

## NOTES

The Society for the Promotion of Engineering Education will hold its 48th Annual Meeting at the University of California in Berkeley, June 24 to June 28.

The Francoeur Prize of the French Academy of Sciences has been awarded to Professor Brelot of the University of Bordeaux for his work on harmonic functions.

The Petit D'Ormy Prize of the French Academy of Sciences has been awarded to Professor G. Valiron of the University of Paris for his work in mathematics.

Mr. C. E. Shannon, assistant in mathematics at the Massachusetts Institute of Technology, has been awarded the Alfred Noble Prize of \$500 by the American Institute of Electrical Engineers.

Professor J. L. Coolidge of Harvard University will retire on September 1, 1940, with the title Professor of Mathematics Emeritus and Master of Lowell House Emeritus. Professor Coolidge has been a member of the department of mathematics for forty years and master of Lowell House for ten years.

Professor Arnold Emch of the University of Illinois, whose retirement was announced on page 22 of the current volume of this Bulletin, has been given the title of professor emeritus.

The School of Mathematics of the Institute for Advanced Study is building up its own library in the fields of mathematics and theoretical physics. Any offers of secondhand books or sets of periodicals from private owners or of duplicates from libraries, addressed to the Librarian, Institute for Advanced Study, Princeton, N. J., will receive careful consideration.

The following ninety-nine doctorates, with mathematics or mathematical physics as a major subject, were conferred during 1939 in universities in the United States and Canada; the major subject is mathematics unless otherwise specified. The university, month in which the degree was conferred, minor subject (other than mathematics), and the title of the dissertation are given in each case if available.

H. W. Alexander, Princeton, June, *The rôle of the mean curvature in the immersion theory of surfaces.*

Warren Ambrose, Illinois, June, minor in astronomy, *Some properties of measurable stochastic processes.*

H. A. Arnold, California Institute of Technology, June, minor in physics, *The theory of operational equations and differential equations in Kantorovitch spaces.*

Margaret E. P. Baxter, Michigan, February, *On the geometry of the Dirac equations.*

Marjorie H. Beaty, Colorado, August, *On the complex roots of algebraic equations.*

Dorothy L. Bernstein, Brown, June, *The double Laplace integral.*

E. E. Betz, Pennsylvania, June, *Accessibility and separation by simple closed curves.*

C. J. Blackall, Cornell, September, *On volume integral invariants of non-holonomic dynamical systems.*

R. C. Blackwell, North Carolina, June, *Cubics having  $r$ -point contact with a plane curve.*

Augusto Bobonis, Chicago, December, *Differential systems with boundary conditions involving the characteristic parameter.*

Achille Capecelatro, Rensselaer Polytechnic Institute, June, minors in physics and engineering, *The complementary function of fractional integration.*

W. B. Caton, Yale, June, *A class of inequalities.*

C. L. Critchfield, George Washington, June, major in mathematical physics, *The theory of nuclear forces and their spin-dependence under the pair-emission hypothesis.*

A. W. Davis, Iowa State, July, minors in physics and mathematical physics, *Differentiable and continuity properties of solutions of certain partial differential equations of applied mathematics.*

M. M. Day, Brown, June, I. *Regularity of function-to-function transformations.* II. *Linear methods of summability.*

R. P. Dilworth, California Institute of Technology, June, minor in physics, *The structure and arithmetical theory of non-commutative residuated lattices.*

T. C. Doyle, Princeton, June, *Tensor decomposition: with applications to the contact and complex groups.*

P. L. Dressel, Michigan, June, *A study of statistical seminvariants and their estimates with particular emphasis on their relation to algebraic seminvariants.*

R. J. Dunholter, Cincinnati, June, *A sequence of factors which leaves a class of double Fourier series unchanged.*

J. J. Eachus, Illinois, June, minor in physics, *Regular solutions of non-linear q-difference systems.*

J. E. Eaton, Yale, June, *Associative multiplicative systems.*

R. A. Favila, California (Berkeley), May, *On the projective differential geometry of certain systems of linear homogeneous partial differential equations of the first order, with special application to stratifiable congruences.*

