



COMMENCEMENT 1964
MICHIGAN STATE UNIVERSITY



COMMENCEMENT 1964

Friday, December 11

University Auditorium, East Lansing

ACADEMIC COSTUME

The pageantry and color at commencement exercises reveal a record of academic achievement of the various individuals taking part in the exercises. The following brief description is given that the audience might more readily interpret such achievement.

In 1895, the Intercollegiate Commission, a group of leading American educators, met at Columbia University to draft a code which would serve to regulate the design of gowns and hoods indicating the various degrees as well as the colors to indicate the various faculties. This code has been adopted by most of the colleges and universities in America and its use has made identification of scholastic honors an immediate activity.

Three types of gowns are indicated by the code. Those worn by the bachelors are made of black worsted material and have long, pointed sleeves. Those worn by masters may be made either of black silk or black wool and have long, closed sleeves with the arc of a circle near the bottom. The arm goes through a slit, giving the appearance of short sleeves for the master's gown. Doctor's gowns are made of black silk and are faced with velvet. The sleeves are full, round and open with three bars of velvet on each sleeve. The velvet facing of bars on the sleeves may be black or the same color as the binding of the hood.

Hoods are made of material identical with the gown and are lined in the official academic color of the institution conferring the degree. If the institution has more than one color, the chevron is used to introduce the second color. Colored velvet or velveteen binds the hoods and indicates the department or faculty to which the degree pertains.

Historical associations of color have been continued to signify the various faculties. Art and letters can be recognized by the white, taken from the traditional white fur trimming of the Oxford and Cambridge Bachelor of Arts hoods. Red, long traditional of the church, indicates theology. The royal purple of the King's court signifies law. The green of medicinal herbs immediately identifies a medical degree. Philosophy is signified by the color of wisdom and truth, blue. Because through research untold wealth has been released to the world, science is identified by golden yellow. Oxford pink indicates music and russet brown, the color of dress worn by ancient English foresters, indicates forestry.

The color of the velvet of the hood is distinctive of the subject to which the degree pertains. For example, the trimming for the degree of Master of Science in Agriculture should be maize, representing agriculture, rather than golden yellow, representing science.

At Michigan State University, it is customary to identify the bachelors graduating from the different departments of study by tassels of the official department color as established by the Intercollegiate Code.

COLLEGE OF AGRICULTURE . . .	<i>Maize</i>	COLLEGE OF EDUCATION .	<i>Light Blue</i>
Forest Products,		COLLEGE OF ENGINEERING . .	<i>Orange</i>
Forestry, Packaging	<i>Russet</i>	COLLEGE OF	
COLLEGE OF ARTS AND		HOME ECONOMICS	<i>Maroon</i>
LETTERS	<i>White</i>	COLLEGE OF NATURAL	
Music	<i>Pink</i>	SCIENCE	<i>Golden Yellow</i>
Philosophy	<i>Navy Blue</i>	Nursing	<i>Apricot</i>
COLLEGE OF BUSINESS	<i>Drab</i>	COLLEGE OF	
COLLEGE OF		SOCIAL SCIENCE	<i>Citron</i>
COMMUNICATION ARTS . .	<i>Royal Blue</i>	Economics	<i>Copper</i>
Journalism	<i>Crimson</i>	COLLEGE OF	
Speech	<i>Silver Gray</i>	VETERINARY MEDICINE . .	<i>Dark Gray</i>

ORDER OF CEREMONIES

PROCESSIONAL

THE SPIRIT OF PAGEANTRY — *Fletcher*

Michigan State University Band, Professor LEONARD FALCONE, *Director*

AMERICA — *Smith*

My country, 'tis of thee,
Sweet land of liberty,
Of thee I sing:
Land where my fathers died,
Land of the pilgrims' pride,
From ev'ry mountainside
Let freedom ring!

INVOCATION

THE REVEREND WILFRED G. SAWYIER

First Presbyterian Church, Ionia

ADDRESS

THE HONORABLE PHILIP A. HART, A.B., J.D.

United States Senator from Michigan

SPECIAL MUSIC

TOCCATA AND FUGUE IN D MINOR — *Bach*

CONFERRING OF DEGREES

JOHN A. HANNAH, D.Agr., LL.D., HH.D., L.H.D., D.Sc.

President, Michigan State University

ALMA MATER — *Traynor*

M.S.U., we love thy shadows
When twilight silence falls,
Flushing deep and softly paling
O'er ivy-covered halls.
Beneath the pines we'll gather
To give our faith so true,
Sing our love for Alma Mater
And thy praises, M.S.U.

When from these scenes we wander
And twilight shadows fade,
Our mem'ry still will linger
Where light and shadows played.
In the evening oft we'll gather
And pledge our faith anew,
Sing our love for Alma Mater
And thy praises, M.S.U.

BENEDICTION

THE REVEREND MR. SAWYIER

RECESSIONAL

TRUMPET TUNE — *Purcell*

The escorts for the procession are members of Mortar Board, the honor society for senior women.

The audience is requested to remain seated while those in the procession are entering and leaving the auditorium.

BOARD OF TRUSTEES

Michigan State University operates under the jurisdiction of a constitutional body known as the Board of Trustees. The eight elected members serve eight-year terms. Two are elected biennially from the state at large.

The President of the University is appointed by the Board and is by constitutional provision the presiding member of the body.

The Board likewise appoints a Secretary and a Treasurer.

The Board has general supervision of the University and the control and direction of all expenditures of University funds.

THE HONORABLE CONNOR D. SMITH, <i>Chairman</i>	<i>Pinconning</i>
THE HONORABLE C. ALLEN HARLAN	<i>Detroit</i>
THE HONORABLE WARREN M. HUFF	<i>Plymouth</i>
THE HONORABLE FRANK MERRIMAN	<i>Deckerville</i>
THE HONORABLE STEPHEN S. NISBET	<i>Fremont</i>
THE HONORABLE DON STEVENS	<i>Okemos</i>
THE HONORABLE PAUL D. BAGWELL	<i>Detroit</i>
THE HONORABLE JOHN S. PINGEL	<i>Grosse Pointe</i>

JOHN A. HANNAH, <i>Ex Officio, President</i>	<i>East Lansing</i>
JACK BRESLIN, <i>Secretary</i>	<i>East Lansing</i>
PHILIP J. MAY, <i>Treasurer</i>	<i>East Lansing</i>

MICHIGAN STATE UNIVERSITY

Michigan State University, one of the leading land-grant universities and the first agricultural college in America, strives for excellence in affording liberal and practical education for its students in a broad range of human endeavors.

MSU also serves people of the state, nation and world through its numerous research, extension and international programs.

Now in its 110th year, Michigan State has grown from three buildings and six faculty members to one of the ten largest universities in the nation. It has approximately 2,500 staff members engaged in teaching, research and public service, 429 buildings, and 4,900 acres of land, including 1,440 acres in the campus and housing area and 420 more in planned development.

Founded in 1855 to educate youth for the major occupation of that day — farming — MSU has broadened its offerings to meet the educational needs of young people today. Michigan State now has the School for Advanced Graduate Studies and 12 colleges — Agriculture, Arts and Letters, Business, Communication Arts, Education, Engineering, Home Economics, Human Medicine, Natural Science, Social Science, Veterinary Medicine and the University College — which offer basic courses for all freshmen and sophomores. Nearly 200 areas of specialization are available to undergraduates; approximately 300 are offered for graduate students.

The Honors College, which enables superior students to waive normal graduation requirements and undertake individual programs, attracts many of the nation's finest young scholars. The Merit Scholarship Program, of which Michigan State University is a prominent sponsor, enrolled 199 Merit Scholars in this year's freshman class. This figure represents approximately 12 per cent of the nation's total of this unusually select group.

One of the newest of many innovations in higher education made by Michigan State University is its coeducational-academic residence halls. Incorporation of classrooms and faculty offices with living, dining and recreational facilities has given these giant new dormitories a stimulating academic environment. Six of these residence halls are now occupied and one more is under construction. The academic-coeducational arrangement has worked so well that it is being carried one step further with four of the seven new residence-halls reserved primarily for upper classmen. Each of these halls is the center of curricular and noncurricular activities for a college, creating a "college within a college" atmosphere.

Today, more than 31,000 students attend the University at East Lansing. About 80 per cent are from Michigan, representing every section of the state. Students also come from every state in the nation and 84 foreign countries.

Looking to the future, Michigan State University is preparing for increasingly larger enrollments as the great number of children born after World War II reach college age. To meet this challenge, MSU is revising curriculums and developing new teaching techniques through its Educational Development Project.

MICHIGAN STATE UNIVERSITY

(continued)

In the land-grant tradition it pioneered, Michigan State University is concerned with research and service as well as teaching.

All colleges and the Agricultural Experiment Station are engaged in a wide range of research. Some 1,700 individual projects are in progress. The University's research tools include the giant new Control Data 3600 Computer and a 50-million-volt cyclotron, which will begin operations this year. Facilities to be completed in 1964 include a \$6 million chemistry building, a \$5.2 million biochemistry laboratory, and an \$862,000 psychology research building. A \$4.7 million veterinary medicine building will be finished in 1965.

Through an agreement with the Atomic Energy Commission, MSU will become a national center for basic research on plants and their reactions to radiation. Involved is construction of a \$2 million building, a staff of about 90 persons and an annual budget of about \$1 million when the program is fully underway.

Benefits of the University are brought to every county in Michigan by the Cooperative Extension Service and the Continuing Education Service. Their programs, on and off campus, provide a wide range of technical information and formal course work for hundreds of thousands of Michigan citizens. The Kellogg Center for Continuing Education, one of the finest conference centers in the nation, annually hosts nearly 50,000 adults who come to the campus for some 600 conferences and other educational meetings.

Michigan State University's land-grant concept of service is international. Supported by grants from the federal government and private foundations, Michigan State University maintains research and technical assistance projects at 15 educational institutions in Asia, Africa and Latin America. International projects have given many faculty members overseas experience, adding a new dimension to their teaching.

With more than a century of educational achievement behind it, Michigan State University continues to apply its academic and physical resources to the problems of today and the challenges of the future.

THE CANDIDATES FOR DEGREES

1964 CLASS ROSTER

This includes the names of candidates for degrees for December, 1964, including Summer Doctoral Candidates.

Candidates are listed by School for Advanced Graduate Study and by colleges. The colleges are arranged in the order in which they were established.

SCHOOL FOR ADVANCED GRADUATE STUDIES

MILTON E. MUELDER, DEAN

CANDIDATES FOR THE DOCTORAL DEGREES

PAOLO AMMASSARI, Ph.D.

B.A., University of Florence.
Sociology & Anthropology. Major Professor: W. H. Form, Professor.
Thesis: Worker Satisfaction and Occupational Life, A Study of the Automobile Worker in Italy.

JERRY MAYNARD ANDERSON, Ph.D.

B.S., Wisconsin State College; M.S., Northern Illinois University.
Speech. Major Professor: K. G. Hance, Professor.
Thesis: Paul H. Douglas: Insurgent Senate Spokesman for Humane Causes, 1949-1963.

JORG A. AUGUSTIN, Ph.D.

B.S., Swiss Federal Institute of Technology; M.S., University of Illinois.
Food Science. Major Professor: I. J. Pflug, Professor.
Thesis: Recovery Patterns of Spores of Putrefactive Anaerobe No. 3679 In Various Subculture Media Following Moist and Dry Heat Treatment.

DIPAK KUMAR BAZAJ, Ph.D.

B.S., Banaras Hindu University; M.S., Indian Institute of Science.
Mechanical Engineering. Major Professor: G. H. Martin, Associate Professor.
Thesis: Torsion of Axially Non-Uniform Circular Shafts-Iterative Finite Difference Solutions.

WILLIAM GEORGE BICKERT, Ph.D.

