

I. GENERAL DEVELOPMENTS

A. PERSONNEL CHANGES AND DEVELOPMENTS

On sabbatical leave during the spring semester of 1978 were Professors E. Walker, C. Walker, Mandelkern and Gaughan. E. Walker and C. Walker continued their sabbaticals of the fall semester at Colorado State University where C. Walker did research in Abelian groups and E. Walker continued his work on statistics supported by an NSF Science Faculty Professional Development Grant. He concluded the year by earning a master's degree in statistics from Colorado State University. Professor Mandelkern continued his sabbatical leave in doing research in constructive mathematics in England. During the fall semester of 1978, Professors Williams and Swartz were on sabbatical leave while Professors Arnold and Torrez were on leave without pay. Professor Arnold participated with several other outstanding algebraists in an "Algebra Year" at the University of Connecticut in Storrs.

At the beginning of the fall semester 1978, Professors Mary Anne Maher in probability theory and Robin McLeod in numerical analysis joined the regular departmental faculty and surely will add significantly to the quality of the department and the university over the coming years. As visitors during the spring and/or fall semesters of 1978 the department had the pleasure of having Professors J. Chao, M. Chao, M. Frese, S. Frese, Hsieh, Baldwin, Fay and Sylvester.

Professor J. Loustaunau was promoted to associate professor effective with the fall semester, 1978.

B. NEW OR REVISED PROGRAMS

The department instituted a program in numerical analysis that has been under consideration for some time. It is the department's hope that this, together with existing programs and a new commitment to aggressive recruiting of graduate students, will result in its program being more competitive with other institutions in recruiting graduate students. One faculty member, Professor Robin McLeod, has been the initiator and prime mover in establishing an industrial cooperative program with General Telephone and Electronics. This program shows much promise and will be aggressively pursued in the future. Federal support has been sought for this program and, while support was not received this year, it seems quite likely that the department will be among the few chosen to receive federal support in coming years.

Under the direction of Professor Don Johnson, the department has taken steps to remedy the problem of woefully inadequate preparation on the part of entering freshmen. The department is initiating for the fall semester of 1979 a mathematics placement examination program which should have the dual effect of placing students in courses appropriate to their abilities and of upgrading regularly offered mathematics courses. Various groups of deans, associate deans, department heads, and faculty members from assorted colleges have offered a great amount of advice and help with this program. It is expected that this attention to the details of the program will result in a system that will eventually enjoy widespread support and effectively meet the needs for which it was designed.

II. RESEARCH ACTIVITIES

A. RESEARCH PROPOSALS AND GRANTS

Of the 17 research proposals submitted to federal agencies, eight have been funded (\$135,287) and nine are still pending (\$226,074).

B. PUBLICATIONS

In the period January-December 1978, 37 research papers were presented at local, national, and international meetings; 25 research papers were published in recognized journals; and faculty members attended 33 professional meetings.

During the reporting period there were fourteen colloquia given, usually by outside speakers and three week-long colloquium programs given by outstanding, internationally recognized mathematicians in their fields of specialization.

Also during the spring and fall semesters of 1978 there were seminars in 18 different areas of mathematics, each of which usually met on a weekly basis.

III. CRITICAL ANALYSIS AND RECOMMENDATIONS

The problems of the department during the current year and certainly for the next few years are the same as those of the past few years, those being the paucity of qualified applicants to the mathematics graduate program and the severe lack of mathematical preparation on the part of entering freshmen. Under Professor Krueger and his graduate committee, the department has been aggressively recruiting nationwide for qualified applicants. This in conjunction with some innovative steps recently taken by the

Graduate School ought to result in at least a partial solution to the problems in the graduate program. The department has emphasized applied mathematics in general and numerical analysis in particular in the hope of making its program more attractive to prospective students. Of course, one can expect at most partial success inasmuch as it is recruiting from a substantially reduced applicant pool of people interested in doing graduate work in mathematics. This is obviously directly related to the lack of available positions in mathematically related areas in both industry and academia.