J. W. Foust, Michigan, February, major in education, *The construction of a standardized test in functional thinking.*

R. H. Fox, Princeton, June, *On the Lusternik Schnirelmann category.*

Cleota G. Fry, Purdue, June, minor in physics, *Asymptotic developments of certain integral functions.*

B. E. Gatewood, Wisconsin, October, *Thermal stresses in long cylindrical bodies.*

R. E. Greenwood, Jr., Princeton, June, *Hankel series.*

Harriet Griffin, New York, June, minor in physics, *The abelian quasi-group.*

Leon Gropper, New York, February, major in mathematical physics, *Quantum theory of the equation of state of a gas.*

G. L. Gross, Iowa State, July, minors in physics and mathematical physics, *Use of functionals in obtaining approximate solutions of linear operational equations.*

P. J. Hart, Iowa State, July, major in applied physics, minors in mathematics and mathematical physics, *The determination of elastic constants by Piezo-elastic methods.*

Morris Hendrickson, Ohio State, September, *Some properties of arbitrary functions.*

H. H. Howe, George Washington, February, major in mathematical physics, *The rotational Raman effect for the asymmetric-top molecule.*

S. A. Jennings, Toronto, June, *On the structure of the group-ring of a  $p$ -group over a modular field.*

R. N. Johanson, Chicago, June, *Ruled surfaces with intersecting generators.*

Laura L. Johnson, Colorado, June, *On the diophantine equation  $x(x+1) \cdots (x+n-1) = y^k$ .*

R. P. Johnson, Pittsburgh, June, *Conical roulettes.*

I. N. Kagno, Columbia, March, *Perfect subdivision of surfaces.*

Wilfred Kaplan, Harvard, June, *Regular curve-families filling the plane.*

Chosaburo Kato, Ohio State, December, *Configurations  $n_3$ .*

E. S. Kennedy, Lehigh, October, *Exponential analogues of Lambert series.*

J. M. Kingston, Toronto, June, *Special abstract groups.*

Fulton Koehler, Minnesota, June, minor in physics, *Systems of orthogonal polynomials on certain algebraic curves.*

C. F. Kossack, Michigan, June, *The existence of collectives in abstract space.*

K. S. Kunz, Cincinnati, June, major in mathematical physics, *On the classical theory of radiating electrons.*

A. W. Landers, Jr., Chicago, December, *Invariant multiple integrals in the calculus of variations.*

Mary K. Landers, Chicago, December, *The Hamilton-Jacobi theory for the problems of Bolza and Mayer.*

Yuan Lay, Michigan, June, *The imbedding of the skew part of a bilinear function in linear associative algebras.*

R. A. Leibler, Illinois, June, minor in astronomy, *Analytic theory of non-linear singular differential systems whose associated systems are of Fuchsian type.*

A. O. Lindstrum, Jr., Illinois, June, minor in physics, *Functions of a complex variable determined by their values on non dense sets.*

A. T. Lonseth, California (Berkeley), May, *The problem of Plateau in hyperbolic space.*

Samuel Lubkin, New York, June, minor in physics, *Stability of columns under periodically varying loads.*

W. C. McDaniel, Wisconsin, June, *The deflection of an orthotropic plate.*

W. G. McGavock, Duke, June, minor in education, *Annihilators of quadratic forms with applications to Pfaffian systems.*

Brockway McMillan, Massachusetts Institute of Technology, June, minor in physics, *The calculus of the discrete homogeneous chaos.*

Roy MacKay, Michigan, February, *Planarity of peano spaces in terms of homology bases.*

Bella Manel, New York, June, minor in physics, *Conformal mapping of multiply connected domains on the basis of Plateau's problem.*