B.S., M.S., North Dakota State University.
Agricultural Engineering. Major Professor: F. H. Buelow, Associate Professor.
Thesis: Some Aspects of Kinetic Friction of Grains on Surfaces.

DUANE LEE BIDLACK, Ph.D.

B.S., Tri-State College.
Chemical Engineering. Major Professor: D. K. Anderson, Associate Professor.
Thesis: A Study of Diffusion of Binary Non-Ideal Nonassociating Liquid Solutions.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

- JOSEPH MARION BIEDENBACH, Ph.D. B.S., M.A. (Education), University of Illinois; M. A. (Physics), University of Michigan.
Education. Major Professor: H. J. Dillion, Professor.
Thesis: College Achievement and Industrial Success.
- CLARENCE EUGENE BODWELL, Ph.D. B.S., Oklahoma State University; M.S., Cambridge University.
Food Science. Major Professor: A. M. Pearson, Professor.
Thesis: Chemical and Histochemical Observations on *L. Dorsi* Muscle from Beef and Pork.
- YEN FU BOW, Ph.D. B.S., National University of Chekiang; M.S., Michigan State University.
Physics. Major Professor: E. A. Hiedemann, Professor.
Thesis: Propagation of Plane Compressional Waves of Finite Amplitude In Real Fluids (A Theoretical Approach By the Method of Implicit Functions).
- ROBERT LESTER BRADLEY, JR., Ph.D. B.S., University of Massachusetts; M.S., Michigan State University.
Food Science. Major Professor: C. M. Stine, Associate Professor.
Thesis: Spray-Drying of Natural Cheese.
- LOUISE BURNETTE, Ph.D. B.S., University of North Carolina; M.S., Cornell University.
Education. Major Professor: M. W. Vossbrink, Associate Professor.
Thesis: An Exploratory Study in Adjusting Learning Experiences of College Freshmen in a Beginning Foods and Nutrition Course to Individual Differences in Ability, Achievement, Experience and Interest.
- AUGUSTUS FEWEH CAINE, Ph.D. B.A., University of Liberia; M.A., Northwestern University.
Sociology & Anthropology. Major Professor: C. C. Hughes, Professor.
Thesis: Patterns of Negro Protest: A Structural-Functional Analysis.
- ELWIN F. CAMMACK, Ed.D. B.S., Ricks College; M.Ed., Brigham Young University.
Education. Major Professor: P. L. Dressel, Professor.
Thesis: A Study of Factors Related to Mobility and Faculty Productivity and Achievement at Michigan State University: A Follow-up Study.
- HOY FRED CARMAN, Ph.D. B.S., M.S., Oregon State University.
Agricultural Economics. Major Professor: H. M. Riley, Professor.
Thesis: Cost-Volume Relationship For Packing Apples in Michigan.
- EDWIN DAVID CARPENTER, JR., Ph.D. B.S., Washington State University; M.S., Michigan State University.
Horticulture. Major Professor: D. P. Watson, Professor.
Thesis: A Monograph: Morphology of Flower Primordia of Selected Woody Plants.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES — Continued

- STEPHEN STEWART CASTLE, Ph.D. A.B., Hillsdale College; M.B.A., University of Michigan.
Business Administration. Major Professor: W. J. E. Crissy, Professor.
Thesis: An Analysis of Research and Development Practices and Prospects
in the Pharmaceutical Industry.
- JACK A. CHAMBERS, Ph.D. A.B., University of Miami; M.A., University of Cincinnati.
Psychology. Major Professor: C. F. Wrigley, Professor.
Thesis: Relating Personality and Biographical Factors to Scientific
Creativity.
- BRUCE JEROME COHEN, Ph.D. B.A., M.A., Michigan State University.
Social Science. Major Professor: O. C. Smucker, Professor.
Thesis: Differential Correctional Treatment Programs and Modification
of Self-Image.
- BRENDAN GERALD COLEMAN, Ph.D. B.S., M.S., Mankato State College.
Education. Major Professor: P. G. Haines, Professor.
Thesis: The Effects of a Tape-Laboratory Instructional Approach Upon
Achievement in Beginning Collegiate Shorthand Classes.
- BURTON ALBERT DEMING, Ph.D. B.S., Ed.M., M.A., University of Oklahoma.
Psychology. Major Professor: J. R. Hurley, Associate Professor.
Thesis: A Study of the Interaction Between Parental Role and Parental
Attitude and Its Relationship with Behavior Manifestations in Preadolescent
Sons.
- DANTE B. DEPADUA, Ph.D. B.S., University of Philippines; M.S., Louisiana State University.
Agricultural Engineering. Major Professor: C. W. Hall, Professor.
Thesis: High Moisture Storage of Rough Rice by Control of Environmental
Gases.
- STEVEN E. DEUTSCH, Ph.D. A.B., Oberlin College; M.A., Michigan State University.
Sociology. Major Professor: W. H. Form, Professor.
Thesis: Skill Level, Social Involvements and Ideology: A Study of Auto-
mobile Workers.
- ROBERT DOLPHIN, JR., D.B.A. B.S., M.B.A., Indiana University.
Business Administration. Major Professor: R. W. Johnson, Professor.
Thesis: An Analysis of Economic and Personal Factors Leading to Con-
sumer Bankruptcy.
- MILDRED JERLINE DOSSETT, Ph.D. B.S., Murray State College; M.A., George Peabody College.
Education. Major Professor: C. C. Collier, Professor.
Thesis: An Analysis of the Effectiveness of the Workshop as an In-
service Means for Improving Mathematical Understandings of Elementary
School Teachers.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

- GEORGE DOWELL DOWNING, D.B.A. B.S., Iowa State College.
Business Administration. Major Professor: W. L. Warner, Professor.
Thesis: The Process of Change in the Social System of a Large, Complex Corporation.
- CHARLES EDWARD ELSON, Ph.D. B.S., M.S., Iowa State University.
Food Science. Major Professor: L. J. Bratzler, Professor.
Thesis: Effects of the Structural Arrangement of Dietary Triglycerides on the Lipid Composition of Rat Tissues.
- JOACHIM GUSTAV ELTERICH, Ph.D. B.S., University of Bonn; M.S., University of Kentucky.
Agricultural Economics. Major Professor: G. L. Johnson, Professor.
Thesis: Labor Use of Michigan Agriculture, 1959, with Projections for 1970-75.
- ALBERT ROLAND ELWELL, Ph.D. B.A., University of Maine; M.A., Michigan State University.
Education. Major Professor: R. C. Bernard, Professor.
Thesis: Attitude Change As A Function of Differential Student Teaching Placement.
- PAUL JOSEPH FELLERS, Ph.D. B.S., University of Massachusetts; M.S., Virginia Polytechnic Institute.
Food Science. Major Professor: I. J. Pflug, Professor.
Thesis: The Effect of Several Factors on Whiteness of Cucumber Pickle Tissue.
- JOHN SCOTT FLEMING, Ph.D. B.S., Pennsylvania State University.
Chemistry. Major Professor: H. Hart, Professor.
Thesis: PART I: Dipositive Carbonium Ions. PART II: Aromatic Acylium Ions.
- GORDON A. FLOOD, Ph.D. B.M.E., M.M., University of Nebraska.
Music. Major Professor: W. R. Sur, Professor.
Thesis: Music and The Academically Talented Student in Selected American Colleges and Universities.
- STUART HENRY GILBREATH, Ph.D. A.B., Pacific Lutheran; B.D., Pacific Lutheran Theological Seminary.
Education. Major Professor: W. W. Farquhar, Professor.
Thesis: The Effects of Structured and Unstructured Group Counseling on Certain Personality Dimensions of Male College Students Who Underachieve.
- FRED MARTIN GRUEN, Ph.D. B.S., The City College of New York; M.S., Illinois Institute of Technology.
Chemistry. Major Professor: R. D. Schuetz, Professor.
Thesis: Synthesis and Study of Decomposition Rates of Some Bis-(Thenoyl)-Peroxides.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

RANDALL P. HARRISON, Ph.D.

B.S., University of Wisconsin.
Communication. Major Professor: M. S. MacLean, Professor.
Thesis: Pictic Analysis: Toward a Vocabulary and Syntax for the Pictorial Code, with Research on Facial Communication.

CHARLES F. HESS, Ph.D.

B.A., Michigan State University; M.S., University of Wisconsin.
Geography. Major Professor: L. M. Sommers, Professor.
Thesis: Selected Spatial Impacts of Consumer Behavior in the Retail Service Area of Greater Aalborg, Denmark.

WILLIAM FRANCIS HILL, Ph.D.

B.S., M.S., Ohio State University.
Microbiology & Public Health. Major Professor: W. N. Mack, Professor.
Thesis: Latex Agglutination of Poliovirus Infected and Uninfected Tissue Culture Fluids.

JAY MELVIN HUGHES, Ph.D.

B.A., University of Colorado; M.F., Colorado State University.
Forestry. Major Professor: L. M. James, Professor.
Thesis: Wilderness Land Allocation in a Multiple-use Forest Management Framework in the Pacific Northwest.

JOSEPH E. HUGUELET, Ph.D.

B.S., Michigan State University.
Botany & Plant Pathology. Major Professor: W. J. Hooker, Professor.
Thesis: Factors Influencing Local Lesion Formation of Potato Virus X in Leaves of *Gomphrena globosa* L.

WILLIAM LEWIS HUSK, Ed.D.

B.A., West Virginia University; M.A., Michigan State University.
Education. Major Professor: C. A. Blackman, Associate Professor.
Thesis: An Exploratory Study of Possible Relationships Between the Educational and Professional Backgrounds of School Superintendents and Their Views of Instructional Improvement.

CHARLES C. HUXSOLL, Ph.D.

B.S., M.S., Purdue University.
Agricultural Engineering. Major Professor: C. W. Hall, Professor.
Thesis: Some Effects of Sonics on the Drying of Cereal Grains.

SITARAM S. JASWAL, Ph.D.

B.S., M.S., Punjab University.
Physics. Major Professor: D. J. Montgomery, Professor.
Thesis: Lattice Dynamics of Perfect and Imperfect Crystals of NaCl Structure.

BOB FRANKLIN JONES, Ph.D.

B.S., M.S., Kansas State University.
Agricultural Economics. Major Professor: G. L. Johnson, Professor.
Thesis: Farm-Nonfarm Labor Flows, 1917-62, with Emphasis on Recent Manpower and Credit Programs.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

- MADHUSUDAN L. KAKADE, Ph.D. B.S., M.S., University of Poona (India).
Biochemistry. Major Professor: R. J. Evans, Professor.
Thesis: Growth Inhibition of Rats Fed Raw Navy Beans.
- DONALD JOSEPH KLEIN, D.B.A. B.S., Rockhurst College; M.B.A., University of Detroit.
Business Administration. Major Professor: S. B. Mead, Professor.
Thesis: The Odd-Lot Stock Trading Theory.
- WILLIAM RICHARD KLEIN, Ph.D. A.B., Central Michigan University; M.S., Michigan State University.
Physics. Major Professor: E. A. Hiedemann, Professor.
Thesis: A General Treatment of Fraunhofer Light Diffraction by Ultrasonic Gratings.
- JAMES BOLTON LEMERT, Ph.D. A.B., M.J., University of California.
Communication. Major Professor: E. P. Bettinghaus, Associate Professor.
Thesis: Status Conferral: The Modification of Source Credibility by the Act of Press Coverage.
- RICHARD JAY LEWIS, D.B.A. B.S., M.B.A., Miami University.
Business Administration. Major Professor: E. W. Smykay, Professor.
Thesis: A Business Logistics Information and Accounting System for Marketing Analysis.
- KUANG M. LIN, Ph.D. B.S., National Taiwan University; M.C.E., Alabama Polytechnic Institute.
Applied Mechanics. Major Professor: G. E. Mase, Associate Professor.
Thesis: Transient Two-phase Flow Through Porous Media.
- CHARLES H. LONG, Ph.D. B.S., Arkansas State College.
Animal Husbandry. Major Professor: D. E. Ullrey, Associate Professor.
Thesis: Factors which Influence Gastrointestinal Absorption in the Immediate Post-Natal Period.
- CALVIN M. LOVE, Ph.D. B.S., Illinois Institute of Technology.
Chemistry. Major Professor: C. H. Brubaker, Professor.
Thesis: The Effect of Tartaric Acid on the Kinetics of the Oxidation of Uranium (IV) by Thallium (III) in Aqueous Perchlorate Media.
- WAYNE R. MAES, Ph.D. Ph.B., Owosso College; M.A., Michigan State University.
Education. Major Professor: G. A. Miller, Associate Professor.
Thesis: Early Identification of Emotionally Disturbed Children.
- VIDYADHAR MANDREKAR, Ph.D. B.A., Eiphiston College (India).
Statistics. Major Professor: G. Kallianpur, Professor.
Thesis: Multiplicity and Representation Theory of Purely Non-deterministic Stochastic Processes and Its Applications.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

