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THE DEVELOPMENT OF THE SCIENCES: LIFE AND PHYSICAL

AT GLASSBORO STATE COLLEGE

1923 - 1974

Glassboro State College was founded in 1923 as a Normal School. Science education then consisted of two courses: Biology and Applied Science. The latter was actually an agronomy course. In 1926 the program was changed: Biology was still offered; but Applied Science became concerned with "the application of science to the solution of the problems of the home, the school and the community . . .". Taking the place of the original Applied Science was a new course titled, Agriculture. Glassboro was an agricultural center at that time and the science program reflected the needs of an elementary teacher in a rural school. By 1948, a wider variety of courses was available, reflecting the college's growth from a purely primary and elementary teacher training school to include a junior high school teacher program. The science courses available (each for 1 semester and 2 credit hours) were: Survey of Astronomy and Geology, Survey of Chemistry and Physics (for elementary and primary teachers), Chemistry for Teachers (for teachers of grades 5 - 9, particularly grade 9), Physics for Teachers (for teachers of grades 5 - 9, particularly grade 9), Biology (animal and human), Biology (plant), and Aviation Education for Teachers (apparently for elementary teachers). The staff consisted of three members all versed in the teaching of science in the elementary schools.

Until 1956, all science teaching was done in two rooms on the first floor of Dunce Hall and in the college greenhouse. In 1956, a third room on the second floor was added to the science teaching facilities. In 1960-61 Bosshart Hall was opened nominally as the Science Building; but the entire college administration, Mathematics, Social Studies and Art were also housed here for various periods of time.

Glassboro State Teachers College became a four-year degree granting institution in 1935. In 1958, the State Teachers Colleges were all designated State Colleges. Programs in Secondary Teacher Education were developed in addition to the K-P and elementary programs. A Secondary Science Curriculum was instituted in 1960. This was a general science program with a strong tendency for the major emphasis to be in biology. At this time there were eight science teachers on the staff, including six with a biology background, one chemist and one physicist.

By 1965, the physical science staff and course offerings had grown to the point that two tracks in science education could now be offered: Biological and Physical Sciences. The Physical Sciences emphasis was split into three tracks (Chemistry, Comprehensive*, Physics) to meet new teacher certification requirements. The Comprehensive track was soon qualifying students for the Earth Science Teaching Certification, as well as the Science Certification.

Events off campus next had a strong influence on the further development of the sciences at Glassboro State College. The State Board of Education directed the State College to institute liberal arts programs in 1966. In response to the State Board directive, some liberal arts programs were set up.

In 1967 the Legislature ordered the creation of the State Board of Higher Education. The new Board of Higher Education promptly directed the State Colleges to become multipurpose, thus establishing a Liberal Arts and Sciences Division in each college.

The 1967-68 Glassboro State College catalog listed a Liberal Arts and Sciences Biology program which had been approved at the regular meeting of the State Board

*Title of a teacher certification since dropped. Included physics, chemistry, earth and space sciences and at least one biology course. Now called Science with more requirements.

of Education on June 28, 1967. Soon thereafter a Liberal Arts Chemistry program was proposed. In a letter dated May 13, 1970 addressed to Dr. Stanton B. Langworthy, Vice President for Academic Affairs, Dr. Chamberlain stated that the Department of Higher Education had advised that certain Liberal Arts programs be implemented in the Fall of 1970, pending final action by the Board of Higher Education (copy of letter appended). Among these programs was Chemistry. This program was then instituted by the Science Department. Preparation of students for science teaching, however, was still a major part of the load for the Science Department

There was considerable state-wide concern in the late 1960's with the quality of science education in the New Jersey State Colleges. A committee with the title, The Committee on Science and Mathematics in the State Colleges of New Jersey (otherwise known as the "Pollack Committee", named for its Chairman, Dr. H. O. Pollack of the Bell Laboratories), visited each campus and interviewed staff, administration, and students, examined physical facilities and programs. The final report, submitted in September of 1968, addressed itself to generalities covering science and mathematics at all the State Colleges and then dealt with specifics for each college and the programs available at those colleges.