J. C. Mark, Toronto, June, *On the modular representations of the group  $GLH(3, p)$ .*

W. H. Myers, Stanford, September, minor in physics, *The Sylow subgroups of odd order of the primitive simple linear groups in five variables.*

H. M. Nahikian, North Carolina, August, *Conditions that a matrix  $B$  be expressible as a polynomial in a set of partial idempotent and nilpotent elements of a matrix  $A$ , with applications to the solution of matrix equations.*

Sara L. Nelson, Cornell, June, *Cremona transformations belonging to a family of cubic curves.*

E. A. Nordhaus, Chicago, August, *The problem of Bolza for double integrals in the calculus of variations.*

Katharine E. O'Brien, Brown, June, *Some problems in interpolation by characteristic functions of linear differential systems of the fourth order.*

L. F. Ollmann, Michigan, June, *On joining finite subsets of planar Peano spaces by simple closed curves.*

H. V. Park, North Carolina, June, *Conditions on two singular matrices  $A$  and  $B$  such that  $AB$  and  $BA$  may have the same reduced characteristic function.*

R. S. Phillips, Michigan, June, *Integration in a convex linear topological space.*

Martha H. Plass, Massachusetts Institute of Technology, October, minor in physics, *Ruled surfaces in Euclidean four space*.

E. D. Rainville, Michigan, June, *Linear differential invariance under operators related to the Laplace transformation*.

Adrienne S. Rayl, Chicago, August, *Stability of permanent configurations in the problem of four bodies*.

P. V. Reichelderfer, Ohio State, June, *Some properties of continuous transformations in the plane*.

H. J. Riblet, Yale, June, *Algebraic differential fields*.

V. N. Robinson, Chicago, June, *Generalized intersector varieties*.

D. H. Rock, Iowa State, June, minors in physics and physical chemistry, *Finite strain analysis in elastic theory*.

Clarence Ross, Washington, August, *Periodic orbits for straight-line solutions of the  $n$ -body problem*.

Abraham Schwartz, Massachusetts Institute of Technology, June, minor in physics, *The Gauss-Codazzi-Ricci equations in Riemannian manifolds*.

H. M. Schwartz, Pennsylvania, June, *A study of a certain class of continued fractions*.

C. E. Sealander, Iowa, August, *An irregular third-order boundary value problem and the associated series, II*.

C. L. Seebeck, Jr., North Carolina, June, *Vectors associated with a curve in a Riemann  $n$ -space*.

C. B. Smith, Wisconsin, June, minor in physics, *Thermo-elastic behavior of composite plates*.

C. V. L. Smith, Harvard, June, *The fractional derivative of a Laplace integral*.

W. S. Snyder, Ohio State, June, *On functions of squares*.

D. E. South, Michigan, February, *The characteristics of correlation surfaces which are the sum of two normal components*.

K. H. Stahl, Pittsburgh, June, *A note on plane collineations*.

Ellen C. Stokes, Chicago, December, *Applications of the covariant derivative of Cartan in the calculus of variations*.

R. E. Street, Harvard, February, *Non-linear equations of electrodynamics based upon Birkhoff's postulates.*

W. C. Strodt, Columbia, May, *Irreducible systems of algebraic differential equations.*

B. J. Tepletsky, Ohio State, June, *Stability and periodicity of solutions of Mathieu's equation.*

G. R. Thurman, Missouri, August, *The geometry of spheroidal spaces and properties of pseudo-spheroidal sets.*

L. W. Tordella, Illinois, June, minor in philosophy, *A classification of groups of order  $P^6$ ,  $P$  an odd prime.*

Esther M. Torrance, Brown, June, *Superposition on monotonic functions.*

H. C. Trimble, Wisconsin, March, *On the ring of matrices commutative with a given matrix.*

J. W. Tukey, Princeton, June, *On denumerability in topology.*

E. P. Vance, Michigan, June, *Generalizations of non-alternating and non-separating transformations.*

Mary C. Varnhorn, Catholic University, June, minors in education and philosophy, *Some properties of the quartic function of one variable.*