- DESMOND DEMPSTER MARTIN, D.B.A. B.A., Michigan State University; M.S., Florida State University.
Business Administration. Major Professor: W. L. Warner, Professor.
Thesis: The American Trade and Business Association: A Study of Its Growth, Structure, and Functions in the Emergent American Society.
- VISHWA NATH PRASAD MATHUR, Ph.D. B.S., Agra University (India), M.S., Aligarh University (India).
Forest Products. Major Professor: E. A. Behr, Associate Professor.
Thesis: A Colorimetric Procedure for the Determination of Arsenic, Chromium, and Copper in Wood Treated with Water-borne Preservatives.
- JAMES L. MAYFIELD, Ph.D. B.A., University of Omaha; M.A., Michigan State University.
Speech. Major Professor: G. L. Thomas, Professor.
Thesis: An Analysis of Expectations for the Responsibility Concerning Topic Selection of Protestant Ministers as Preachers.
- REGINALD GEORGE NASH, Ph.D. B.A., William Penn College; M.S., University of Iowa.
Zoology. Major Professor: T. W. Porter, Professor.
Thesis: Immunodiffusion Studies with *Ascaris suum* Goeze, 1782 and *Toxocara canis* (Werner), 1782.
- ROBERT K. ORDWAY, Ph.D. A.B., Phillips University; A.M., Butler University; B.D., Garrett Biblical Institute.
Sociology & Anthropology. Major Professor: W. E. Freeman, Professor.
Thesis: Church and Community Relationships: A Study of the Influence of Community and Organizational Variables Affecting Church Relocation in Lansing, Michigan.
- DONALD RICHARD ORTNER, Ph.D. B.A., (Languages), Northwestern College; B Mus. (Music), Illinois Wesleyan University; M.A., Eastern Michigan College.
Education. Major Professor: B. Stefflre, Professor.
Thesis: A Denominational Guidance Program – A Theological Evaluation of a Proposed Psychological Program – with Special Reference to the Lutheran Churches.
- CARL HENRY OSTERBROCK, Ph.D. B.S.E.E., University of Cincinnati; M.S.E.E., University of Illinois.
Electrical Engineering. Major Professor: H. E. Koenig, Professor.
Thesis: Distributed Parameter System Models and Discrete Approximations.
- SHARAD CHINTAMAN PHATAK, Ph.D. B.S., Agra University; M.S., Indian Agricultural Research Institute.
Horticulture. Major Professor: S. H. Wittwer, Professor.
Thesis: Origin, Nature and Modification of the Flowering Stimulus in the Tomato (*Lycopersicum esculentum*).
- ALLEN THURMAN PHILLIPS, Ph.D. B.S., M.S., Louisiana State University.
Biochemistry. Major Professor: W. A. Wood, Professor.
Thesis: The Mechanism of Threonine Dehydrase of *Escherichia coli*.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

- MARTHA AMANDA PLONK, Ph.D. B.S., University of North Carolina; M.S., Ohio State University.
Home Management. Major Professor: J. D. Schlater, Associate Professor.
Thesis: Decision Class and Linkage in One Central-Satellite Decision Complex.
- DOROTHY Z. PRICE, Ph.D. B.S., M.S., Pennsylvania State University.
Home Management. Major Professor: E. Everett, Associate Professor.
Thesis: Derivation of Hypotheses Regarding Family Economic Behavior.
- JOHN F. PRICE, Ph.D. B.S., M.A., Pennsylvania State University.
Speech. Major Professor: K. G. Hance, Professor.
Thesis: The Legislative History of Educational Television Facilities Proposals in the United States Congress – A Rhetorical-Critical Study.
- ALBERT PUGH, Ed.D. B.A., Goddard College; M.A., Michigan State University.
Education. Major Professor: C. C. Collier, Professor.
Thesis: A Study of Student Teaching Programs in England.
- CHARLES MCWILLIAMS RANDALL, Ph.D. B.A., Union College; M.S., Michigan State University.
Physics. Major Professor: D. J. Montgomery, Professor.
Thesis: Applicability of the Lorentz-Oscillator Model to Infrared Absorption in Lithium Fluoride.
- JANE ELLEN RANNEY, Ph.D. B.A., M.A., Michigan State University.
Psychology. Major Professor: S. H. Bartley, Professor.
Thesis: Perceptions of Subfusional Photoc Intermittencies Under Various Intensities and Pulse-to-cycle fractions.
- ROBERT H. RAYMOND, Ph.D. B.S., M.A., University of Nebraska.
Business Administration. Major Professor: H. E. Miller, Professor.
Thesis: Financial Statements of Life Insurance Companies.
- GERALD M. REAGAN, Ph.D. A.B., University of Nebraska; M.A., Western Michigan University.
Education. Major Professor: T. F. Green, Associate Professor.
Thesis: Toward A More Justifiable Theory For The Evaluation of Teachers and Teaching.
- KENNETH W. REBER, Ed.D. A.B., M.A., Western Michigan University.
Education. Major Professor: W. H. Roe, Professor.
Thesis: A Study of the Persistence Tendencies of Foundation-Supported Innovations in Organization for Instruction in Selected School Systems.
- DONALD REYNOLDS, Ph.D. B.A., Long Island University; M.A., Michigan State University.
Psychology, Major Professor: M. R. Denny, Professor.
Thesis: Probability Learning, Competing Responses, and Interstimulus Interval (ISI) Effects in Two-Choice Reaction Time.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

- ARTHUR HENRY RICE, JR., Ph.D. B.A., Central Michigan University; M.S.J., Northwestern University.
Education. Major Professor: W. H. Roe, Professor.
Thesis: A Study of "Gate Keeping" Practices and Credibility Sources of Education Reporters in Selected Michigan Daily Newspapers.
- DONALD OSCAR RICKTER, Ph.D. B.A., M.S., University of California.
Chemistry. Major Professor: G. J. Karabatsos, Associate Professor.
Thesis: Some Carbonium Ion Rearrangements.
- ROBERT JAMES RIEKSE, Ph.D. A.B., Hope College; A.M., University of Michigan.
Education. Major Professor: M. S. Smith, Professor.
Thesis: Analysis of Selected Significant Historical Factors in the History of the Pioneer Junior College in Michigan: Grand Rapids Junior College 1914-1962.
- MARY JUDITH ROBINSON, Ph.D. B.S., M.S., Michigan State University.
Microbiology & Public Health. Major Professor: D. E. Schoenhard, Professor.
Thesis: A Conjugation System in *Salmonella pullorum*.
- PHILIP D. ROWLEY, Ed.D. B.A., M.A., Michigan State University.
Education. Major Professor: C. A. Blackman, Associate Professor.
Thesis: Historical Foundations of Curriculum Development in the Elementary Schools of Kansas.
- JOHN S. SARGENT, Ph.D. B.S., M.S., Ontario Agricultural College.
Food Science. Major Professor: C. M. Stein, Professor.
Thesis: The Effect of Heat Treatment on the Distribution of Residual and Added Copper in Fluid Milk Systems.
- STUART EDWARD SCHEPPELE, Ph.D. B.S., University of Dubuque.
Chemistry. Major Professor: G. J. Karabatsos, Associate Professor.
Thesis: PART I – The Effect of Non-bonded Interactions in Solvolytic Displacement Reactions. PART II – Some Proton ^{13}C Coupling Constants in Substituted Arylcarbinyl Compounds.
- PIYUSH C. SHARMA, Ph.D. B.E., Government Engineering College (India); M.S., Michigan State University.
Civil Engineering. Major Professor: R. K. Wen, Professor.
Thesis: Dynamic Response of Plates on Elastic Foundation.
- TWYLA M. SHEAR, Ed.D. B.S., University of Idaho; M.S., Oregon State College.
Education. Major Professor: H. L. Hollandsworth, Associate Professor.
Thesis: An Evaluation of Core Curriculum In The College of Home Economics.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

DAVID S. SILKINER, Ph.D.

B.A., Westminster College; M.A., Michigan State University.
Psychology. Major Professor: C. F. Frost, Professor.
Thesis: A Method to Translate Organizational Effectiveness into Operational Data and a Test of Its Practicality.

ALLAN AUGUST SPITZ, Ph.D.

A.B., University of New Mexico; M.A., Michigan State University.
Political Science. Major Professor: R. H. Horwitz, Professor.
Thesis: The Hawaiian Homes Program: A Study in Ideological Transplantation.

OWEN LAVERLE SPRINGER, Ed.D.

B.S., Indiana State Teachers College; M.E.D., University of Illinois.
Education. Major Professor: H. C. Rudman, Professor.
Thesis: A Study of the Relationships Between the *Educational Characteristics Criterion*, (ECC), *The Stanford Achievement Test*, and Selected Cost Factors.

ROBERT EMERSON STROHMAN, Ph.D.

B.S., M.S., University of Wisconsin.
Agricultural Engineering. Major Professor: H. F. McColly, Professor.
Thesis: Action of a Conical Rotary Stripper-Beater Employed in Harvesting Standing Grain.

THOMAS VAN DOORN TELDER, Ed.D.

B.A., M.A., Michigan State University.
Education. Major Professor: W. V. Hicks, Professor.
Thesis: Utilization of the Draw-A-Teacher Technique in Studying Selected Dimensions in Teacher Education.

TED JAMES TETZLAFF, Ph.D.

B.A., M.A., Michigan State University.
Psychology. Major Professor: M. R. Denny, Professor.
Thesis: The Effects of Early Handling on the Adrenal-Cortical Response to Stress as Measured by Circulating Corticosterone.

SATVIR SINGH TEVETHIA, Ph.D.

B.V.S., A.H., Agra University; M.S., Michigan State University.
Microbiology & Public Health. Major Professor: C. H. Cunningham, Professor.
Thesis: Studies of the Antigens of Infectious Bronchitis Virus.

SHAILER THOMAS, Ph.D.

B.A., Oberlin College; M.A., Michigan State University.
Sociology & Anthropology. Major Professor: W. B. Brookover, Professor.
Thesis: An Experiment to Enhance Self-Concept of Ability and Raise School Achievement Among Low Achieving Ninth Grade Students.

MILLARD S. THOMSON, Ph.D.