As has been mentioned previously, the department has also made an all out attack on the problem of the mathematically ill-prepared entering freshmen. This has been coordinated by Professor Don Johnson and consists primarily of the introduction of mathematical placement examinations and remedial courses in elementary mathematics.

IV. GOALS AND OBJECTIVES

- A. GOAL: The department will strive to maintain continued excellence in research and professional activities.
1. Objective: The department will provide faculty members who are actively involved in mathematical research with the time, encouragement and support services they require for their research.
 2. Objective: The department will sponsor additional "super-colloquia" to provide in-depth contact with experts in various research areas.
 3. Objective: The department will encourage and support research seminars, including interdepartmental seminars to mutually explore areas of applications of mathematics.
 4. Objective: The department will continue to request new faculty positions so active research faculty can be given appropriate released time for research activities without slighting the teaching responsibilities of the department.
- B. GOAL: The department will work to further develop and strengthen the graduate program in mathematics.
1. Objective: The graduate committee of the department plans extensive national advertising in 1979 to attract more qualified applicants to the graduate program in mathematics.

2. Objective: The department will take steps to establish greater communication with mathematicians at White Sands, and will plan sequences of courses, beginning in fall semester 1979, offered at appropriate times to attract these potential students to graduate courses.
 3. Objective: The department will further develop the graduate programs in numerical analysis, applied mathematics and statistics.
 4. Objective: The department will continue to hire visiting faculty primarily on the basis of their potential to further the graduate and research programs, and to effectively teach mathematics.
 5. Objective: The department will continue to request new faculty positions to help develop the graduate programs, particularly those in numerical analysis, applied mathematics and statistics.
- C. GOAL: It is the intention of the Department of Mathematical Sciences to provide the best possible program of service courses.
1. Objective: The department will continue the re-evaluation of the entire undergraduate mathematics curriculum, keeping in mind the needs of the students, the mathematics department and other interested departments.
 2. Objective: The department will do a comprehensive study of calculus texts in fall semester 1979.
 3. Objective: The department will give increased attention to the coordination of the calculus sequence, including giving common midterm and final examinations in MATH 191 and MATH 192 spring and fall semesters of 1979.
 4. Objective: The department will give a mathematics placement examination to most incoming freshmen registering for fall semester 1979, and begin to evaluate the effectiveness of this new placement program.
 5. Objective: The program of remedial and elementary mathematics courses will be extensively revised and expanded by fall semester 1979. Two full time staff members and one or more part time teachers will be hired to help develop and teach the remedial program, in place of the numerous part time instructors hired to teach these courses in the past.

6. Objective: The Mathematics Learning Center will be remodeled in summer 1979 to accommodate the large number of students taking remedial courses.
7. Objective: The department will continue to request new faculty positions to better serve the many undergraduate students who, under present conditions, can be accommodated only in large or very large classes.

I. PERSONNEL ACTIVITIES

A. PROFESSIONAL SERVICE

D. M. Arnold

Reviewer, Mathematical Reviews.

Chairman, College of Arts and Sciences Research Affairs
Committee.

Member, College of Arts and Sciences Council.

Member, departmental committees: Advisory; Faculty Search.

R. J. Bagby

Reviewer, Mathematical Reviews.

Referee, Proceedings of the American Mathematical Society.

Member, Board of Directors, New Mexico State University
Chapter, American Association of University Professors.

Member, departmental committees: Faculty Search; Physical
and Engineering Sciences; Placement Examination Development;
chairman, Graduate.

J. D. DePree

Member, Board of Governors, Pacific Journal of Mathematics.

Referee, Pacific Journal of Mathematics.

Chairman, departmental committees: Advisory; Faculty Search.

E. D. Gaughan

Reviewer, Brooks-Cole Publishing Company.

Chairman, Department Head Search Committee.

Member, departmental committees: Learning Center; Placement
Examination Development; Outside.

J. B. Giever

Member, Faculty Senate.