R. K. Wakerling, California (Berkeley), May, *On the loci of the  $(k+1)$ -secant  $k$ -spaces of a curve in  $r$ -space.*

A. D. Wallace, Virginia, June, *On interior and related transformations.*

J. A. Ward, Wisconsin, October, *A theory of analytic function and linear associative algebras.*

F. J. Weyl, Princeton, June, *Analytic curves.*

G. A. Whetstone, Washington, August, minor in mechanical engineering, *Some differential systems which remain passive under transformation.*

The following doctorate was conferred in 1938, but was not included in the list in the preceding volume of this Bulletin (vol. 45, pp. 350–353).

B. J. Topel, Notre Dame, August, *A set of postulates for the ratio of division.*

Dr. Marjorie Heckel Beaty has been appointed to an assistant professorship at the University of South Dakota.

Associate Professor H. R. Brahana of the University of Illinois has been promoted to a professorship.

Professor C. T. Bumer of Kenyon College has been appointed Peabody Professor of Mathematics.

Dr. Josephine H. Chanler of the University of Illinois has been made an associate in mathematics.

Professor Abraham Cohen of Johns Hopkins University has retired.

Dr. Myrtle Collier has been made chairman of the department of mathematics at Immaculate Heart College, Los Angeles.

Mr. J. L. Kelley of the University of Virginia has been appointed to an assistant professorship at the University of Notre Dame.

Rev. J. H. Kenna of the University of Notre Dame has been promoted to an assistant professorship.

Assistant Professor D. H. Lehmer of Lehigh University has been appointed to an assistant professorship at the University of California at Berkeley.

Dr. Norman Levinson of Massachusetts Institute of Technology has been promoted to an assistant professorship.

Dr. Hans Lewy of the University of California at Berkeley has been promoted to an associate professorship.

Dr. A. N. Milgram of the University of Notre Dame has been promoted to an assistant professorship.

Professor John von Neumann of the Institute for Advanced Study has been appointed to a professorship in mathematics at the University of Washington for the first term of the 1940 summer quarter.

Professor J. O. Patterson of St. Charles Seminary, Overbrook, Philadelphia, has retired.

Dr. P. M. Pepper of the University of Notre Dame has been promoted to an assistant professorship.

Professor L. J. Rouse of the University of Michigan is on leave of absence this semester.

Professor J. D. Tamarkin of Brown University and Professor Emil



Artin of the University of Indiana will lecture during the 1940 summer quarter at Stanford University.

Professor J. H. Taylor of George Washington University is on leave of absence this term.

Associate Professor W. J. Trjitzinsky of the University of Illinois has been promoted to a professorship.

Associate Professor C. C. Wylie of the University of Iowa has been promoted to a professorship of astronomy.

The following appointments to instructorships are announced: Allegheny College, Meadville, Pennsylvania: Mr. J. A. Joseph; Brooklyn College: Dr. Moses Richardson; Catholic University of America: Dr. J. F. Daly; Johns Hopkins University: Dr. C. H. Dowker; Massachusetts Institute of Technology: Dr. Eric Reissner, Dr. D. C. Spencer; University of Notre Dame: Dr. C. V. Robinson; Purdue University: Mr. R. C. Davis; University of Virginia: Mr. P. A. White; University of Washington: Dr. H. S. Zuckerman; Woodrow Wilson Junior College, Chicago: Dr. Bernard Friedman.

Professor L. Hopf of the University of Aachen died December 21, 1939.

The death of Dr. Johannes Tropfke of Berlin on November 10, 1939, is reported.

Professor Emeritus U. S. Hanna of Indiana University died on February 18, 1940, at the age of seventy-five years. He had been a member of the Society for thirty-two years.

Professor A. W. Smith of Colgate University died on February 11, 1940, at the age of sixty-three years. He had been a member of the Society since 1905.