B.A., Wesleyan University; B.M., M.M., Julius Hartt School of Music.
Music. Major Professor: H. O. Reed, Professor.
Thesis: SHADOWS OF AUTUMN A cantata for chorus, soloists, and orchestra. Text by Robert Nathan.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

- TEOKTISTOS TORIDIS, Ph.D. B.S., Robert College (Turkey); M.S., Michigan State University.
Civil Engineering. Major Professor: R. K. Wen, Professor.
Thesis: Dynamic Behavior of Elasto-Inelastic Beams Subjected to Moving Loads.
- RONALD WEISS, Ph.D. B.S., Arizona State College; M.S., Arizona State University.
Chemistry. Major Professor: W. H. Reusch, Associate Professor.
Thesis: PART I – Study of Some Isomers of the 1,1-Spirocyclohexane- Δ^4 – Tetrahydroindan-3- One System. PART II – Investigation of the Thermal and Free Radical Reactions of Phenyl Substituted Oxiranes.
- DELANE E. WELSCH, Ph.D. B.S., M.S., University of Nebraska.
Agricultural Economics. Major Professor: C. L. Johnson, Professor.
Thesis: The Rice Industry in the Abakaliki Area of Eastern Nigeria, 1964.
- CURTIS WILKINS, Ph.D. B.S., Wisconsin State University.
Physical Chemistry. Major Professor: J. B. Kinsinger, Associate Professor.
Thesis: The Dependence of Dilute Solution Properties on the Configuration of Polybutene-1.
- ROBERT HENLEY WOODY, Ph.D. B. Mus., Western Michigan University; M.A., Michigan State University.
Education. Major Professor: W. W. Farquhar, Professor.
Thesis: The Use of Electroencephalography and Mental Abilities Tests in the Diagnosis of Behavioral Problem Males.
- IRVING RUDOLPH WYETH, Ph.D. B.S., M.S., Michigan State University.
Education. Major Professor: F. G. Parker, Associate Professor.
Thesis: Status-Role Perceptions in the Taiwan Extension Organization.

DIPLOMA FOR ADVANCED GRADUATE STUDY

- GLENN EDWIN HAGEN B.A., Eastern Michigan University; M.A., University of Michigan.
Education. Major Professor: R. L. Featherstone, Associate Professor.
- PAUL C. LEMIN A.B., Northern Michigan College; M.A., University of Michigan.
Education. Major Professor: F. G. Parker, Associate Professor.
- BETTY JUNE MCGOWAN B.A., B.S., M.S., Michigan State University.
Education. Major Professor: W. Norris, Associate Professor.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DIPLOMA FOR ADVANCED GRADUATE STUDY – Continued

ROBERT EDWARD POBUDA A.B., Western Michigan University; M.A., University of Michigan.
Education. Major Professor: C. M. Campbell, Professor.

HAROLD EDWARD STREETER A. B., Hope College; M.A., Western Michigan University.
Education. Major Professor: C. A. Blackman, Associate Professor.

PER A. WICKSTROM A.B., Western Michigan University; M.A., University of Michigan.
Education. Major Professor: W. H. Roe, Professor.

VICTOR WIER B.S., Western Michigan University; M.A., University of Michigan.
Education. Major Professor: J. H. Suehr, Assistant Professor.

Graduates as of September 4, 1964

CANDIDATES FOR THE DOCTORAL DEGREES

YAHYA Z. ABDELBAKI, Ph.D. B.V.S., Cairo University; M.R.C.V.S., Royal Veterinary College; M.S.,
Michigan State University.
Anatomy. Major Professor: T. W. Jenkins, Associate Professor.
Thesis: The Gross & Microscopic Anatomy of the Blood Supply to the
Bovine Brain.

OTHMAN MOHAMMAD ABU-CHEIDA, Ph.D. B.S., American University of Beirut; M.S., Michigan State University.
Applied Mechanics. Major Professor: S. Serata, Assistant Professor.
Thesis: Effect of Stress on Ultrasonic Wave Velocities in Rock Salt.

ROBERT ELMER AICHELE, Ph.D. B.M., Indiana University; M.M., College-Conservatory of Music of Cin-
cinnati.
Music. Major Professor: H. O. Reed, Professor.
Thesis: Symphony for Orchestra.

JOSEPH LEE AUBEL, Ph.D. B.S., Michigan State University.
Physics. Major Professor: C. D. Hause, Professor.
Thesis: Magnetic Rotation Spectra of NO₂ and NO in the Near Infrared.

MAX EUGENE AUSTIN, Ph.D. B.S., M.S., University of Rhode Island.
Horticulture. Major Professor: S. K. Ries, Associate Professor.
Thesis: Morphological Studies on the Tomato Plant for Predicting Once-
over Harvest.

CHARLES M. BACON, Ph.D. B.S., M.S., Oklahoma State University.
Electrical Engineering. Major Professor: H. E. Koenig, Professor.
Thesis: State-Space Design and Optimization of Linear Time-Variant
Systems.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES — Continued

- CHARLES STANLEY BALDWIN, Ph.D. B.S., M.S., Ontario Agricultural College.
Soil Science. Major Professor: J. F. Davis, Professor.
Thesis: The Effect of Time and Rate of Application of Nitrogen, Date of Harvest and Various Production Practices on the Yield and Sucrose Content of Sugar Beets.
- JOHN JAMES BALDWIN, JR., Ph.D. B.A., Albion College; M.A., University of California.
Speech. Major Professor: F. C. Johnson, Associate Professor.
Thesis: A Multi-Variate Analysis of Student Attendance at University Theatre Productions, Michigan State University, 1963-64.
- JACK WILLIAM BEAL, Ph.D. B.S., Texas Technological College; M.S., Michigan State University.
Physics. Major Professor: M. M. Gordon, Professor.
Thesis: Studies of Beam Deflection for a Three-Sector Cyclotron.
- TEOFILA CABRERA BEAMAN, Ph.D. B.S., University of Santo Tomas; M.S., University of the Philippines.
Botany and Plant Pathology. Major Professor: R. S. Bandurski, Professor.
Thesis: Enzymes in Corn Coleoptile Cell Walls.
- LEO HERMAN BLACKWELL, JR., Ph.D. B.A., University of Texas; M.A., East Texas State College.
Physiology. Major Professor: L. F. Wolterink, Professor.
Thesis: A Study of Tritiated Thymidine Incorporation in Mouse Femur Bone Marrow Deoxyribonucleic Acid.
- ERNEST A. BOYKINS, Ph.D. B.S., Xavier University; M.S., Texas Southern University.
Zoology. Major Professor: G. J. Wallace, Professor.
Thesis: DDT Residues in the Food Chains of Birds.
- WALTER M. BRYLOWSKI, Ph.D. B.A., Kalamazoo College; M.A., University of Connecticut.
English. Major Professor: H. Adams, Professor.
Thesis: Man's Enduring Chronicle: Myths in the Novels of William Faulkner.
- ANTONIO DIGAL BUSTRILLOS, Ph.D. B.S.A., University of the Philippines.
Botany and Plant Pathology. Major Professor: H. H. Murakishi, Professor.
Thesis: Purification, Electron Microscopy and Serology of Pea Enation Mosaic Virus.
- JACK BLAKE CARMICHAEL, Ph.D. B.A., Ohio Wesleyan University.
Chemistry. Major Professor: J. B. Kinsinger, Associate Professor.
Thesis: A Statistical Study of the Structure of the Dimethylsiloxane Chain and Rings.
- THOMAS ROSARIO CASTRO, Ph.D. B.S., University of Ponna; M.S., Michigan State University.
Entomology. Major Professor: R. F. Ruppel, Associate Professor.
Thesis: Natural History of the Cereal Leaf Beetle *Oulema melanopa* (Linnaeus) and Its Behavior under Controlled Environmental Conditions.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

- RAMKRISHNA D. CHAUDHARI, Ph.D. B.E., M.E., College of Engineering, Poona, India.
Metallurgical Engineering. Major Professor: H. L. Womochel, Professor.
Thesis: Influence of Ladle Additions of Calcium Strontium and Barium
on the Microstructure and Properties of High Strength Hypoeutectic Gray
Cast Iron.
- WILLIAM JOHN CHESTNUT, Ph.D. B.A., Central Michigan University.
Education. Major Professor: W. W. Farquhar, Professor.
Thesis: The Effects of Structured and Unstructured Group Counseling
on Male College Students' Underachievement.
- DAVID COHEN, Ph.D. B.S., B.Ed., Melbourne University.
Education. Major Professor: F. B. Dutton, Professor.
Thesis: The Development of an Australian Science Curriculum Model.
- GEORGE GORDON CONNALLY, Ph.D. A.B., Lafayette College; M.S., University of Rochester.
Geology. Major Professor: M. M. Miller, Professor.
Thesis: Glacial Geology of the Western Finger Lakes Region, New York.
- THOMAS G. COOK, Ph.D. B.S., Northern Michigan University; M.A., Michigan State University.
Education. Major Professor: F. G. Parker, Associate Professor.
Thesis: A Study of In-service Education Programs for Classroom Teachers
Utilizing Instructional Television in Selected Public Schools in Michigan.
- DAN LANIER COSTLEY, Ph.D. B.A., M.A., University of Oklahoma.
Communication. Major Professor: G. R. Miller, Assistant Professor.
Thesis: A Study of the Relationships Between Selected Factors in Inter-
personal Communication and Group Attraction.
- RICHARD CLAIR COX, Ph.D. B.S., Edinboro State College; M.A., Michigan State University.
Education. Major Professor: W. G. Warrington, Professor.
Thesis: An Empirical Investigation of the Effect of Item Selection Tech-
niques on Achievement Test Construction.
- ABDALLAH GEORGE DAHIR, Ph.D. B.S., American University of Beirut; M.S., Michigan State University.
Applied Mechanics. Major Professor: S. Serata, Assistant Professor.
Thesis: Continuous Medium Analysis of Elastic, Plastic and Viscoelastic
Behavior of a Model Salt Cavity.
- DIEDERIK CORNELIS DIGNUS DEJONG, Ph.D. B.S., M.S., Ontario Agricultural College.
Botany & Plant Pathology. Major Professor: J. H. Beaman, Associate
Professor.
Thesis: The Taxonomy of the genus *Astranthium* (Compositae-Astereae).
- JOHN DALE DEMAREE, D.B.A. B.S., University of Illinois; M.A., Michigan State University.
Business Administration. Major Professor: C. McMillan, Jr., Professor.
Thesis: Inventory Management: Positive and Normative Models of Deci-
sion Making in the Metals Service Center Industry.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

- WILLIAM F. DONNALLEY, Ph.D. B.S., M.S., University of Delaware.
Horticulture. Major Professor: S. K. Ries, Associate Professor.
Thesis: Studies on the Herbicidal Enhancement of 3-Amino-1, 2, 4-Triazole by Ammonium Thiocyanate with *Agropyron Repens*.
- THOMAS LYNN DRAKE, Ph.D. B.S., Tri-State College; M.S., Michigan State University.
Electrical Engineering. Major Professor: R. J. Reid, Associate Professor.
Thesis: A Class of Time Domain Models for the Numerical Solution of Transmission Line Problems.
- LEO DRIEDGER, Ph.D. B.A., Bethel College; B.D., Bethany Seminary; M.A., University of Chicago.
Sociology & Anthropology. Major Professor: W. H. Form, Professor.
Thesis: Religious Typology and the Social Ideology of the Clergy.
- MERLIN GEORGE DUNCAN, Ph.D. B.A., M.A., Michigan State University.
Education. Major Professor: W. F. Johnson, Professor.
Thesis: Instructional Unit Costs in Selected Central American Universities.
- BRUCE JAMES DUNN, Ed.D. B.S., Eastern Michigan University; M.Ed., University of Maryland.
Education. Major Professor: W. H. Roe, Professor.
Thesis: An Analysis and Identification of Instructional Leadership Acts as Performed and Perceived by the Superintendent of Schools.
- JOHN MEAD EATON, Ph.D. B.A., College of Wooster; M.A., Michigan State University.
Education. Major Professor: M. S. Smith, Professor.
Thesis: A Study of Orientation of New Faculty Members in Michigan Community Colleges.
- MOHAMED IBRAHIM EL-GHARBAWI, Ph.D. M.S. (Food Technology), University of Cairo; M.S. (Food Science), University of California.
Food Science. Major Professor: L. R. Dugan, Jr., Associate Professor.
Thesis: Chemical and Physio-Chemical Changes in Lipids and Other Constituents of Freeze-Dried Raw Beef During Storage Under Modified Atmospheres.
- HOTTEN ARTHUR ELLEBY, Ph.D. B.S., M.S., University of Minnesota.
Civil Engineering. Major Professor: C. E. Cutts, Professor.
Thesis: A Numerical Method for the Solution of Problems in Three Dimensional Elasticity.
- HELMY HASSAN ELSHERIF, Ph.D. B.S., Ain Sams University; M.S., Michigan State University.
Electrical Engineering. Major Professor: R. J. Reid, Associate Professor.
Thesis: Transistor Large Signal Analysis.
- ROBERT OWEN ENGBRETSON, Ph.D. B.S., M.A., Western Michigan University.
Communication. Major Professor: G. R. Miller, Assistant Professor.
Thesis: Cognitive Adjustment of Perceived Self Credibility, Perceived Source Credibility and Perceived Task Difficulty as a Result of Feedback in Task Oriented Dyads.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

HOWARD EDSSEL FARRIS, Ph.D.

