to 4.0 and have average MCAT scores in the 11-12 range. Also, high proportions of these students are graduated from Jefferson with honors and receive numerous awards and prizes.
 - At present, there are five other medical schools in the U.S. that have 6-year Premed-Med programs. They are
 - Univ Missouri – Kansas City School of Medicine
 - Rensselaer Polytech Inst & Albany Medical College
 - Texas A&M Univ Health Sci Center College of Medicine
 - Univ of Miami School of Medicine
 - Northeastern Ohio College of Medicine
- In addition, there are twelve 7-year Premed-Med programs. They are:
- Univ Calif, Riverside – UCLA school of Medicine
 - Columbia School of Arts & Sci – George Washington Med School
 - Univ Florida School of Medicine
 - Northwestern Univ School of Medicine
 - Boston University

- UMDNJ – New Jersey Medical School
- City Univ of New York Medical School
- Union College – Albany Medical School
- Ohio State Univ College of Medicine
- Fisk Univ – Meharry Medical School
- Univ of Wisconsin Medical School
- Lehigh Univ – Drexel Univ School of Medicine

And, there are twenty-five 8-year Premed-Med programs, where medical schools offer Early Assured Admission, usually for students from undergraduate programs at the same university as the medical school.

A PROPOSED COOPERATIVE
PREMEDICAL AND MEDICAL PROGRAM
AT
THE PENNSYLVANIA STATE UNIVERSITY
AND
THE JEFFERSON MEDICAL COLLEGE

Ralph G. Ascah
June 1961

Introduction

The Jefferson Medical College has requested that consideration be given to a cooperative program of combined premedical and medical education with The Pennsylvania State University. Among the various alternatives is a scheme for very markedly reducing the time required for obtaining the M.D. degree which would involve a minimum of academic preparation prior to admission to the Medical School and a continued Baccalaureate program while enrolled in the Medical School.

The following curricular outline is proposed as a possible means for effecting this combined program.

This outline presupposes the following:

1. Suspension or redefinition of the present University Senate Regulations E-3 concerning 60 of the last 75 credits for a first baccalaureate degree.
2. That appropriate elective courses are available during the first two years at the Jefferson Medical College.
3. That the Summer Terms at The Pennsylvania State University include appropriate advanced courses in the Arts, Humanities and Social Sciences. (see below for indication that this was so in Summer 1961 on the University Park Campus)
4. That all the present available free time (exclusive of the evenings) during the first two years at The Jefferson Medical College be utilized as in item 2, above.
5. That the minimum State requirements for admission to Medical School are met during the first 5 terms at The Pennsylvania State University.

6. That no new courses or changes in existing courses as now offered at The Pennsylvania State University are required.
7. That all General Education requirements for the Baccalaureate Degree at The Pennsylvania State University are met.

Six-Year College Premedical and Medical

Program

Five Calendar Years

1. Five consecutive terms at The Pennsylvania State University beginning with the Summer Term following graduation from High School. ---65-67 cr.
 2. 1st. year at The Jefferson Medical College to include 6 Penn State elective credits ----- 6 cr.
 3. Summer Term at the Pennsylvania State University -----11-12 cr.*
 4. 2nd. year at the Jefferson Medical College to include 4 Penn State elective credits ----- 4 cr.
 5. Summer Term at The Pennsylvania State University ----- 12 cr.
- Total credits 98-101

* Must include Air or Army 6, 0-1 credits and Speech 200 (3 credits) unless previously completed.

The Five Term Sequence at The Pennsylvania State University

<u>SUMMER TERM</u>	<u>Credits</u>	<u>FALL TERM</u>	<u>Credits</u>
*Chem. 12, General Chemistry	3	Chem. 13, Chemical Principles and Qualitative Analysis	4
Engl 1, Composition and Rhetoric	3	Engl. 3, Exposition	3
Math. 41, Analytic Geometry	3	Math. 42, Calculus I	3
Zool. 25, General Zoology	3	Zool. 26, General Zoology	3
Ph. Ed. 1	1	Air 2 (0) or Army 2 (1)	<u>0-1</u>
Air 1 (0) or Army 1 (1)	<u>0-1</u>		13-14
	10-11		
<u>WINTER TERM</u>	<u>Credits</u>	<u>SPRING TERM</u>	<u>Credits</u>
Chem. 30, Organic Chemistry	4	Chem. 31, Organic Chemistry	4
Math. 43, Calculus II	3	Foreign Language	3
Phys 201, General Physics I	4	Phys. 202, General Physics II	4
Ph. Ed. 2	1	Ph. Ed. 3	1
Air 3 or Army 3	<u>1</u>	Air 4 or Army 4	<u>1</u>
	13		13
<u>SUMMER TERM</u>	<u>Credits</u>		
Foreign Language	3		
Phys. 204, General Physics III (b)	4		
† Elective	4		
Ph. Ed. 4	1		
Air 5 or Army 5	<u>1</u>		
	13		
		Total 65-67 credits	