Member, departmental committees: Advisory; Graduate; Learning
Center; Undergraduate Advising; chairman, Lower Division
Curriculum.

R. H. Hunter

Reviewer, Mathematical Reviews.

Reviewer, Rocky Mountain Journal of Mathematics.

Coach, Mesilla Park Elementary School Soccer Team and Zia
Junior High School Soccer Team.

Member, departmental committees: Mathematics Education;
Computer; Placement Examination Development.

D. G. Johnson

Reviewer, Mathematical Reviews.

Reviewer, Zentralblatt für Mathematik.

Director, Mathematics Learning Center.

Member, President's Committee on College Teaching.
Member, Retention Committee.
Member, Committee to Organize Statewide Conference on
Developmental Education.
Chairman, departmental committees: Colloquium; Outside;
Learning Center; Placement Examination Development.
Member, departmental committees: Mathematics Education; Lower
Division Curriculum; Promotion to Associate Professor and
Tenure; Promotion to Full Professor; Comprehensive Examina-
tions.

D. J. Johnson

Referee, Journal of Approximation Theory.
Reviewer, Mathematical Reviews.
Director, Mathematics Reading Room.
Member, departmental committees: Library; Undergraduate.

W. H. Julian

Reviewer, grant proposal for National Science Foundation.
Reviewer, Mathematical Reviews.
Member, Rio Grande Historical Collections.
Member, departmental committees: Biological and Social
Sciences; chairman, Reading Room.

J. E. Kist

Reviewer, Mathematical Reviews.
Reviewer, Zentralblatt für Mathematik.
Member, Department Head Search Committee.
Member, departmental committees: Advisory; Faculty Search;
Graduate; Comprehensive Examinations.

R. A. Knoebel

Reviewer, Mathematical Reviews.
Member, departmental committees: Computer; Undergraduate
Advising; chairman, Biological and Social Sciences.

W. M. Krueger

Reviewer, Zentralblatt für Mathematik.
Member, Department Head Search Committee.
Member, departmental committees: Undergraduate; Undergraduate
Advising; Advisory; Mathematics Education; Comprehensive
Examinations; Lower Division Curriculum; chairman, Graduate;
chairman, Promotion to Associate Professor and Tenure.

A. H. Kruse

Reviewer, Mathematical Reviews.
Reviewer, Zentralblatt für Mathematik.
Member, departmental committee: Faculty Search.

J. O. Loustaunau

Lecturer, University of Chihuahua, Interim Session, Series of ten lectures in linear programming to students and faculty of M.S. program in Animal Science.

Lecturer, University of Chihuahua, Interim Session, Series of three lectures in optimization techniques to faculty in School of Engineering.

Member, Board of Directors, Las Cruces Girls' and Boys' Club.
Member, Board of Directors, Dona Ana Chapter, American Red Cross.

Chairman of Agencies, United Way.

Chairman, College of Arts and Sciences Student Appeals Board.

Member, College of Arts and Sciences Student Relations and Improvement of Instruction Committee.

Member, departmental committees: Undergraduate Advising; chairman, Physical and Engineering Sciences.

R. J. Y. McLeod

Reviewer, Mathematical Reviews.

Organizer, university-industry links with Boeing Aircraft Corporation and National Cash Register Company.

Member, departmental committee: Physical and Engineering Sciences.

B. MacKichan

Reviewer, Mathematical Reviews.

Referee, Rocky Mountain Journal of Mathematics.

Member, Department Head Search Committee.

Member, departmental committees: Colloquium; Lower Division Curriculum; Graduate; Comprehensive Examinations; Placement Examination Development.

M. A. Maher

Co-chairman, Program and Arrangements for Harvard-Yale Statistics Day.

Reader, Ph.D. thesis review, Graduate School, Yale University.

Reviewer, four thesis proposals for third-year graduate students, Yale University.

Advisor, graduate and undergraduate students, Yale University.

R. Mines

Reviewer, Mathematical Reviews.

Advisor, Putnam Team.