B.S., M.A., Western Michigan University.

Psychology. Major Professor: M. R. Denny, Professor.

Thesis: Behavioral Development, Social Organization, and Conditioning of Courting Behavior in Japanese Quail *Coturnix Coturnix Japonica*.

JOSEPH R. FISZMAN, Ph.D.

B.A., St. John's University; M.A., Emory University.

Political Science. Major Professor: F. A. Pinner, Professor.

Thesis: The U.S. Labor Attache: Expectations and Reality.

JOHN RICHARD FRANKS, Ph.D.

B.A., M.A., Brigham Young University.

Speech. Major Professor: H. J. Oyer, Professor.

Thesis: A Study of Factors that Influence the Identification of English Sounds in Lipreading.

HARRISON GARDNER, Ph.D.

B.S., M.S., Michigan State University.

Education. Major Professor: R. M. Clark, Professor.

Thesis: Determining Competencies for Initial Employment in the Dairy Farm Equipment Business.

ENRICO ALFRED GIORDANO, Ph.D.

B.S., Eastern Michigan University; M.A., University of Michigan.

Education. Major Professor: H. J. Dillon, Professor.

Thesis: The Effectiveness of the Ferndale, Michigan, Public School Adult Education Program in Enhancing Job Opportunities for School Drop-Outs.

GLENN ALLAN GOERKE, Ph.D.

A.B., M.A., Eastern Michigan University.

Education. Major Professor: H. J. Dillon, Professor.

Thesis: A Review and Analysis of Participant Reaction to the University Civil Defense Extension Training Program in the State of Florida.

SUE N. GREENE, Ph.D.

B.A., M.A., University of Nebraska.

English. Major Professor: R. B. Nye, Professor.

Thesis: The Contribution of *The Monthly Anthology and Boston Review* to the Development of the Golden Age of American Letters.

DAVID LIVINGSTONE HAARER, Ph.D.

B.S., Goshen College; M.A., Eastern Michigan University.

Education. Major Professor: J. M. Crowner, Assistant Professor.

Thesis: A Comparative Study of Self-Concept of Ability Between Institutionalized Delinquent Boys and Non-Delinquent Boys Enrolled in Public Schools.

JEAN ROWAN HALLIDAY, Ph.D.

B.S., Mount Allison University; M.A., Michigan State University.

Home Management. Major Professor: B. Paolucci, Professor.

Thesis: Relationships Among Certain Characteristics of a Decision Event: Decision Procedure, Decision Context, and Decision-maker.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES — Continued

LEONARD HANDLER, Ph.D.

B.A., Brooklyn College; M.A., Michigan State University.
Psychology. Major Professor: J. Reyher, Associate Professor.
Thesis: The Relationship Between GSR and Anxiety Indexes in Projective Drawings.

EDWARD J. HARDICK, Ph.D.

B.S., Geneseo State Teachers College; M.A., Ohio State University.
Speech. Major Professor: H. J. Oyer, Professor.
Thesis: The Self-Concept of Hard-of-Hearing Adults as Measured by the Semantic Differential Technique.

STANLEY R. HARRISON, Ph.D.

B.A., M.A., Brooklyn College.
English. Major Professor: R. B. Nye, Professor.
Thesis: Edgar Fawcett, a Minor Writer in the Literary Current of his Time: An Edition of an Unpublished Novel, *The Pride of Intellect*.

MARTIN CASE HAWLEY, Ph.D.

B.S., Michigan State University.
Chemical Engineering. Major Professor: D. K. Anderson, Associate Professor.
Thesis: Solute Dispersion in Liquid-Solid Chromatographic Columns.

VERL EDWIN HEADLEY, Ph.D.

B.S., Tri-State College; M.S., Michigan State University.
Agricultural Engineering. Major Professor: C. W. Hall, Professor.
Thesis: An Equation and Dimensionless Parameters Describing Infrared Vibration Drying.

WILLIAM LOUIS HIEMSTRA, Ph.D.

A.B., Calvin College; Th.M., Westminster Theological Seminary; M.A., University of Mississippi.
Education. Major Professor: J. E. Jordan, Associate Professor.
Thesis: Self Perceptions and Perceptions of Selected Bible Characters: A Study of Depressed Psychiatric Patients.

BENJAMIN JOSEPH HODGKINS, Ph.D.

B.A., M.A., Michigan State University.
Sociology & Anthropology. Major Professor: D. Gottlieb, Associate Professor.
Thesis: Student Subcultures — An Analysis of Their Origins and Affects on Student Attitude and Value Change in Higher Education.

DAVID ERLE HUYLER, Ph.D.

B.A., M.A., Cornell University.
History. Major Professor: M. E. Gesner, Associate Professor.
Thesis: The Character and Personality of King Henry VI as Factors in the Lancastrian-Yorkist Struggle.

CASIMIR JOSEPH JACHIMOWSKI, Ph.D.

B.S., DePaul University.
Chemistry. Major Professor: M. E. Russell, Assistant Professor.
Thesis: On the Application of Stochastic Processes to Reaction Kinetics.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

- VIJAY KUMAR JAIN, Ph.D. B.E., Birla Engineering College; M.E., University of Bourkee.
Electrical Engineering. Major Professor: H. E. Koenig, Professor.
Thesis: Optimization of Linear Systems.
- DAVID ROY KAMERSCHEN, Ph.D. B.A., M.A., Miami University.
Economics. Major Professor: T. R. Saving, Associate Professor.
Thesis: An Estimation of the "Welfare Losses" from Monopoly in the American Economy.
- CHARLES HSI-CHUNG KAO, Ph.D. B.S., Taiwan Provincial College of Agriculture; M.S., South Dakota State College.
Agricultural Economics. Major Professor: L. W. Witt, Professor.
Thesis: The Role of the Agricultural Sector in Taiwan's Economic Development.
- DAVID THOMAS KEE, Ph.D. A.B., Northern Michigan College; M.S., University of Arkansas.
Zoology. Major Professor: G. J. Wallace, Professor.
Thesis: Natural Color Preferences of the Domestic Chicken and the European Quail.
- DONALD EARL KEESEY, Ph.D. B.A., Miami University; M.A., Michigan State University.
English. Major Professor: A. J. M. Smith, Professor.
Thesis: Dramatic Criticism in the *Gentleman's Magazine*, 1747-1784.
- HUDSON VAN ETEN KRONK, Ph.D. B.S., Rensselaer Polytechnic Institute; M.S., Michigan State University.
Mathematics. Major Professor: J. G. Hocking, Professor.
Thesis: Continuous Near-Homogeneity.
- OTTO ROBERT KUNZE, Ph.D. B.S., Texas A & M College; M.S., Iowa State University.
Agricultural Engineering. Major Professor: C. W. Hall, Professor.
Thesis: Environmental Conditions and Physical Properties of Rice which Produce Fissures.
- ROLAND SIGWARD LARSON, Ed.D. B.S., M.A., University of Minnesota.
Education. Major Professor: J. W. Costar, Professor.
Thesis: A Study of Selected Personality Factors Associated with High School Dropout.
- JOSEPH ROBERT LEVINE, Ph.D. B.A., Brooklyn College; M.A., Michigan State University.
Psychology. Major Professor: A. M. Barch, Professor.
Thesis: Stimulus Similarity and Sequence, Inter-stimulus Interval and Learning Method in an Auditory Paired-Associate Task.
- EVERETT C. LOUGHEED, Ph.D. B.S.A., M.S.A., Ontario Agricultural College.
Horticulture. Major Professor: D. H. Dewey, Professor.
Thesis: Some Physiological Responses of Excised Asparagus Shoots to Water, Temperatures and Atmospheres of Oxygen and Carbon Dioxide.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

- AALDERT MENNEGA, Ph.D. B.A., Calvin College; M.S., Michigan State University.
Anatomy. Major Professor: M. L. Calhoun, Professor.
Thesis: Morphology of the Lower Respiratory System of the White Peking Duck.
- DAVID H. MILLS, Ph.D. B.S., M.S., Iowa State University.
Psychology. Major Professor: N. Abeles, Associate Professor.
Thesis: Liking as a Therapist Variable in the Psychotherapeutic Interaction.
- LEWIS J. MINOR, Ph.D. B.S., Michigan State University; M.S., Wayne State University.
Food Science. Major Professor: A. M. Pearson, Professor.
Thesis: Identification of Some Chemical Components in Chicken Flavor.
- VICTOR U. MOK, Ph.D. B.A., Chung Chi College; M.A., Michigan State University.
Economics. Major Professor: A. Koo, Professor.
Thesis: The Foreign Trade of Communist China 1949-60.
- ROBERT R. MONAGHAN, Ph.D. A.B., Olivet College; M.A., Stanford University.
Communication. Major Professor: M. S. MacLean, Professor.
Thesis: Television and Viewing Behavior.
- ANANT R. NEGANDHI, Ph.D. B.A., University of Bombay; M.B.A., Texas Christian University.
Business Administration. Major Professor: C. McMillan, Jr., Professor.
Thesis: An Evaluation of the Private Foreign Investment Climate in India.
- DAVID MORGAN NOLAN, Ph.D. B.S., M.A., Michigan State University.
Education. Major Professor: W. W. Farquhar, Professor.
Thesis: The Experimental Effect of Grades Assigned to a Single Task on Subsequent Academic Performance.
- OTIS OLIVER-PADILLA, Ph.D. B.S., College of Agriculture, Mayaguez; M.A., Michigan State University.
Communication. Major Professor: M. S. MacLean, Professor.
Thesis: The Role of Values and Channel Orientations in the Diffusion and Adoption of New Ideas and Practices: A Puerto Rican Dairy Farmer's Study.
- WILLIAM ROY OVERLEASE, Ph.D. B.S., M.S., Michigan State University.
Botany & Plant Pathology. Major Professor: J. E. Cantlon, Professor.
Thesis: A Study of Variation in the Red Oak Group in Michigan and Nearby States.
- EDWARD L. PALMER, Ph.D. B.S., Oregon College of Education; M.A., Michigan State University.
Education. Major Professor: B. R. Corman, Professor.
Thesis: Differential Adaptivity in the Judgment of Children.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

OSBORNE B. PARKER, Ed.D.

B.S., Purdue University; M.A., Indiana University.
Education. Major Professor: W. W. Farquhar, Professor.
Thesis: An Analysis of Metropolitan Male College Students Involved in Discipline Problems.

NORVAL F. PEASE, Ph.D.

B.A., Walla Walla College; M.A., B.D., Seventh-Day Adventist Theological Seminary.
Speech. Major Professor: K. G. Hance, Professor.
Thesis: Charles E. Weniger's Theory of the Relationship of Speech and Homiletics as Revealed in His Teaching Procedures, Writings, and Public Addresses.

SAMUEL H. PETTIGREW, Ph.D.

B.A., M.A., University of Toledo.
Education. Major Professor: W. W. Farquhar, Professor.
Thesis: The Validation of an Objective Measure of Academic Achievement Motivation for Male College Freshmen.

MICHAEL JOHN PHILLIP, Ph.D.