The following are some excerpts from the report:

"Chemistry cannot be considered as a field of specialization peculiar to certain of the State Colleges and offered only superficially at others. It must be developed to designated minimum standards at each of the State Colleges."
(pp. 122-123).

"Glassboro is also a long way from a physics major, but the situation there is easier to analyze than that of the other colleges. No effort has been made so far at this college to offer any intermediate or advanced level physics courses."
(p. 75).

"Glassboro could profitably expand its offerings in geology and allied studies. Its location makes field study of the geological sciences especially accessible, and the past and present industrial history of southern New Jersey are especially relevant." (pp. 144-145)

In response to the above and other criticisms the physical sciences staff has made tremendous strides forward in the development of courses with depth in all areas.

Special funding was proposed in the Pollack Report for upgrading the equipment in the sciences. The Legislature allocated \$75,000 separate funds for equipment in the sciences at Glassboro for each of three years, starting with the academic year 1968-69. A memorandum from the Provost's Office dated August, 1971, titled, The 1971-1972 Budget Deficit or How to Fit a Size 14 Institution into a Size 10 Budget!, had the following closing notations:

"Reserves:

Replacement Equipment	\$28,000
Additions and Improvements	100,000
Science Equipment Package	75,000
New Degree Major Programs	75,000
	<hr/>
	\$278,000 Total

Note: These funds are placed in escrow as a reserve, and can be released for the intended purposes if it can be determined that they will not be needed to eliminate the deficit."

The "Science Equipment Package" was not released from escrow. The fifth year of special funding which we had been assured did not appear.

During the Fall of 1968 Donald Zalusky started working actively on *the* concept of a marine sciences consortium to permit the teaching of marine sciences, which no one school could adequately do. Dr. Zalusky's efforts culminated in the New Jersey Marine Sciences Consortium being incorporated under the laws of the State of New Jersey, February 1969. Glassboro State College faculty have played

a very active role in the consortium, guiding it through many years when it was in danger of being submerged by financial and political problems. Dr. Renlund and Dr. Zalusky have both served as president of the consortium; while Mr. Waring has been secretary periodically. (See Addendum C).

Although Glassboro State College has only offered the one course in astronomy (until 1972 when a laboratory course was added), interest in astronomy on campus has been active. We have been fortunate in having enthusiastic astronomy teachers who have passed their enthusiasm on to many of their students. In February of 1968, Dr. Olen Self, who had been engaged to broaden the astronomy offerings, died quite suddenly. Plans for an observatory had been developing for sometime; a light, fiberglass dome had been procured even before we had any idea where to put the observatory. With the death of Dr. Self, the plans were pushed ahead. On March 21, 1971, at 2:00 P.M. (Vernal Equinox) the Olen Self Observatory was dedicated by Dr. I. M. Levitt, Director of Fels Planetarium. The observatory, situated on the roof of Bosshart Hall, is visited by elementary school children as well as adults to make night observations of the stars.

In the Spring of 1970 there was active discussion relating to dividing the Science Department into two departments: Life Sciences and Physical Sciences. The single department was becoming too unwieldy with the several disparate programs. In the Fall of 1970, it became very apparent that the division should take place sooner than had been planned - at the close of the Spring semester 1971.

At this time the Science staff consisted of 31 members: 17 Life Science teachers, 14 Physical Science teachers (5 chemists, 3 physicists, 6 earth and space scientists).

ADDENDUM A:

FURTHER DEVELOPMENT OF PHYSICAL SCIENCES

At the first Physical Sciences departmental staff meeting, the internal administrative structure of the department was set up: Chemistry Division, Physics Division, and Earth and Space Sciences Division. Each division has its own director.