Faculty advisor, Pi Mu Epsilon.

Organizer, two special sessions on constructive mathematics for the American Mathematical Society Annual Meeting.

Member, Faculty Senate.

Member, Committee of 8 for Task Force '88.

Member, College of Arts and Sciences B.I.S. Committee.

Member, College of Arts and Sciences Faculty Affairs
Committee.

Member, departmental committees: chairman, Undergraduate;
Statistics; Faculty Search; Placement Examination Develop-
ment; Lower Division Curriculum.

K. L. Phillips

Chairman, College of Arts and Sciences Planning Committee.
Member, departmental committees: Graduate; Advisory; Place-
ment Examination Development.

F. Richman

Organizer, two special sessions in constructive mathematics
for the American Mathematical Society Annual Meeting.

Referee, Proceedings of the American Mathematical Society.

Referee, Rocky Mountain Journal of Mathematics.

Member, Graduate Council.

Member, departmental committees: Mathematics Education;
Graduate; Advisory.

G. S. Rogers

Reviewer for examinations, New Hampshire Statistics Project.

Referee, Communications in Statistics.

Referee, Journal of the American Statistical Association.

Member, Statistics Center Committee.

Advisor, Arts and Sciences Advising Center.

Member, departmental committees: chairman, Undergraduate
Advising; chairman, Statistics; Learning Center; alternate,
Advisory.

C. C. Sherman

Member, departmental committee: Undergraduate.

C. W. Swartz

Reviewer, Mathematical Reviews.

Reviewer, Zentralblatt für Mathematik.

Departmental representative, Rocky Mountain Mathematics
Consortium.

Member, NMSU Golf Team.

Member, departmental committees: chairman, Physical and
Engineering Sciences; Comprehensive Examinations.

J. D. Thomas

Reviewer, Zentralblatt für Mathematik.

Faculty advisor, Alpha Tau Omega Fraternity.

Director, intercollegiate regional bridge tournament,
NMSU Bridge Club.

Chairman, Computer Advisory Group.

Chairman, College of Arts and Sciences Curriculum Committee.

Member, departmental committees: Advisory; chairman, Computer; Lower Division Curriculum; Undergraduate Advising; Faculty Search.

W. C. Torrez

Member, departmental committee: Statistics.

I. E. Vance

National Science Foundation Short Course, Mathematics Avoidance and Anxiety, October and March, Santa Ana College.

Vice-President for Universities, New Mexico Council of Teachers of Mathematics.

Project Director, National Science Foundation program for training in-service teachers of mathematics.

Member, planning committee for annual conference of New Mexico Council of Teachers of Mathematics to be held in Taos.

Member, planning committee for National Council of Teachers of Mathematics meeting to be held in Albuquerque.

Consultant, Workshop for Elementary School, Hatch Public Schools.

Consultant, Workshop for Teachers of Summer Remedial Programs in Mathematics, Las Cruces Public Schools.

Consultant, Workshop for Mathematics Teachers, El Paso Public Schools.

Consultant, Workshop for Junior High School Mathematics Teachers, Ysleta Public Schools.

Consultant, Appalachia Educational Laboratory.

Reader, 1978 Advanced Placement Examination in Mathematics, Educational Testing System.

Chairman, Board of Directors of Development of Research and Human Services (DORAHS).

Member, Board of Directors, National Association for the Advancement of Colored People.

Participant in fund raising programs, Sickle Cell Foundation of New Mexico.

Member, Minority Center for Graduate Education in Science and Engineering Planning Grant Committee.

Advisor, Black Programs.

Advisor, Black Students.

Member, departmental committees: chairman, Mathematics Education; alternate, Advisory.

C. L. Walker

Reviewer, Mathematical Reviews.

Referee, Illinois Journal of Mathematics.

Referee, Rocky Mountain Journal of Mathematics.

Member, departmental committees: Biological and Social Sciences; Undergraduate Advising; chairman, Promotion to Full Professor.