B.S.A., M.S.A., University of Toronto.
Horticulture. Major Professor: S. Honma, Associate Professor.
Thesis: Inheritance of Resistance to Tobacco Mosaic Virus Induced Internal Browning in Tomatoes.

RICHARD L. PHILLIPS, Ph.D.

B.S., California State Polytechnic College; M.S., Michigan State University.
Horticulture. M. J. Bukovac, Professor.
Thesis: Influence of Root Temperature on the Absorption of Foliar Applied Radiophosphorus and Radiocalcium.

ANTONIO M. PINCHINAT, Ph.D.

B.S., Ecole Nationale d'Agriculture; M.S., Michigan State University.
Crop Science. Major Professor: M. W. Adams, Professor.
Thesis: Recurrent Inter-crossing Coupled with Irradiation as a Means of Increasing Genetic Variability in Navy Beans (*Phaseolus vulgaris* L.)

HERBERT M. POTASH, Ph.D.

A.B., University of Chicago; M.A., Kent State University.
Psychology. Major Professor: B. L. Kell, Professor.
Thesis: Schizophrenic Interaction and the Concept of the Double Bind.

JOHN F. POVEY, Ph.D.

B.A., M.A., University of South Africa.
English. Major Professor: H. Adams, Professor.
Thesis: The Oxford Group: A Study of the Poetry of W. H. Auden, Stephen Spender, C. Day Lewis, and Louis MacNeice.

IVAN L. PRESTON, Ph.D.

A.B., College of Wooster; M.A., Michigan State University.
Communication. Major Professor: D. K. Berlo, Associate Professor.
Thesis: Temporary Coalitions in the Process of Coalition Formation.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

- CHARLES MOORE RENNEISEN, Ed.D. B.S., M.S., Indiana University.
Education. Major Professor: F. G. Parker, Associate Professor.
Thesis: A Comparison of Michigan State University Students Who Graduated From Various Size High Schools on the Basis of Intellective and Affective Variables and Academic Success.
- JAMES HENRY REYNIERSE, Ph.D. A.B., Calvin College; M.A., Michigan State University.
Psychology. Major Professor: M. R. Denny, Professor.
Thesis: The Effects of Stimulus Sampling on the Retention of an Avoidance Response.
- CHARLES WILLIAM RHODES, Ph.D. B.S., M.A., Wayne State University.
Education. Major Professor: W. H. Roe, Professor.
Thesis: Practices and Trends in Purchasing Instructional Supplies by Michigan Public School Districts.
- ARTHUR GEORGE RIEWALD, Ph.D. B.A., Wheaton College; B.D., Fuller Theological Seminary.
Education. Major Professor: W. W. Farquhar, Professor.
Thesis: The Relationship of Counselor's Tolerance of Ambiguity to Counselor Behavior in the Counseling Interview. A Pilot Study.
- NICOLAS A. RODRIGUEZ, Ph.D. B.A., Inter-American University; M.A., University of Florida.
Education. Major Professor: W. W. Farquhar, Professor.
Thesis: A Comparison of the Perceptions First Year Teachers, Practice Teachers, and Seniors Without Teaching Experience Hold of the Problems Facing Beginning Teachers in Puerto Rico.
- FREDERICK W. ROHRS, Ph.D. B.A., University of Rochester; M.A., Michigan State University.
Psychology. Major Professor: A. I. Rabin, Professor.
Thesis: The Relationship of Sexual Symbol Identification and Preference to Neuroticism and Extraversion-Introversion.
- JOHN LINDLEY RUBY, Ph.D. B.S., Purdue University; M.S., Michigan State University.
Forestry. Major Professor: J. W. Wright, Professor.
Thesis: The Correspondence Between Genetic, Morphological, and Climatic Variation Patterns in Scotch Pine.
- HERBERT GRANT SAMPSON, Ph.D. B.A., M.A., Bishop's University.
English. Major Professor: A. J. M. Smith, Professor.
Thesis: The Anglican Tradition in Eighteenth-Century Verse.
- PAUL E. SANDS, Ph.D. A.B., A.M., University of Michigan.
Business Administration. Major Professor: R. H. Simonds, Professor.
Thesis: Accident Prevention and Governmental Control in the Construction Industry in Michigan and Ohio.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES — Continued

- HAROLD WILLIAM SCHMALFELD, Ph.D. B.S., Elmhurst College; M.S., Michigan State University.
Horticulture. Major Professor: R. L. Carolus, Professor.
Thesis: The Mineral Composition of *Tulipa gesneriana* as Related to Growth and Nutrition.
- WALTER JOHN SCHULDT, Ph.D. B.S., University of Wisconsin; M.A., Michigan State University.
Psychology. Major Professor: C. L. Winder, Professor.
Thesis: Psychotherapists', Approach-Avoidance Responses and Clients' Expressions of Dependency: A Longitudinal Analysis.
- CAROL WARWICK SHAFFER, Ph.D. B.S., M.S., Michigan State University.
Home Management. Major Professor: J. D. Schlater, Associate Professor.
Thesis: Income and Expenditure Patterns Related to the Life Cycle.
- TEH-CHIEN SHEN, Ph.D. B.S., National Taiwan University; M.S., Michigan State University.
Crop Science. Major Professor: C. M. Harrison, Professor.
Thesis: Studies on Tillering of Sudangrass (*Sorghum sudanense*, Stapf) with Special Attention to the Effects of Ridging.
- ALAN P. SPIVAK, Ph.D. B.A., University of Michigan; M.A., Michigan State University.
Psychology. Major Professor: C. Hanley, Professor.
Thesis: Leveling-Sharpening as Related to Repression.
- DONALD CARL STOLBERG, Ph.D. B.S., Western Michigan University; M.S., Michigan State University.
Education. Major Professor: W. D. Van Huss, Professor.
Thesis: The Multi-level Step Test as a Predictor of Maximum Oxygen Intake.
- ARVIND S. SUMMANWAR, Ph.D. B.S., Nagpur University; M.S., Poona University.
Botany & Plant Pathology. Major Professor: W. J. Hooker, Professor.
Thesis: Cytopathology of Potato Virus X in Cotyledons of *Datura tatula* L.
- MARK H. THELEN, Ph.D. B.A., M.A., Michigan State University.
Psychology. Major Professor: A. I. Rabin, Professor.
Thesis: Similarities of Defense Preference Within Families, Within Sex Groups, and Their Relationship to Parental Identification in Adolescent Males.
- ROY O. THOMAS, Ph.D. B.S., Berea College; M.S., University of Tennessee.
Dairy. Major Professor: L. D. Brown, Assistant Professor.
Thesis: Effect of Various Adjuncts on the Preservation, Composition, Uniformity and Nutritional Qualities of Alfalfa Silage.
- RICHARD LEE TITUS, Ph.D. B.A., De Pauw University.
Chemistry. Major Professor: R. D. Schuetz, Professor.
Thesis: The Preparation of Some 3, 6- and 3, 4-Disubstituted Thianaphthenes.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES — Continued

- JOHN M. TROJANOWICZ, Ph.D. A.B., University of Michigan; A.M., University of Illinois.
German. Major Professor: S. R. Townsend, Professor.
Thesis: The Poetry of Joachim Ringelnatz — an Interpretation.
- VIRENDRA TULI, Ph.D. B.S., Allahabad Agriculture Institute; M.S., Michigan State University.
Horticulture. Major Professor: S. H. Wittwer, Professor.
Thesis: Mode of Action of N⁶-Benzyladenine in the Inhibition of Respiration in Higher Plants With Special Reference to Broccoli (*Brassica oleracea* var *italica* cv. Spartan Early).
- FREDERICK LEWIS URBACH, Ph.D. B.S., Pennsylvania State University.
Chemistry. Major Professor: A. Timnick, Associate Professor.
Thesis: Spectrophotometric and Spectrofluorometric Study of Flavonol-Aluminum Chelates in Absolute Alcohol.
- DUANE L. VARBLE, Ph.D. B.A., Southern Illinois University; M.A., Michigan State University.
Psychology. Major Professor: C. L. Winder, Professor.
Thesis: An Exploratory Analysis of Hostility in Psychotherapy.
- NORMAN PETER WEINHEIMER, Ed.D. A.B., Western Michigan University; M.A., University of Notre Dame.
Education. Major Professor: S. E. Hecker, Associate Professor.
Thesis: An Analysis of Selected Cost-Quality Factors in Education as Related to Selected School Districts in Michigan.
- RONALD GARY WEISMAN, Ph.D. B.A., M.A., Michigan State University.
Psychology. Major Professor: M. R. Denny, Professor.
Thesis: A New Method of Classical Conditioning in the Rat: Comparisons with an Instrumental Conditioning Technique Using the Same Response.
- DANIEL EDWIN WEISS, Ph.D. B.A., M.A., Wheaton College; B.D., Gordon Divinity School.
Speech. Major Professor: K. G. Hance, Professor.
Thesis: Conceptions of "Arrangement" in American Protestant Homiletical Theory.
- LESTER FRANK WHITNEY, Ph.D. B.S., University of Maine; M.S., Michigan State University.
Agricultural Engineering. Major Professor: C. W. Hall, Professor.
Thesis: Design Parameters of Fluidization Principles for Forage Harvesting and Processing.
- MYRON E. WIRTH, Ph.D. B.S., M.S., Michigan State University.
Agricultural Economics. Major Professor: J. M. Nielson, Professor.
Thesis: Classification of Farm Managerial Types: An Application of Pattern Analysis.

SCHOOL FOR ADVANCED GRADUATE STUDIES

CANDIDATES FOR THE DOCTORAL DEGREES – Continued

- DWAYNE EARL WRIGHTSMAN, Ph.D. B.A., Manchester College; M.A., Indiana University.
Economics. Major Professor: W. Adams, Professor.
Thesis: An Analysis of the Extent of Corporate Ownership and Control by Private Pension Funds.
- RADHA KRISHNA RAO YARLAGADDA, Ph.D. B.E., B. M .S. College (India); M.S., South Dakota State College.
Electrical Engineering. Major Professor: Y. Tokad, Associate Professor.
Thesis: State Model Approach to the Synthesis of LC Networks and the Canonic LC Network Transforms.

DIPLOMA FOR ADVANCED GRADUATE STUDY

- JOHN WILLIAM ALWOOD A.B., Western Michigan University; M.E., University of Kansas.
Education. Major Professor: F. G. Parker, Associate Professor.
- BERNICE L. APPLEBEE B.A., M.A., Western Michigan University.
Education. Major Professor: W. V. Hicks, Professor.
- NANCY ELLEN BRETZ A. A., Stephens College; B.A., Evansville College; M.S., Indiana University.
Education. Major Professor: B. H. Van Roekel, Professor.
- KENNETH GEORGE BROWN A.B., Western Michigan University; M.A., University of Michigan.
Education. Major Professor: W. A. Mann, Professor.
- ELVIRA T. HAUSLEIN B.S., M.E., Wayne State University.
Education. Major Professor: C. C. Collier, Professor.
- SISTER JAMES LORENE HOGAN A.B., University of California; M.A., Kent State University.
Education. Major Professor: J. M. Cowner, Assistant Professor.
- RAJ KUMAR MICHAEL B.A., Meerut College; M.A., (Social Work), Delhi University; M.A., (Sociology), Michigan State University.
Education. Major Professor: A. M. Eldersveld, Associate Professor.
- RAY C. MIDDLETON A.B., University of Michigan; B.D., Evangelical Theological Seminary.
Education. Major Professor: W. A. Mann, Professor.
- WALTER W. NICKEL A.B., Eastern Michigan University; M.A., University of Michigan.
Education. Major Professor: F. Vescolani, Associate Professor.
- THOMAS L. PROVOST B.S., M.A., Michigan State University.
Education. Major Professor: F. Vescolani, Associate Professor.

