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The May Meeting of the Indiana Section

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CONFERENCES FOR LECTURERS AT NSF 1959 SUMMER INSTITUTES IN MATHEMATICS

In March 1959, the National Science Foundation granted $58,000 to the MAA for the support of Conferences for Lecturers at 1959 Summer Institutes in Mathematics. President Allendoerfer had appointed a committee of the Association to organize these conferences, consisting of Professors E. G. Begle and G. B. Thomas, Chairman. Five regional conferences were held at the following places and times: Boston, April 11 and 12; Washington, D. C., April 18; Chicago, May 2 and 3; St. Louis, May 2; Palo Alto, May 2. A total of approximately 300 people attended these conferences.

The conferences were intended to improve the instruction in summer institutes through mutual discussions among instructors both experienced and inexperienced in institute operations, and to provide opportunity for exchange of information concerning the course content improvement activities of the Commission on Mathematics, the School Mathematics Study Group, the University of Illinois Mathematics Project, and the Association's Committee on the Undergraduate Program in Mathematics. At each of the five conferences were speakers representing each of these groups, a speaker with experience as an institute lecturer and a former participant in a summer institute.

It had been hoped that all lecturers at 1959 summer institutes in mathematics could be invited to one of the conferences. Because of the difficulty in securing this information in a brief time, invitations to the conferences were sent directly to the directors of summer institutes to transmit to the lecturers. This formula was used: in the case of an institute devoted solely to mathematics and intended for 50 or fewer participants, the director and one lecturer were invited. In the case of an institute directed solely to mathematics and involving more than 50 participants, the director and two lecturers were invited. For an institute involving mathematics in addition to other scientific subjects, one lecturer, in the field of mathematics, was invited. Since many of the directors had had experience in previous institutes, they were able to contribute much to the general discussion that took place at each conference.

Each of the organizations represented at the Conferences supplied printed or mimeographed material which could be used at a forthcoming summer institute. Each participant was given a summary of "Comments on NSF Summer Institutes," compiled by Professor Begle, which presented the reactions, experiences, and recommendations of lecturers at previous summer institutes.

A substantial number of the participants expressed appreciation to the Association and the National Science Foundation for arranging the conferences and commented that the conferences had been useful to them.

THE MAY MEETING OF THE INDIANA SECTION

The thirty-sixth annual spring meeting of the Indiana Section of the Mathematical Association of America was held Saturday, May 2, at Valparaiso University, Valparaiso, Indiana. Approximately 60 members attended. President G. N. Wollan of Purdue University, Chairman of the Section, presided at both the morning and afternoon sessions.

The following officers were elected: Chairman, Professor K. H. Carlson of Valparaiso University; Vice-Chairman, Professor M. E. Shanks of Purdue University; Secretary-Treasurer, Professor C. F. Brumfiel of Ball State Teachers College.

Professor Wollan reported upon the activity of the State School and College Committee. This committee is comprised of representatives of the Indiana Section of the Association and of the Indiana Council of Teachers of Mathematics. It represents a

cooperative endeavor on the part of high school and college teachers to study curriculum problems in mathematics in the elementary school, high school and college.

Professor Edwards, Chairman of the Committee on Awards, reported that one Association Medal had been awarded this year to a high school senior who exhibited high mathematical achievement in the Indiana Science Talent Search program.

The Annual High School Mathematics Contest, sponsored by the M.A.A. and the Society of Actuaries was discussed and it was agreed that the Indiana Section would continue to sponsor this test.

Professor Daniel Zelinsky of Northwestern University gave the invited hour address on "Tensor Products."

The following short papers were presented:

1. *Inverse functions vs. "converse" functions*, by Professor Joong Fang, Valparaiso University.

In general the mathematical inverse implies the identical in this sense, that if a function has an inverse, the latter is always able to undo whatever the former does. If "f" is considered an operator, "f^{-1}" is an inverse operator and $ff^{-1}(x) = f^{-1}f(x) = x$. The common practice in virtually all texts (*e.g., Universal Mathematics* I, pp. 243–4) to produce the inverse function f^{-1} of a function f merely by interchanging the variables of f is thus entirely unwarranted. A new term "converse function" is recommended for such a case.

2. *A comment on the algebra of sets*, by Professor Joong Fang, Valparaiso University.

The *identity* set (in the proper sense) whose conspicuous absence has been either ignored or unsuspected, reveals its absurdity through the equivocality in inverse set-operations.

3. *Matrices over rings in which finitely generated ideals are principal—a survey*, by Professor Melvin Henriksen, Purdue University.

4. *Some remarks concerning the teaching of the Hilbert system*, by Professor Philip Dwinger, Purdue University.

The program of a course on "classical geometries" is outlined. After a critical discussion of the Euclidean system a rigorous treatment of the Hilbert system is given. The axiom of Pasch is presented in a stronger form. Instead of the axioms of congruence, the axioms of geometric displacements (Euclidean transformations) are introduced. Several models of non-Euclidean geometries are discussed. Particular attention is paid to hyperbolic geometry.

5. *Comments on a Notre Dame undergraduate mathematics program*, by Professor N. B. Haaser, University of Notre Dame, introduced by the Secretary.

The purpose of the program is to present elementary analysis both as mathematics and as an instrument of science and to do this in the spirit and the light of contemporary mathematics.

6. *Minimal fundamental sequences of functions*, by Professor Casper Goffman, Purdue University, introduced by the Secretary.

In a separable, metric, topological vector space, a sequence $\{f_n\}$ is fundamental if its finite linear combinations are dense in the space. It is minimal, if no proper subsequence is fundamental. Talalyan has shown that, for the space F of all measurable functions on $[0, 1]$, every fundamental sequence $\{f_n\}$ remains fundamental after any finite number of terms are deleted. This implies $\{f_n\}$ is universal in the sense that there are constants $\{a_n\}$ such that if $S_n = \sum_{k=1}^{n} a_k f_k$, then for every $f \in F$, a subsequence of $\{S_n\}$ converges a.e. to f. These results are shown here to be almost immediate consequences of the fact that the dual of F is trivial.

CHARLES BRUMFIEL, *Secretary*

THE MAY MEETING OF THE UPPER NEW YORK STATE SECTION

The fifteenth annual meeting of the Upper New York State Section of the Mathematical Association of America was held at Hartwick College, Oneonta, New York, on May 9, 1959. The Chairman of the Section, Professor Caroline A. Lester of the New