E. A. Walker

Reviewer, Mathematical Reviews.
Reviewer, Zentralblatt für Mathematik.
Referee, National Science Foundation research proposals.
Member, Graduate Council.
Member, departmental committee: Statistics.

F. D. Williams

Member, College of Arts and Sciences Faculty Affairs
Committee.
Faculty sponsor, Sigma Alpha Epsilon Fraternity.
Treasurer, New Mexico Aquatic Club.
Member, departmental committees: Physical and Engineering
Sciences; Faculty Search; Undergraduate Advising.

R. J. Wisner

Consulting Editor in Mathematics, Contemporary Undergraduate
Mathematics Series, Brooks-Cole Publishing Company.
Panel member, Conference on Graduate Education in the Mathe-
matical Sciences, meeting-by-invitation of the Rocky
Mountain Mathematics Consortium, Arizona State University.
Presider of talk and panel discussion on Computers in the
Classroom, National Council of Teachers of Mathematics
Annual Meeting, San Diego, Calif.
Mathematics Consultant, U.S.O.E. grant to Ysleta Independent
School District for the educationally disadvantaged.
Trustee, Ralph Crouch Memorial Scholarship Fund.
Participant, planning meeting for annual Conference on
Excellence in Teaching at NMSU, Committee of 88.

J. D. Zund

Reviewer, Mathematical Reviews.
Reviewer, Zentralblatt für Mathematik.
Referee, Annali di Matematica Pura ed Applicata.
Referee, Journal of the Australian Mathematical Society.
Referee, Journal of Mathematical Physics.
Referee, Physical Review Letters.
Referee, Rocky Mountain Journal of Mathematics.
Member, University Advisory Council on Library Policy.
Member, departmental committees: Library; Promotion to
Associate Professor and Tenure.

B. PROFESSIONAL MEETINGS ATTENDED

D. M. Arnold

American Mathematical Society Annual Meeting, Atlanta, Ga.
American Mathematical Society Symposium on Combinatorial
Mathematics and Optimal Design, Fort Collins, Colo.

R. J. Bagby

Conference on Graduate Education in the Mathematical Sciences,
Tempe, Ariz.
Southwestern Regional Section of the Mathematical Association
of America, Socorro, N. Mex.
American Mathematical Society Summer Institute, Williamstown,
Mass.

J. D. DePree

American Mathematical Society Regional Meeting, San Francisco.

E. D. Gaughan

Conducted workshop at National Council of Teachers of Mathe-
matics Regional Meeting, San Antonio, Tex.
National Council of Teachers of Mathematics Annual Meeting,
San Diego, Calif.

R. H. Hunter

Science and Mathematical Education Through New Technologies
Conference, Salt Lake City.

D. G. Johnson

National Council of Teachers of Mathematics Annual Meeting,
San Diego, Calif.
State-Wide Retention Meeting, Las Cruces.

D. J. Johnson

Invited participant, National Science Foundation Summer Work-
shop on Applications of Complex Manifold Techniques to
Problems in Theoretical Physics, University of Kansas,
Lawrence.
Invited participant, National Science Foundation-Conference
Board of the Mathematical Sciences Regional Conference on
Mathematical Foundations of Thermodynamics, Ball State
University, Muncie, Ind.

W. M. Krueger

3rd Oxford Symposium on Topology, Oxford, England.

M. A. Maher

International Congress of Mathematicians, Helsinki, Finland.
Harvard-Yale Statistics Day, Harvard School of Public Health,
Boston, Mass.

R. Mines

American Mathematical Society Regional Meeting, Houston, Tex.

K. L. Phillips

1978 Summer Institute on Harmonic Analysis in Euclidean Spaces
and Related Topics, Williamstown, Mass.

F. Richman

American Mathematical Society Annual Meeting, Atlanta, Ga.

G. S. Rogers

Southwestern Regional Section of the Mathematical Association
of America, Socorro, N. Mex.

Joint meetings of the Institute of Mathematical Statistics and
American Statistical Association, San Diego, Calif.