When Glassboro State College was designated as a multi-purpose school with a Liberal Arts and Sciences Division, a number of programs which had been teacher education programs became liberal arts programs. Biology already existed. We believed Chemistry also to be in existence. There was no apparent reason why the Physical Science Teacher Education Program could not have been converted, with very little change, into a liberal arts program. In August of 1972, the program proposal was ready for submission. A document from the State Department of Higher Education, title, Procedures for Program Approval, dated April, 1972 was called to my attention. The last sentence in the first paragraph of that document reads as follows: "These procedures (submitting a summary proposal to the State Board of Higher Education for preliminary approval, etc.) do not apply to programs which are logical extensions of existing programs." The proposed program was believed to be a logical extension of the existing Secondary Science Teaching, Chemistry emphasis; Secondary Science Teaching, Physics emphasis; Secondary Science Teaching, Comprehensive emphasis (actually Earth Science teacher preparation). All that was done was to substitute free electives for all the professional education courses. No new courses were proposed. Both the then Dean of Liberal Arts and the then Provost agreed. The Physical Sciences Liberal Arts Program, with its three concentrations, was entered in the catalog for 1972-74.

At the same time, all responsibility for secondary science teaching certification was vested in the Secondary Education Department.

The Physical Sciences Department Earth and Space Sciences staff has been working on the development of a Geology Major, while the Chemistry staff has been working for A.C.S. accreditation. We have been evaluated once. Suggestions for changes and improvements were made. The chemistry staff is implementing the changes and improvements. The Physics staff has been strengthening the undergraduate offerings, moving a number of graduate courses into the undergraduate program, and completely changing the character of the graduate offerings.

ADDENDUM C:

NEW JERSEY MARINE SCIENCES CONSORTIUM

Starting only with enthusiasm and an idea, a small group of faculty from several colleges, and in particular, Glassboro, was able to weld together a consortium of colleges to provide collectively what was not feasible for the individual college.

The purpose of the consortium was financial from the above standpoint, but the educational objectives were to provide a marine sciences laboratory where students and faculty would have the opportunity to pursue educational objectives as well as to conduct research. This latter should be viewed in terms of the extremely limited space, facilities, and financial support available at Glassboro in the sciences.

Important also, but less definable in quantitative terms is the stimulation of faculty, geographically and institutionally isolated, interacting and communicating on research problems, teaching techniques, and a host of other mutual concerns. The consortium concept brings students from various schools in contact with students and faculty from schools other than their own, and greatly broadens the learning experience.

The success, goals and objectives of the consortium were recognized by the Chancellor's Master Planning Committee for Marine Sciences, and the consortium was chosen as the vehicle for marine science education and research for the State's institutions of higher education in the proposed Master Plan submitted to the Board of Higher Education. Adoption of the Master Plan by the Board in August, 1974, and budgeting of \$120,000 for the academic year 1974-75, indicates the status of the efforts.

The consortium had acquired, prior to the State recognition and support, 62 acres of virgin marsh land for ecological studies; an 18 acre tract with 24

buildings (value approximately 1.5 to 2.0 million dollars), a 32-foot cabin cruiser, a 28-foot cabin cruiser, a 26-foot sail boat, several smaller outboard boats, a jeep, a pickup, and a 15-passenger van; in addition, approximately \$60,000 of laboratory equipment is owned by the consortium.

Since the reorganization (September 1974), the consortium has grown to include the following member colleges and universities:

- | | |
|--------------------------------|---------------------------------|
| Atlantic Community College | Montclair State College |
| Brookdale Community College | Wm. Paterson State College |
| Cumberland County College | Princeton University |
| Fairleigh Dickinson University | Rutgers University |
| Glassboro State College | Stevens Institute of Technology |
| Lehigh University | Stockton State College |
| Kean College of New Jersey | Trenton State College |
| Monmouth College | |



State of New Jersey

GLASSBORO STATE COLLEGE
GLASSBORO, NEW JERSEY 08028

November 18, 1974

Dr. Bertram Masia, Director
Office of State Colleges
Department of Higher Education
225 West State Street
Trenton, New Jersey 08625

Dear Bert:

I have reviewed the correspondence between you and Alan Donovan pertaining to the approval by the Board of Higher Education of the science programs being offered at Glassboro State College. Although it is difficult to determine why and how communications broke down, nevertheless, such did occur. We are in agreement with your proposal to move quickly to clear up the matter by having consultants visit the college, meet the faculty involved, inspect the laboratory facilities and prepare a written evaluation report.