COLLEGE OF AGRICULTURE

THOMAS K. COWDEN, DEAN

DEGREE OF MASTER OF SCIENCE

Agricultural Economics

Gail Latimer Cramer
Abraham Demere
Prawat Supaprawat

Agricultural Extension

William Howard Judy

Agricultural Mechanics

You-Tsai Hung
Nils Jakob Moller

Animal Husbandry

James Richard Covert

Biochemistry

Keng Cheng Nah

Cooperative Extension Education

Maria Onyeuwalu Ahunanya

Crop Science

Derek Wilfred Allinson
Kristen Evjen Myhr

Dairy

Dennis Vern Armstrong
Claude Desjardins
Delbert Kent Nelson
LaVern Alberti Rice
William Wayne Wunder

Fisheries and Wildlife

Gary Earl Duke
Robert Samuel Huff

Food Science

Young Suk Kim

Forestry

Frederick Royce Magnus
William Rollin Waite, Jr.

Horticulture

Robert Louis Andersen
Isaac Jose Lewin

Resource Development

Michael Chubb
William Daniel Hess
Stewart K. Wright

DEGREE GRANTED JOINTLY
WITH THE COLLEGE OF
ENGINEERING

Agricultural Engineering

Hugh Albert Curry

DEGREE OF BACHELOR OF SCIENCE

Agricultural Economics

Gerald Lee Crumbaugh
David Charles Thuemmel

Animal Husbandry

Joseph Akonji Atekwana
Janet A. Hornbeck
Donald Wayne Moore

Dairy Production

Harlow Cole Bailey
Orlando Huaman
Stanley Arthur Marks

Fisheries and Wildlife

Clifford Wayne Asher
Jack Albert Barkholz
William George Hagdorn
David Anthony LaPointe
William McClay
Carl Bruce Polonski

Floriculture

H* Benjamin Theodore Ford
Bruce Lord Funston

Food Science

H* Marjorie M. Mueller
Clifford James Nye

Forestry

Robert James Bellefeuil
John William Cape
Charles Benjamin Eakle
William Joseph Gabriel
Louis Frederick Gildemeister
Robert H. Hoffman
James Ray Joseph
James Frederick McIntyre
James David Mertes
Robert Anthony Nosse
Paul John Paradzinski
William Norman Rieger, Jr.
Duane Clarence Stout
John Raymond Suffron
David Earl Tubbs

Lumber and Building Materials Merchandising

Donald David Drone
William Frederick Grant, Jr.
Gilbert Gene Walter

Mobile Homes

Thomas Owen Mitchel

Ornamental Horticulture

Douglas Joseph Chapman
Merle Maynard Moore

Packaging

Thomas Joseph Hajec
Robert Duane Kent
Lee Schaaf Kihnke
* Jerry Lee Mautz
Robert James Milne
Ralph Lee Oakley
Richard A. Prendergast
Clifford A. Schimm

H Honors College
* With Honor
** With High Honor

COLLEGE OF AGRICULTURE

DEGREE OF BACHELOR OF SCIENCE	James C. Stander David Ray Stokes John Floyd Sundstrom	<i>Pomology and Vegetable Production</i> David William Babbitt	DEGREE GRANTED JOINTLY WITH THE COLLEGE OF EDUCATION
	<i>Park Management</i> James Roger Cline, Jr. Grant Arthur Petersen Kerr H. Stewart Gerald L. Wright	<i>Residential Building</i> Darrell Gene Lohmolder David Howard Mackin	<i>Agricultural Education</i> James Loren Gibson Lynn Ira Munson Stanley LaVerne Smith William Edgar Weisgerber
		<i>Soil Science</i> John H. Long	

H Honors College
* With Honor
** With High Honor

COLLEGE OF ENGINEERING

JOHN D. RYDER, DEAN

DEGREE OF MASTER OF SCIENCE	<i>Civil Engineering</i> Chandra Sekhar Brahma James Leonard Drake Tanwir Ahmed Khan William Frederick Marcuson, III Thomas Jerome Tepper Shien Tsun Wang	<i>Electrical Engineering</i> Robert Joseph Fitzgerald Joseph Arsen Kurkjian Juang Lu Lin Kirti P. Shah Wiley Ernest Thompson	Ram Mohan Srivastava
		<i>Mechanical Engineering</i> Jerold Leroy Patterson	<i>Metallurgy</i> Chinivard Panduranga Kamath <i>Sanitary Engineering</i> Paul Allan Blakeslee

DEGREE OF BACHELOR OF SCIENCE	<i>Civil Engineering</i> Thomas Allen Leach H**Harry L. Smith	<i>Mechanical Engineering</i> Jack Eugene Gilchrist H*Lynn Charles Lewis Suresh Kumar Mehra Fred Louis Meyers Ronald August Oye Robert James Pierce *Duane Samuel Robinson	*Peter Martin Schwarz
	<i>Electrical Engineering</i> Bruce W. Bromberg Maung Sein Win		DEGREE RECOMMENDED JOINTLY WITH THE COLLEGE OF AGRICULTURE <i>Agricultural Engineering</i> *James Leroy Drury

H Honors College
* With Honor
** With High Honor

COLLEGE OF HOME ECONOMICS

THELMA E. PORTER, DEAN

DEGREE OF
MASTER
OF ARTS

*Education for Home and
Family Living*
Christine B. Sullivan

Textiles and Clothing
Martha Ann Golding
Judy Yaryan Stam

DEGREE OF
MASTER
OF SCIENCE

Foods
Susan Layton Brown

General Home Economics
Elizabeth Jane Oestrike

Marilee Evadna Jacob Purse
Linda Joan Rice

Home Economics Extension
Muriel Sarah Brink
Olive Ann Kuehnl Sain

Institution Administration
Mary Rachel Preston

Nutrition
Margaret Elizabeth Campbell

DEGREE OF
BACHELOR
OF SCIENCE

Dietetics
Jeanette Elizabeth Hay

General Home Economics
Mary Ann Abel
Beverly Colby Ward

Interior Design
Martha Louise
Lindenschmidt

*Retailing of Textiles and
Clothing*
Andrea Gould Hutchins

Marylou Carmen Johnson
Sharon Joy Nelson
Janet Marie Schulz

DEGREE RECOMMENDED
JOINTLY WITH THE COLLEGE
OF EDUCATION

*Child Development and
Teaching*

Susanna Faye Adams
*Marjorie Louise Bird
*Shirley Jean Burger
Linda Sue Cappel
Della Patricia Gregory

Jane Alexander Konkle
*Bonnie Feezel Niemi
Dorothy Louise Sandler
Martha Jean Tanis
Carole Lynn Worline

Home Economics Teaching

Rosalie Janet Betz
Susan Myrtle Calvin
Anne Janice DeCamp
*Susan Kay Heisler
Carol Noritza Krimian
Donna Jeanne Morrill
*Margaret Ann Ross
Joan Elaine Schopp
Rachel Stiles Schwabland

H Honors College
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** With High Honor

COLLEGE OF VETERINARY MEDICINE

WILLIS W. ARMISTEAD, DEAN

DEGREE OF
MASTER
OF SCIENCE

Anatomy

Louis Richard Dellasanta

Surgery and Medicine

James Benson Dalley

DEGREE OF
BACHELOR
OF SCIENCE

Medical Technology

*Patricia Irene Huhtala
H*Julia Mae Runyon

Veterinary Medicine

Richard Edward Bostrom
§Marcia Ruth Lopez
Paul Albert Piche

H Honors College
* With Honor
** With High Honor
§ Posthumous

COLLEGE OF BUSINESS

ALFRED L. SEELYE, DEAN

DEGREE OF MASTER OF ARTS

Business Administration
Gerald Roger Martin

Economics
Samuel Torres-Roman

DEGREE OF MASTER OF BUSINESS ADMINISTRATION

Graduate School of Business Administration
Guy de Alcovia Rego Agulha
George Lidwel Wellington
Anderson
Mark James Banfield
Raul E. Barreto
Gilberto Pereira Barretto
Manoel F. Barros Sobrinho
Ronald Franklin Berman
Carlos Osmar Bertero
Douglas Lee Bockstanz
Steven Carl Bonfoey
Richard Eugene Caylor
Theodore M. Donay

Lawrence Douglas Downs
Roger Floyd Fischer
William Dowman Grant
John Cutler Gray
Carmine Guerro
Steven Lee Hammond
R. Byron Harris
Renato Hauptmann
James John Hintz
Karl Walter Hoff
Richard Lawrence Howe
Edwin Thomas Montenegro
Isensee
William Robert James
John Stephen Kupiec
Kenneth George Lederer

William Edward Lucado, Jr.
Dino Prospero Mastri
Julius DeVere Myers
Josef Emil Oppenheimer
Jay Wesley Pershing
John Robert Peterson
Kenneth Petrine
Dave L. Regan
Thomas Charles Seelig
Dale Norman Shook
Orville Paul Stammen
David Paul Sutter
James Bernard Swonk
Ralph Donald Trine
Raymond Paul Weinstein

DEGREE OF BACHELOR OF ARTS

Accounting
Richard Malcolm Beattie
William Allen Beers, III
James Joseph Berger
*Jack Powell Carlton
Paul Edward Geiger
*John Clark Keane Hays
*John William Heringa
Danny L. Hulbert
Ronald Frederick Laing
Arthur Donald Levine
Benjamin Carl Mahrle
*Roy A. Pentilla
Raymond Dale Salati
Edward James Sips
David Lee Ulrich
Wayne Kenneth Watters
Max F. White

Executive Secretarial Administration
Barbara Ann Boyd

Economics
*Terrance Lynn Arklie
Gary Anthony Barone
Frederick Rodgers Carr
Richard Gerry Elmendorf
David Neil Kenerson
Terry LeTourneau
Michael Crisp McGill
Walter George Niewiadomski
Park Wonhyung Park
Jon Edward Runquist
Brian L. Sisco
Lothar Gustav Terla
John Marshall Walker
Howard Ronald Zacks

Financial Administration
Stephen Michael Bailey
Peter John Gross
Robert Charles Hecht
David Wesley Poole
*Robert White Williamson, Jr.

Food Marketing
John Douglas Comber

General Business Administration
Philip Andrew Ambs
James Arthur Anderson
James Eldred Avery
Richard Andrew Brodie
John Jerome Davidek
William Harold DeWeerd
Martin S. Farrell
Douglas Allen Fisher
David M. Foulke
James Alvin Gerber
John Meehan Humphreys
Philip Lewis Johnson
David Harold Kirsch
John Leslie Lewis
David Kirksey Logan
Michael James MacDonald
James Frank Mullet

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COLLEGE OF BUSINESS

DEGREE OF BACHELOR OF ARTS

Richard James Proebstle
David Healy Purdy
Kenneth V. Roggow
Robert Peter Soodsma
James William Ziozios

General Marketing

Lee Edward Burrows
Thomas Franklin Clark
Andrew Patrick Conner
Davis Olmsted Cowles
James Sutherland Danhof
John Timothy DeLaney
James Clarence DeMaagd
Robert Corwin Greenhalgh
John Roger Hamlin
Rosemary Elizabeth Harrington
Edwin Willits Hubbard
*Harold Jon Kloosterman
George Peter Lantz
Douglas Robert MacKay
Mary Ann Mahrle
Arnold Edward Norman
Irving Zeff Rapaport
Timothy Stewart Reid
Robert Rosenblum
John Thomas Swift
James Kay Tanis
James Paul Thistlethwaite
Marc Harold Veeneman
William Joseph Veresh
Dale T. Wachner
Dale Edward Weaver

Hotel, Motel and Club Management

Michael Edward Aldrich
Neil F. Barnhart

John Arnold Benus
John Bohlson
Anthony James Dulo
Steven Elkovich
Arthur Carl Garrett
Don William Hays
Donald Wayne Johansen
Luke Andrew Johnsos, Jr.
Theodore Justus Lidz
Wayne Howard Lobdell
Jeremy P. Lumianski
Lewis Clair Myron
George William Piercy
Lawrence Russell Thomas
Gary Ray Thompson
John Henry Wills

Hotel, Restaurant and Institutional Management

Hugh Barry Wayne

Industrial Administration

Charles Abbott Barthold
James David Ries
Harold M. Shults
Ronald John Tutsky

Institutional and Hospital Management

James Robert Yeakley

Personnel Administration

Ronald Kenroy Artley
William Doyle Clark
*Franklin Edwin Hardgrove
Edward Albert Peard
Henry Clay Roysden, Jr.
Cameron Howard Sener

Thomas Richard Welch

Production Administration

Thomas Irving Hendrickson
James Krauthaim McNiff, Sr.