* The prerequisite for this course, Chem. 11 may be removed by passing a proficiency examination. If Chem. 11 is not passed by examination, it must be scheduled in addition to the foregoing arrangement of courses to remain in this option (c.f. p 72, The Pennsylvania State University Bulletin, Baccalaureate Degree Program 1961-1962)

† Must include 2 further credits in the Biological Sciences to meet minimum State requirements.

The remaining credits required for the Baccalaureate Degree (approximately 30 credits) for a total of 130 credits are to be considered as being satisfied by the successful completion during the two years at the Jefferson Medical College courses such as:

Anatomy
Biochemistry
Embryology
Histology
Microbiology
Physiology

Electives: In order to satisfy other general graduation requirements for the Baccalaureate Degree at the Pennsylvania State University, not already taken care of in the specified required courses, there must be a minimum of 12 credits in the Social Sciences and the Humanities with not less than 3 credits in each.

The following courses would seem to be appropriate as electives in the Arts, Humanities and Social Sciences. This list is not comprehensive but includes only those courses scheduled to be offered during the Summer Term 1961.

Anthropology 1 and 10

Art and Architectural History 1 and 10

Commerce 8, 30, 31

Economics 2, 14, 23, 405

English 17, 19, 108, 120, 122, 132, 408, 451, 476

French 1

General Education, HUM 1, INT.U 1

Geography 20, 26, 443

German 1, 2, 3, 4, 11, 424

History 17, 18, 19, 20, 21, 22, 170, 408, 427, 432, 443

Journalism 1, 13, 40, 424, 466, 499

Music 1, 5, 6, 11, 18, 21, 28, 31, 38, 77, 78, 89, 111, 118, 157, 200,
220, 228, 229, 240, 408, 411, 429, 459, 466

Philosophy 1, 2, 3, 4

Political Science 3, 4, 10, 20, 411, 415, 419

Psychology 2, 4, 13, 14, 15, 21, 412, 414, 417, 418, 425, 426, 431, 436,
437, 438, 440, 450, 474, 482

Rural Sociology 11

Russian 1, 3, 11

Sociology 1, 5, 12, 13, 60, 320, 401, 470

Spanish 1

Speech 200, 252, 280, 437

Theatre Arts 16, 62, 404, 412, 442, 443, 470

Certain other adaptations and/or revision of the present Premedical Curriculum are outlined in the following pages. These involve , with one exception, continuous residence at The Pennsylvania State University prior to admission to the Medical College.

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|--|----------|
| (a) 2 year Premedical Program | 9 terms |
| (b) 3 year Premedical Program | 9 terms |
| (c) An alternate 2 year Premedical Program | 9 terms |
| (d) 3 year Premedical Program | 12 terms |
| (e) 4 year Premedical Program | 12 terms |

2 year Premedical Program (9 terms)

and

3 year Premedical Program (9 terms)

These two programs are comparable to the extent that the same course requirements are listed. In each case in lieu of the senior year of the Baccalaureate Degree program (3 terms), the first year at Medical College would be offered for the B. S. degree.

The 2 year program (outlined term by term below) would presuppose that a student enters The Pennsylvania State University in The Summer Term immediately following his graduation from High School and continue uninterruptedly for 9 terms. He then enters the Medical College in the Fall, two years subsequent to his initial enrollment at the University. Following satisfactory completion of the first year at Medical School he is granted the B. S. degree from The Pennsylvania State University.