The programs involved are Biological Science, Chemistry and Physical Science. While the confusion about the status of these programs differs, we believe an evaluation of all would be valuable. Attached is information about the Liberal Arts Biological Science not previously referred to in the correspondence between you and Dean Donovan. We would leave it to your judgment as to whether subsequent action would be initial approval, registration, confirmation or reapproval.

We are getting started the preparation of the "proposal" documents and we will be forwarding to you soon the names of potential consultants.

Sincerely,

A handwritten signature in cursive script that reads "Lawson".

Lawson J. Brown
Vice President for
Academic Affairs

LJB/bos

cc: Dr. Chamberlain
Dr. Donovan



State of New Jersey

GLASSBORO STATE COLLEGE
GLASSBORO, NEW JERSEY 08028

DEAN OF LIBERAL ARTS AND SCIENCES

October 3, 1974

Dr. Bertram Masia, Director
Office of State College Programs
Department of Higher Education
225 West State Street
Trenton, New Jersey 08625

Dear Bert,

In light both of your letter to me of September 19 and our telephone conversation of September 27 about our Chemistry program and after still further examination of our records, I would like to begin by calling your attention to some relevant documents.

Attachment "A" is a letter dated March 23, 1970, sent by Mark to Bruce Robertson. On the last page of this letter the Chemistry major is referred to by Mark as having received conditional approval "dependent upon additional faculty and facilities". We have no correspondence from the Department of Higher Education indicating that we were not to proceed on the basis we did, based on the agreement spelled out in this letter. Thus, the major was begun in the Fall of 1970 with only freshmen allowed to matriculate.

Evidently, some confusion did exist at that period of time as to the process by which emerging liberal arts programs should be approved. Attachment "B" is a copy of a memo from James Mullen, then President of Jersey City State College, spelling out an agreement reached with Joe Murphy in this regard. I call your attention to the last two paragraphs on Page 2, whereby the agreed procedures called for approval by the Board of Higher Education only for those programs "not derived from existing Arts and Science courses...." Moreover, Attachment "C" (Letter from Chancellor Dungan to Mark, dated November 28, 1969) indicates on Page 2 that "In the case of new Arts and Sciences majors that are derived directly from teacher training programs... no formal approval is required". Since our Physical Science Education program was approved in 1963 with the strongest emphasis being in Chemistry, launching a Chemistry program, emerging from the pre-existent Chemistry courses part of this program, was perfectly consistent with the policies as we were given to understand them.

Therefore, unless you have documentation which qualifies or nullifies what we understood from the above correspondence, then it seems to me that the least we can be expected to do is to request registration of the Chemistry program (Attachment "C", page 2, paragraph 1) and the most we can be expected to do is to clarify the status of faculty and facilities in order to receive unconditional approval. (Attachment "A") I believe that to proceed with the current program approval process from the beginning, however expeditiously, is unwarranted because this assumes we did not seek in good faith to follow steps necessary for proper authorization in the first place.

Sincerely,


AT B. Donovan

cc: Dr. Chamberlain
Dr. Brown
Mr. Dike
Dr. Schultz



State of New Jersey

DEPARTMENT OF HIGHER EDUCATION
225 WEST STATE STREET
P. O. BOX 1293
TRENTON, NEW JERSEY 08625

September 19, 1974

Dr. Alan B. Donovan
Dean of Liberal Arts and Sciences
Glassboro State College
Glassboro, New Jersey 08028

Dear Alan:

Since receiving your letter of September 17, we have searched the official records of the Board of Higher Education and can find no evidence to support your assertion that the Board once approved an undergraduate Chemistry major at Glassboro State College.

Unless you can provide us with the missing evidence by October 1, we shall have to conclude that the College is offering an unauthorized major and take appropriate action to correct the situation.