Restaurant Management

Loren Walter Balazs
Daniel Held
David Anthony Maren
Philip Taylor McGreevy
Phillip Herbert Minkin
*Alexander James Todd
Douglas Dick Waggott

Transportation Administration

Charles Hendrick Versteeg

DEGREE RECOMMENDED
JOINTLY WITH THE COLLEGE
OF EDUCATION

Business and Teacher Distributive Education

Linda Anne Anthony
Mary Ellen Aughenbaugh
Judith Ann Coffey
Mary Ann Frederick Cox
Elizabeth Alva Fair
Carl Michael Friedlander
H* Susan Helen Graye
Michael Thomas Marciniak
Donald Francis Mauller, Jr.
H* Arlene Leckrone Prepejchal
H* Mary Alice Schulte
Sandra Rae Thomas

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COLLEGE OF EDUCATION

JOHN E. IVEY, JR., DEAN

Education

Robert Leon Acton
Farhat Afzal
Stanley Earle Alberda
B. Betty Anderson
Duane Levere Ash
Jack H. Augustine
Gloria Ann Baker
Betty Jane Bareis
Gretchen Becker
Lynda Joan Berg
Grace Mitchell Blanding
Robert Bruce Bonnett
Gloria Nelleen Bouterse
Helen Campbell Brehm
Ronald Banks Brown
David John Bruinsma
Larry F. Bryant
Judith Kumfer Carr
Richard Arthur Close
Clayton Gerald Dailey
Doris Darwick
Lawrence Ray Davids
Jean Royer Dyer
Jane Elaine Engel
John Robert Fehsenfeld
Henry Feldman
Richard Lee Fitzgerald
Mary Katherine France

David Allen Fuller
Patricia Genevieve Garety
Samuel M. Hall, Jr.
Douglas Lee Hansen
Lila M. Hart
Albert Edwards Holliday
John Lewton Hopkins
John Sherill Hudson
Alice Elizabeth Jones
Joel Jones
Orville N. Kabat
Gay Bender Kahle
James William Kelly
Frank Richard Krajewski
William Alexander Kronberg
Glen Allen Larsen
Larrie James Lininger
Larry Arthur Long
John Robert Martin
Royce Floyd McCarty
Richard Wayne McLaughlin
Clifton Lucas Miel
Paul Warren Miller
June Lillian Mitchener
Etsue Miyagi
John E. Molin
Sardar Muhammad
Paul Edwin Northuis
Howard Michael Oesterle
Patricia Ann Parisian

Duane Daryl Patrick
Emma Mortola Paulino
Sharon Marylyn Rapp
Leta MacHogan Reed
Harold Carl Remus
James Andrew Rice
Clayton Fredric Roth
Robert Ruskin
Janet Ellyn Sampson
Dorothy Plowman Sexton
Mickey Gordon Sinks
Paula Skarstad
Floyd Milton Smith
Harold Risdon Smith
Kathleen Margaret Smith
Norma Wynn Snowden
Claude David Stewart
Marilyn Kay Stickle
Marguerite Ann Stokes
Eva Marie Stroup
Helen Barrone Swartz
Alan James Sweet
Lillian Skadberg Upcraft
Thomas VandenBosch
Susan Flanigan van Page
Wallace William Wier
Lois Quick Williams
Lorraine Avery Windon
Carolyn Ann Winnicki
Susan D. Youd

DEGREE OF
MASTER
OF ARTS

Elementary Education

Nancy Ruth Alden
Joan C. Anderson
Jo Ann Andrews
Carole Inez Benison
Jean Mary Benson
Sherry Beverly Berman
Norma G. Bezrutch
Carol W. Bowen
Rosemary Bolen Bowerman
Vicki Ann Brenner
Brenda Hopkins Bricker
Susan Gay Byington
Nancy Ann Campbell
Ronald Andrew Carmany
Linda F. Chaput
Christy Kay Clymer
Gay Ann Cole
Janet Sue Collon
Donna Jury Cowie

Careene Evalena Craft
Janet Sally Dennis
Muriel June Dickinson
*Nancy Ann Edmonds
*Helen McConnell Eggert
Judith Dianne Erickson
Kathryn Marie Feight
Karen Louise Fenske
Sally Ann Fitzgerald
Joyce Elaine Floyd
Corinne Roberta Foote
*Janet Mitchell Force
Frances Elizabeth Gill
Judith Ann Graham
Laura Jean Happy
Maxine Hardiman
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 Carolsue Nikander
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Speech

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Martha Scott Mampe
Margaret Virginia McKinstry
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*Richard Raymond Benzon
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Elaine Therese Jansson
Bruce Ray Linderman
Linda Jean Patston
Rackeline Joan Perry
*Mary Jane Sack
James Philip Shatto
Stephen Muir Wagner
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Saralee Pearl
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Journalism

Doil Clifton Brown
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Thi Hanh Phung
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Speech

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Cheryl Ann Immel
Caron Bender Kimberly
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Clementine Appoline
Grabowski
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German
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James Alexander Boxall, Jr.

George Abbott Colburn
Ada Jean McDonald
Evangelos of Peter
Sachperoglou

Russian
Jane Elizabeth Knox

Spanish
Sheila Yvonne Carter

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Music Education
Arcola E. Clark

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William Michael Gilmore
Thomas Anthony Grace
Emanuel George Gregory
H*Ingrid Ruth Hart
Margaret Jean Hengel
Constance Bonita
Kominiarek
Christine Anne Kowalski
**Margaret Miller Kurzman
Margaret Jane McCutcheon
Ernest William Pick
Rowland Russell Raymond
Joseph Gerard Severs
Pamela Ann Tice

Art History
Bonnie June Kalmbach

English
H*Patricia Mary Bimesderfer
Richard Danby
Lynn Ferar
*Maureen S. Manning
Leslie Eve Price
Judith Joan Yisowich

*Far Eastern and Russian
Studies*
James Mark Timmins

French
Robertta Yvette Perren

German
H**Else Eleonore Andretz
Herbert Karl Wolbert

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Michael Ronald Cummings
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**David Lynn Klein
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	<i>Philosophy</i> Franklin D. Cordell H**Ronald Preston Phipps William Henry Walker, Jr. Susan Jane Witmer	<i>French</i> *Kathleen Johnson Joan Amelia Reed **Esther Lou Short *Sally Ann Steele *Margaret Anne Walton	<i>Latin</i> H**Carolyn Jean Matzke
	<i>Spanish</i> Mauricio Alberto Alegria Nenad V. Dedich Roberta Matheson Schimm Doris Simmons	<i>German</i> H**Jean Lillian Orvis	<i>Spanish</i> Joan Applegate Sally Lou Bridges *Bettie Rose Lowi
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	<i>Music Therapy</i> Douglas Armstrong Danforth Sylvia M. Staples		

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Mathematics
John Leo Vitelli

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General Science
John Jefferson Jeskey
Bobbie C. Stallcup

Physical Sciences
Edgar J. Baney

Physics and Astronomy
Robert John Wagner

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MASTER
OF SCIENCE

Biological Sciences
Guillermo Coloma Bustos
Luisa Silvia Lemus

Chemistry
Thomas Michael Krigas

Entomology
Donald Albert Snitgen

Geology
Liadiyu Olayinka Asseez
Richard Joseph Blackwell

Robert Frederick Heuser

Mathematics
David Albert Pitassi
James Welling Richards
Madhusudan Chhotalal
Trivedi
Antonio Santiago Villanueva

*Microbiology and Public
Health*
Gary Frank Dardas
Terry Jay Dardas

Physics and Astronomy
Arthur Jared Crandall
Robert Gerald Gergle
Barry Joseph Guinagh
William Frederick Long
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Statistics
Woolcott Keston Smith

Zoology
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Chemistry
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H**John Robert Faulkner
Richard Charles Schwartz
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H*David Arthur Johnson
William Charles Yates

Physiology
Sally Anna Sanford

Zoology
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Theodore Bruce Robinson
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Janne Elmina Eskola
Julie Hitt
David Richard Imig
Gary Robert Kilborn
Douglas Kermit Peterson
Harold Elias Spross
Geraldine Fay Sternberg

Chemistry
Robert Thomas Lake

General Science
Nancy Marie Gerber
Jon Lee Peot

Mathematics
Betty Lea Barks
John Geoffrey Benish
Leroy Gordon Ecker
William Elwood Fry
Fred Henry Heiner
Robert Irving Myers
Daniel Henry Poort
John Robert Quiring
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Judith Alden Richards
Julius Frank Toth
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DEGREE OF MASTER OF ARTS FOR TEACHERS	<i>Social Science</i> Frederick Pearce Cook Robert Louis Mattson		
DEGREE OF MASTER OF SCIENCE	<i>Police Administration and Public Safety</i> Sung Tai Cho Robert Thomas Donovan	Theodore Roy Elzerman John Phillip Klosterman Ping Lee Thomas Henry Milldebrandt Nicholas Rudolph Pugliese	Roger Woods Reinke Ovid E. Roberts, III Mary Jo Schneider George Morrison Small, Jr.

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Kenneth Roy Toole
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Political Science

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John Kenneth Belaski
Ross Lemoine Blanchard
Harriet Ann Dhanak
Charles Darwin Dobias
Stephen Stanley Dobkowski,
Jr.

*Nancy Gayle Draft
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*Irene Alice Lamanen
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Psychology

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*Robert Edward Basch
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Franklyn Webb Jackson
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Edward Richard Rocha

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Eldridge Preston Bolden
James H. Bouchey
James John Calabrese
Miriam McMillan Champion
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Eli Peace Cox, III
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Robert G. (Happy) Fry, Jr.
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William M. Hankins
John Williams Howell
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Thomas Kovachevich
Ben L. Krage
Paul John Krogh
Clyde Keith Mackenzie
Malcolm Lawrence Orme
Richard Harold Osborn
Gordon Brooke Potter
*Tadd Henry Rosa

Rolland Arbor Scott
Gary Morris Sommer
Edward Bernard Stapish, Jr.
Thomas Glenn Sura
*Fredric Alan Sytsma
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Trudie Gertrudis-Maria van
Elmpt
Susan Frances Van Eyck
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Emily Romesa Lacy
Richard Morales
Karen Ann Shagena
Robert Edward Vest, III
H*Elizabeth Wittenbach Zehe

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Jeannette T. Fishman
*David George Lord
Nels Victor Marin, Jr.
H*Jack Wilfred Sattel
*Bonnie McKinlay Schwarze
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Carol Anne Spangenberg
H*Kathryn Ann Whiting

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Landscape Architecture

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Nancy Eileen Shirkey
David Burdette Simmonds
Wayne Eugene Welch
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Joan Arlene Harrison

Sociology

Alfred William Norwood
*Eric Robert Schoen

Urban Planning

E. Owen Donnelly
Robert Harland Hart

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The following students have completed their ROTC Training at Michigan State University and have received their commissions as reserve officers of the United States Air Force or as officers of the United States Army in the branches indicated.

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*Charles Darwin Dobias
LeRoy Gordon Ecker

Douglas Alan Fisher
Hugh Karl Linnemann
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Gerald Lynn Wright

Artillery
Donald Wayne Moore
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Security (Intelligence)*
Phillip Miles Stevens

Corps of Engineers
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