C. C. Sherman

American Mathematical Society Annual Meeting, Atlanta, Ga.
Conference in Ring Theory, University of Waterloo, Ontario,
Canada.

C. W. Swartz

American Mathematical Society Annual Meeting, Atlanta, Ga.
Rocky Mountain Mathematics Consortium, Atlanta, Ga.

I. E. Vance

National Council of Teachers of Mathematics Annual Meeting,
San Diego, Calif.

El Paso Council of Teachers of Mathematics, El Paso, Tex.

C. L. Walker

Western Council of Graduate Deans, Albuquerque, N. Mex.

National Council of Teachers of Mathematics Regional Meeting,
Colorado Springs, Colo.

Representation Theory for Infinite Groups, 1978 John H.
Barrett Memorial Lecture Series, University of Tennessee,
Knoxville.

E. A. Walker

Joint meetings of the Mathematical Association of America and
American Mathematical Society, Atlanta, Ga.

American Statistical Association Annual Meeting, San Diego.

American Mathematical Society Regional Meeting, Houston, Tex.

4th Department of Energy Statistical Symposium, Albuquerque.

R. J. Wisner

American Mathematical Society and Mathematical Association of
America Annual Meetings, Atlanta.

II. SCHOLARSHIPS AND FELLOWSHIPS

A. UNDERGRADUATE SCHOLARSHIPS

Physical Science Laboratory Scholarships for incoming freshmen, to
 Laura Henry, Leslie Boykin, Timothy Gallus,
 Sabrina LaPlante, \$500 each 4

B. GRADUATE FELLOWSHIPS

Physical Sciences Laboratory Graduate Fellowship
 awarded to Donald P. Murphy 1

III. GRANTS AND PROPOSALS

	Grants Funded		Grants Pending	
	Agency	Value	Agency	Value
Bagby, R.			NSF	\$ 9,953
Hunter, R.	NSF	\$ 13,700		
Johnson, D.J.			NSF	21,387
McLeod, R.	RC-Mini	1,750		
McLeod, R.			NSF	20,000
MacKichan, B.			NSF	20,525
Mandelkern, M.			NSF	31,725
Phillips, K.			NSF	26,121
Sherman, C.	NSF	13,788		
Sherman, C.			NSF	14,374
Torrez, W.	HEW/PHS	4,833		
Torrez, W.	NCCHE	10,000		
Vance, I.	NSF	36,473		
Vance, I.			NSF	45,991
Walker, E.	NSF	26,130		
Walker, E. (with Arnold, D., Richman, F.)	NSF	28,613		
Walker, E. (with Arnold, D., Richman, F.)			NSF	36,000

IV. RESEARCH PAPERS PUBLISHED

Arnold, D. M., O'Brien, B. and Reid, J., Quasi-pure injective and projective torsion free Abelian groups of finite rank.
Proc. London Math. Soc., 1978, 38 (3).