Sincerely,

A handwritten signature in cursive script, appearing to read "B. Masia".

Bertram B. Masia, Director
Office for State Colleges

cc: Dr. Chamberlain
Dr. Brown

11-14-40
110-4000

STATE OF NEW JERSEY
Department of Education
Trenton, New Jersey

November 14, 1940

Dr. Mark N. Chamberlain, President
Glassboro State College
Glassboro, New Jersey 08028

Dear President Chamberlain:

As you know, there has been discussion ever since the began operations under the Higher Education Act as to the intent of the Legislature with respect to Board of Higher Education approval of new programs. The pertinent section of the law is applicable to New Jersey public institutions in as follows:

"The Board of Higher Education shall: ...establish minimum standards for all public institutions of higher education for degree granting, approved programs and degrees and approved disciplines and courses and educational programs in regular attendance; however, in this act shall be construed to prevent individual institutions from establishing higher minimum standards for degree granting; the term 'degree' used in this subparagraph means a type of field in which degrees or nondegree certificates are granted and shall not include individual courses or parts of courses; nor shall it include the content or titles of areas of fields already in existence."

The purpose of this letter is to aid further in clarifying the meaning of the law.

The Board of Higher Education will be glad to discuss the law as used in the above cited matter and to answer any questions you may have for the purpose of clarifying the meaning of the law. Such an explanation of course will be a matter of confidential information and will be a matter of confidential information and will be a matter of confidential information.

Dr. Mark M. Chamberlain
November 28, 1969
Page 2


In the case of new Arts and Sciences majors that are derived directly from teacher training programs such as a program for secondary teachers of English, no formal approval is required. In the case of programs of this type, we would simply request that you notify us so that we can register these as approved Arts and Sciences majors. In other words, the Board recognizes that this kind of program requires no further review or approval.

In the case of programs that have not been offered in the past or have been offered at a level not appropriate for an Arts and Sciences Degree, we believe that it is necessary to have a systematic review and approval by the Board of Higher Education. It is quite clear that a program like a Bachelor's Degree in Computer Science would fall into this category; that is, entirely new programs that never have been offered at the college.

In other areas, for example, where a college proposes to offer an Arts and Sciences Degree in physics where heretofore it has had approval for programs designed to qualify secondary teachers in the natural sciences, formal approval is required. Modern language programs also fall into this same category.

There remains the very important problem of working out an adequate set of procedures and standards which will enable the Board to fulfill its responsibility without imposing any kind of an unreasonable burden on the colleges or intruding on their autonomy and rightful prerogatives. I want to assure you that neither the Board nor I in any way want to impose an unnecessary or undesirable burden. I would very much appreciate it then if you would designate one or more persons from your staff to serve on a committee headed by Dr. Robertson to develop a program review procedure for the colleges which would serve all of our needs.

Sincerely,


Ralph A. Tucker
Chancellor



→ Tom Duff

OFFICE OF THE
PRESIDENT

JUL 17 1970

CLASBORO STATE COLLEGE

*Copies to
Bretz
Neff
Brown
Kerrison*

State of New Jersey
JERSEY CITY STATE COLLEGE
JERSEY CITY, N. J. 07305

OFFICE OF THE PRESIDENT

MEMORANDUM

TO: Presidents, New Jersey State Colleges;
Chairmen, Boards of Trustees, New Jersey State Colleges

FROM: James H. Mallen, President

DATE: July 13, 1970

SUBJECT: Program Approval Procedures

You will doubtless recall the discussion which occurred at our last meeting of the Council of State Colleges and the following action was taken by the Council, and I was instructed to transmit the motion to the Board of Higher Education at its meeting on June 19:

"It was moved and seconded that the Chairman of the Council of State Colleges in his capacity as a member of the State Board of Higher Education, request the State Board of Higher Education to approve State College programs scheduled for action on June 19 with the understanding that such approval does not constitute a precedent vis-a-vis the process of future approval. Further that he recommend that the State Board take appropriate steps to review the statute requirements for program approval and the processes and identify what constitutes a new or a revised program under the statute."

