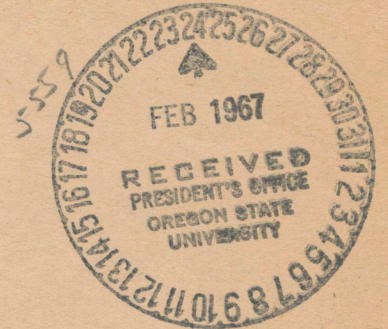


MATHEMATICS AT OREGON STATE UNIVERSITY

THE FIRST CENTURY: 1867-1967



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I. A SUMMARY PREVIEW.

§ 1. The liberal arts beginnings. In 1867-68, Corvallis College had just two Professors - one of Languages, the other of Mathematics - among its total faculty of four. (Two other teachers were responsible, respectively, for the Primary Department and Music.) The college's curriculum was typical of the mid-nineteenth century, when the Liberal Arts were no longer quite the classical Seven, but still bore their clear imprint. Indeed, the two Professorships almost exactly divided the Trivium (grammar, logic, rhetoric) from the Quadrivium (arithmetic, geometry, astronomy, music). But the Seven Arts that had been the essence of learning from Varro's time for over a millenium had undergone changes. Philosophy had entered Western higher learning in the early middle ages, as had theology; American society felt that the education of its clergy was of dominant importance; and some note had to be made of the great modern achievements in "Natural Philosophy" and its powerful new mathematical instrument - the Infinitesimal Calculus. (After all, Newton had by 1867 been enshrined at Westminster for 140 years.) All of these had left their marks on the 1867-68 curriculum

of Corvallis College. But of the newer sciences there was little: one term each of "Natural Philosophy", Chemistry and Botany.

§ 2. Designation as Oregon's land grant college. The next year's catalog announced Corvallis College's new Agricultural Course, which is first described a year later in the catalog of 1869-70. The first Morrill Act of 1862, and Corvallis College's designation in 1868 as Oregon's land grant college, began to shape the future. The growth of Agriculture and Engineering over the next few decades was to transform mathematical studies from their position as revered elements of the traditional higher learning into recognition as necessary tools for understanding science and technology. The subject matter did not change greatly, but clearly Mathematics was now taught chiefly to serve Engineering. This was to be its function until 1932, when major work was instituted at Corvallis with creation of the School of Science.

§ 3. The beginnings of specialization in Mathematics. From 1932 on, the service aspects of the Department's work continued to grow, so that now scarcely one of the University's schools is without a special mathematical requirement. Several graduate curricula either require or normally expect minors in mathematics (or statistics). But departmental major status meant a new emphasis on Mathematics as a primary area of study. The undergraduate major program was designed to train

students for high school teaching and for graduate study in Mathematics. The first master's degree in Mathematics was awarded in 1933; the first doctorate in 1948. In 1966, 81 baccalaureate degrees were awarded in Mathematics; 18 masters; 7 Ph.D.'s. With 382 undergraduate and 93 graduate majors, 3.8% of Oregon State's 12,600 students in Fall, 1966 were specializing in Mathematics. The total enrollment of 5,200 in Mathematics courses exceeded 40% of the entire student body.

§ 4. Breadth in both pure and applied mathematics. Those responsible for developing the mathematical program since 1932 have been deeply conscious of the need for strength in applied mathematics as well as in the classical areas of algebra, analysis and geometry-topology. Specialties which were most cultivated during the 1930's included analysis, statistics, mathematical physics, numerical methods, topology: research was carried on and advanced courses were begun. The war brought staff dispersal and the new task of teaching servicemen in the Army A.S.T.P. program. With the post war years, progress was resumed. The 30 Ph.D. mathematicians on the 1966-67 faculty are contributing to a very broad program of research and advanced instruction which includes such fields as matrix algebra, number theory, differential topology, analytical topology, convexity, differential equations, integral equations, fluid mechanics, mathematical geophysics, functional

analysis, probability, numerical analysis, nonlinear control theory, algorithmic theory, computer languages and systems, psychology of perception, automata, statistical mechanics, information theory, game theory - a long list, and still incomplete. A significant amount of research is supported by Federal funds. Such support has grown from one contract in 1952 of \$12,000 to 6 at a total of \$138,600 for 1966-67.

§ 5. Services. In addition to the heavy teaching mission of the Department, already referred to in § 3 above, and the consultation or research collaboration which some department members do with colleagues in other departments, faculty members also cooperate with the National Science Foundation in a Summer Institute for High School Teachers, a Summer Institute for Gifted High School Students, an In-Service Institute for High School Teachers, and an Academic Year Institute for High School Teachers of Science; and also with the JESSI Program (Junior Engineers and Scientists Summer Institute). These activities, the teaching of mathematics to prospective elementary and high school teachers, and visits to high schools and colleges of the Northwest are all part of the job of improving mathematical instruction.

6. The Mathematical Sciences. Statistics, which had grown up within Mathematics, branched off as a new department in 1956. A Ph.D. program has now been started, with cooperation of Mathematics in probability and other necessary course offerings. Thought is being given to the possible formation of a department of Computer Science, presently a strong element in Mathematics. Over the three years, 1963-1966, seven Ph.D.'s were earned in this new and important area, placing Oregon State's Mathematics Department among the top "Computer Science" graduate schools in the nation. (Quality may be judged from the fact that two 1966 Ph.D.'s now hold A.E.C. postdoctoral research fellowships at the Lawrence Radiation Laboratories, Livermore.) The Department's long interest in numerical methods and computing led to acquisition of a computer in 1957 (the first in an Oregon educational institution); this in turn led to interest and research in computer system design (with Electrical Engineering) and programing, and to the Computer Science program just mentioned. Computing activities are now gathered into a newly-established Computer Center, which serves the entire campus. Together with the Mathematics Department, Statistics and the Computer Center form a large and capable complex of "mathematical sciences".
7. Department chairmen since 1867. The designation of "chairman" or "head" does not appear in the early years, during which there was only one Professor. Whatever their titles, the persons in charge of Mathematics at Oregon State have been as follows:

- 1867(?)–1885(?): The Rev. Joseph Emery, A.M.; Professor of Mathematics.
- 1885(?)–1888(?): Olin J. Wimberley, A.M.; Professor of Mathematics and Tactics.
- 1888–1894: John D. Letcher, C.E., Col., U.S. Army; Professor of Mathematics and Engineering (also in charge of Military Science).
- 1894(?)–1908: George V. Skelton, C.E.; Professor of Mathematics and Engineering.
- 1908–1932: Charles L. Johnson, B.S.; Professor of Mathematics.
- 1932–1955: William Edmund Milne, Ph.D.; Head of Department (Professor).
- 1955–1956: Arvid T. Lonseth, Ph.D.; Acting Chairman (Professor).
- 1956–57: F. A. Gilfillan, Ph.D.; Acting Chairman (Professor and Dean).
- 1957–present: Arvid T. Lonseth, Ph.D.; Chairman (Professor).