- Hunter, R., Richman, F. and Walker, E. A., Existence theorems for Warfield modules. Trans. Amer. Math. Soc., 1978, 235, 345-362.
- Julian, W. H., Mines, R. and Richman, F., Algebraic numbers, a constructive development. Pacific J. Math., 1978, 74, 91-102.
- Knoebel, R. A., Further conclusions on functional completeness. Fund. Math., 1978, 99, 92-112.
- Knoebel, R. A., Axioms for diagrams and categories. Notices Amer. Math. Soc., 1977, 24-2, A-234.
- McLeod, R. J. Y., High order transformation methods for curved finite elements. J. Inst. Math. Appl., 1978, 21, 419-428.
- MacKichan, B. and Hill, C. D., Hyperfunction cohomology classes and their boundary value problems. Ann. Scuola Norm. Sup. Pisa, 1977, 4 (4), 577-597.
- Maher, M. A., Exponential supermartingales and recurrence criteria for d-dimensional Markov chains. Bull. Inst. Math. Statist., 1978, 7 (5).
- Mines, R., cf. Julian, W. H.
- Mines, R., A new completion functor. Springer-Verlag Lecture Notes in Mathematics, 1977, 616, 392,398.
- Richman, F., cf. Hunter, R. H.
- Richman, F., cf. Julian, W. H.
- Rogers, G. S. and Young, D., On testing a multivariate linear hypothesis, J. Amer. Statist. Assoc., 1978, 73, 203-207.
- Rogers, G. S. and Young, D., On a singular distribution related to the normal. Sankya, 1978.
- Sherman, C. C., The K-theory of an equicharacteristic discrete valuation ring injects into the K-theory of its field of quotients. Pacific J. Math., 1978.
- Thomas, J. D. and Shepherd, W. L., Half-fast fourier transforms. Advanced Technology Office, WSMR, 1978.
- Torrez, W. C., The birth and death chain in a random environment: instability and extinction theorems. Ann. Probability, 1978.
- Vance, I. E., Geoboard Activities. New Mexico Council of Teachers of Mathematics, November, 1978.
- Walker, E. A., cf. Hunter, R. H.
- Zund, J. D., Electromagnetic theory in general relativity V: the vector potential. Tensor N. S., 1977, 31, 301-306.
- Zund, J. D. and Harris, R. A., Multi-variable Kasner type solutions of the source-free Einstein equations. Tensor N. S., 1978, 32, 39-44.
- Zund, J. D. and Harris, R. A., An investigation of Dubourdieu's list of space-times which admit holonomy groups. J. Math. Phys., 1978, 19, 2052-2054.
- Zund, J. D. and Harris, R. A., An algorithm for the Bel-Petrov classification of gravitational fields. Comm. Assoc. Comput. Mach., 1978, 21, 715-717.
- Zund, J. D. and Harris, R. A., A curious solution of Einstein's cosmological equations. Tensor N. S., 1978, 32, 170-172.

- Zund, J. D. and Wilkes, J. M., A note on the Ruse-Lanczos identity.
Tensor N. S., 1978, 32.
- Zund, J. D., Sur l'espace-temps de Hauser en relativité générale.
Comptes Rendus Acad. Sci. (Paris), 1978, 296 Ser A.

V. RESEARCH PAPERS PRESENTED

- Bagby, R. J., "Taylor Polynomials and Difference Quotients,"
Southwestern Section of the Mathematical Association of
America, Tucson.
- Hunter, R. H., "A Global Version of Azumaya's Theorem," Convegno
Gruppi Abeliani y Loro Relazioni con la Teoria dei Moduli,
Rome, Italy.
- Hunter, R. H., "Bent Lines and Shrinking People," Pi Mu Epsilon,
New Mexico State University, Las Cruces.
- Julian, W. H., "Black Holes," Pi Mu Epsilon, New Mexico State
University, Las Cruces.
- Knoebel, R. A., "Exponentials Reiterated," Mathematical Association
of America Regional Meeting, Socorro, N. Mex.
- Knoebel, R. A., "Equational Classes Generated by Single Finite,
Functionally Pre-complete Algebras," American Mathematical
Society Regional Meeting, Claremont, Calif.
- Kruse, A. H., "Natural Resolutions of Nested Families of Souslyn
Representations: A Revisitation of Some Classical Theorems
on Analytic Sets," invited talk, Symposium on General Topology
and Its Applications, New Delhi, India.
- MacKichan, B., "Mayer-Vietoris Sequences for Complexes of
Differential Operators," invited address, University of
Illinois, Champaign-Urbana.
- MacKichan, B., "Unique Continuation for the Tangential Cauchy-
Riemann Equations," invited address at Special Session on
Partial Differential Equations, American Mathematical Society
Summer Meeting, Providence, R. I.
- MacKichan, B., "Properties of Solutions of the Tangential Cauchy-
Riemann Equations," New Mexico State University, Las Cruces.
- Maher, M. A., "Probability Theory From 1920 to 1970: Fifty Years
of Growth," Pi Mu Epsilon, St. Peter's College, Jersey City.
- Maher, M. A., "How do Random Number Generators Work?" Pi Mu
Epsilon, New Mexico State University, Las Cruces.
- Mandelkern, M., "Constructive Analysis," joint colloquium,
University of Athens and Greek Mathematical Society, Athens,
Greece.
- Mines, R., "Model Induced Triples and Completions of Abelian
Groups," Convegno Gruppi Abeliani y Loro Relazioni con la
Teoria dei Moduli, Rome, Italy.
- Phillips, K. L., "Homogeneity Structure of Distributions on Local
Fields," Commutative Harmonic Analysis 757th Meeting, Eugene,
Ore.