The Council's motion was read into the record of the Board of Higher Education at that time. The issue which was presented was the question as to whether or not Boards of Trustees of the Board of Higher Education should approve the program to be added to existing clusters of courses in Arts and Sciences, and the undergraduate program in Biology declared in the Board of Higher Education.



State of New Jersey
GLASSBORO STATE COLLEGE
GLASSBORO, NEW JERSEY 08028

OFFICE OF THE PRESIDENT

March 23, 1970

Dr. Bruce Robertson
Special Assistant to the Chancellor
Department of Higher Education
225 West State Street
Trenton, New Jersey

Dear Dr. Robertson:

In accordance with your instructions, I am hereby submitting the changes in liberal arts programs which we agreed upon at the March 4 meeting.

French and Spanish

The courses, Intermediate Grammar (25.110, 27.110) and Intermediate Reading and Conversation (25.111, 27.111) are to be eliminated from the major program, except as prerequisites to Reading and Composition (25.210, 27.210). The Reading and Composition courses are thorough and rigorous, designed to insure that the capabilities of students are sufficient to pursue the language program with reasonable success. Two additional courses will now be required in each language, Reading in Contemporary Literature (25.320, 27.320) and one additional language elective.

In the 1970-71 academic year, the Foreign Language Department will offer nine upper division courses in each language. Enrollment estimates are light at this time but should increase as the programs are advertised to county college transfers.

Sociology

In the 1970-71 academic year the Social Studies Department will offer all required courses except Statistical Methods, plus elective courses listed in our catalog. This makes a total of six upper division courses to be offered in the 1970-71 academic year. By September, 1971, all proposed courses should be offered, priorities to be assigned as follows: 1) Research Techniques and Statistical Methods for Sociology; 2) Crime and Delinquency; 3) Group Dynamics; 4) Demography, Industrial Sociology, and Sociology of Religions; 5) Principles of Social Welfare and Sociology of Child Development.

Current staff could teach all except Statistical Methods; a staff member is currently being recruited to fill this gap. It is understood that staggering of courses will be necessary to use staff most economically.

The Senate Curriculum Committee will consider the subject of proliferation of statistics courses.

Political Science

In the 1970-71 academic year, the Social Studies Department will offer all required political science courses plus nine elective courses listed in our catalog. Seven political science courses are on the upper division level.

The political science program at Glassboro State College will initially focus on American Government (Federal, State and Local with an emphasis on urban affairs). The scope will expand gradually into the international scene as facilities and staff permit.

In support of this concentration, the following personnel with the specializations indicated are currently employed by Glassboro State College:

- Dr. Eva Aronfreed - American Government: State and Local;
Urban Affairs
- Mr. Joseph Guannu - Political Theory; African Policies and Politics
- Mr. Robert Becker - Constitutional Law; American Government
- Dr. Robert Harper - International Relations
- Mr. Maurice Blanken - Political Behavior; American Government
- Mrs. MaryEllen Hewsen - International Relations: Middle East
Policies and Politics

Psychology

In the 1970-71 academic year, the Psychology Department will offer at least two courses in all required areas; eight of these are upper division courses.

Early Childhood Education

In the 1970-71 academic year, the Elementary Education Department will offer all required and elective courses in this major program; nine of these are upper division courses.

Speech and Drama

In the 1970-71 academic year, the Speech and Drama Department will offer all required courses and all but four elective offerings; nine of these are upper division courses.

It is my understanding that I will receive a letter from your office indicating that Glassboro may implement the following programs in September, 1970:

Liberal arts programs adapted from existing offerings in teacher education:

- Spanish
- French
- Speech and Drama

Professional program offered in conjunction with an existing offering in teacher education:

Early Childhood Education

New liberal arts programs:

Psychology

Sociology

Political Science

Chemistry (conditional approval -- first year students to be enrolled with final approval dependent upon additional faculty and facilities)

Sincerely yours,

Mark M. Chamberlain
President

MMC/e