The 3 year Premedical Program consists of the same course requirements, the same 9 terms but without attendance at The University during the Summer Terms. The student then enrolls at a Medical School in The Fall, three years

subsequent to his initial enrollment at The University. Again the first year at Medical School is counted as the Senior Year of the Baccalaureate Program.

In either case, the following restrictions, not already accounted for, with respect to electives would be in operation by University Senate regulations.

(a) Speech 200 3 cr. is required

(b) Twelve credits in The Humanities and Social Sciences, with not less than three credits in each.

An Alternate 2 year Premedical Program (9 terms)

As an additional possibility, a student who enrolls at The Pennsylvania State University in the Fall may continue for eight consecutive terms to enter Medical College in the Fall, two years subsequent to his initial enrollment at the University. His 9th term may then be the summer, immediately following his first year at Medical College.

3 year Premedical Program (12 terms)

and

4 year Premedical Program (12 terms)

Attached is the present premedical curriculum which has recently been adapted to the term system now in operation at The University. It has been modified from the curriculum of the past several years only to the extent required, by course changes put into effect by The Department offering the courses. However, the intention has been to make a thorough revision of this curriculum as soon as the University has settled down to the term system of operation. The program, as recently as this past June, has been completed in three years by students desirous of utilizing the summer for study toward the bachelor's degree.

PRE-MEDICAL CURRICULUM

FIRST TERM	Credits	SECOND TERM	Credits
Chem. 11, General Chemistry	3	Chem. 12, General Chemistry	3
Engl. 1, Composition and Rhetoric	3	Engl. 3, Exposition	3
Math. 41, Analytic Geometry	3	Math. 42, Calculus I	3
Ph. Ed. 1	1	Ph. Ed. 2	1
Air 1 (0) or Army 1 (1)	<u>0-1</u>	Air 2 (0) or Army 2 (1)	<u>0-1</u>
	10-11		10-11

THIRD TERM	Credits	FOURTH TERM	Credits
Chem. 13, Chemical Principles and Qualitative Analysis	4	Chem. 30, Organic Chemistry	4
Math. 43, Calculus II	3	Phys. 201, General Physics I	4
Elective	3	Zool. 25, General Zoology	3
Ph. Ed. 3	1	Ph. Ed. 4	1
Air 3 or Army 3	<u>1</u>	Air 4 or Army 4	<u>1</u>
	12		13

FIFTH TERM	Credits	SIXTH TERM	Credits
Chem. 31, Organic Chemistry	4	Chem. 23, Analytical Determinations	4
Phys. 202, General Physics II	4	Phys. 204, General Physics III (b)	4
Zool. 26, General Zoology	3	Zool. 29, Mammalian Anatomy	3
Air 5 or Army 5	<u>1</u>	Air 6 (0) or Army 6 (1)	<u>0-1</u>
	12		11-12

Pre-Medical Curriculum 2

SEVENTH TERM	Credits
Chem. 46, Elementary Physical Chemistry	3
Bot. 27, The Principles of Biology Illustrated with Plant Materials	3
Ger. 1, Elementary German or Ger. 3, Intermediate German	3
History 20, History of U.S. to 1865, or Hist. 21, History of U.S. since 1865.	3
	<u>12</u>

EIGHTH TERM	Credits
Chem. 47, Elementary Physical Chemistry	2
Chem. 457, Experimental Physical Chemistry	1
Ger. 2, Elementary German or *Fr. 1, Elementary French	3
Psy. 2, Psychology	3
Speech 200, Effective Speech	3
	<u>12</u>

NINTH TERM	Credits
Bact. 1, General Bacteriology or Zool. 440, Embryology	4
Chem. 458, Experimental Physical Chemistry	1
Engl. Elective	3
Zool. 41, Human Physiology	3
Elective	2
	<u>13</u>

TENTH TERM	Credits
A.B.Ch. 436, Physiological Chemistry	3
Econ. 14, Principles of Economics	3
Elective in Liberal Arts or Education	3
Elective	3
	<u>12</u>

ELEVENTH TERM	Credits
A.B.Ch. 437, Physiological Chemistry	3
Zool. 437, Histology (4) or Liberal Arts Elective	4-6
Elective	3
	<u>10-12</u>

TWELFTH TERM	Credits
A.B.Ch. 438, Physiological Chemistry	3
Electives	9
	<u>12</u>

*If Ger. 3 is completed in the previous term.