- Richman, F., "A Global Azumaya Theorem," American Mathematical Society Regional Meeting, New York, N.Y.
- Rogers, G. S., "Pitfalls and Problems of Developing and Using Slide Tape Materials," American Statistical Association Annual Meeting, San Diego.
- Sherman, C. C., "K-cohomology of Regular Schemes and Gersten's Conjecture for Arithmetic Surfaces," mini-conference in conjunction with John Barrett Memorial Lectures, University of Tennessee, Knoxville.
- Sylvester, G. S., "Vector Griffiths Inequality," American Mathematical Society Regional Meeting, New York, N.Y.
- Thomas, J. D., Sargent, M. and Swartner, W. H., "Effects of Spatial Hole Burning on Distributed Feedback Laser Operation," 10th International Quantum Electronics Conference, Atlanta.
- Torrez, W. C., Duran, H. and Sanchez, M., "Selection Pressures on Genetic Fluctuations with Random Environmental Factors," Southwestern Minority Biomedical Society Symposium, Socorro.
- Torrez, W. C., Duran, H. and Sanchez, M., "A Birth and Death Selection Model in Constant Environment," National Minority Biomedical Society Symposium, Atlanta, Ga.
- Torrez, W. C., "The effect of Random Selective Intensities on Fixation Probabilities," International Statistical Ecology Program, Jerusalem, Israel.
- Vance, I. E., "Math Graffiti," National Council of Teachers of Mathematics, San Antonio, Tex.
- Vance, I. E., "Slopes, Squares, Square Roots, Irrationals, and the Pythagorean Theorem," New Mexico Council of Teachers of Mathematics Annual Conference, Albuquerque, N. Mex.
- Vance, I. E., "Is There Life for a Secondary Mathematics Teacher After APL, MAU, NACOME, NAS, SI, SAT and SMSG?" Illinois Council of Teachers of Mathematics Northeastern Regional Conference, Chicago.
- Vance, I. E., "Trends in Mathematics Education," Ysleta Independent School District Mathematics Teachers In-Service, El Paso.
- Vance, I. E., "Major Trends in the Learning and Teaching of Mathematics," Conference for the Advancement of Mathematics Teaching, Austin, Tex.
- Vance, I. E., "Dealing with the Basic Problems of Teaching the 'Basics' in Mathematics," El Paso Council of Teachers of Mathematics, El Paso.
- Walker, C. L., "Unique Decomposition and Isomorphic Refinement Theorems in Additive Categories," Colorado State University, Fort Collins.
- Walker, C. L., "Unique Decomposition and Isomorphic Refinement Theorems, in Additive Categories," Special Session on Direct Sums Representations of Rings and Modules, American Mathematical Society Annual Meeting, Atlanta, Ga.
- Wisner, R. J., "Recursive Fractional Properties," National Council of Teachers of Mathematics, San Antonio, Tex.

- Wisner, R. J., "Fractional Approximations to Square Roots,"
National Council of Teachers of Mathematics, Missoula, Mont.
- Wisner, R. J., "Almost Everyone is Exceptional," National Council
of Teachers of Mathematics, Missoula, Mont.
- Wisner, R. J., "The First-Born Syndrome," Conference for the
Advancement of Mathematics Teaching, Austin, Tex.