JOURNAL OF OPTOMETRIC EDUCATION

Volume 6, Number 3
Winter, 1981

A Special UAB Study

Rural Optometry

The Need for a Different Approach

ASSOCIATION of SCHOOLS and COLLEGES of OPTOMETRY

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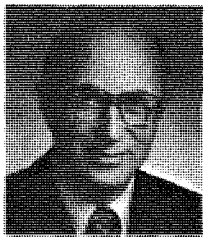

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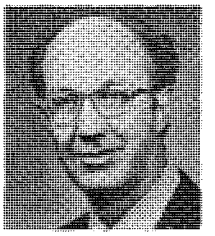

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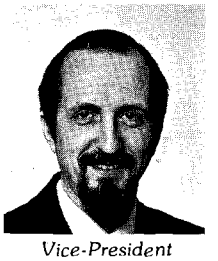

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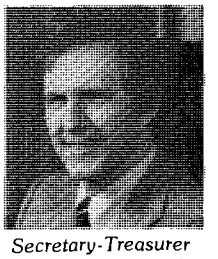

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Table of Contents
Winter, 1981
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JOURNAL OF OPTOMETRIC EDUCATION

Official Publication of the Association of Schools and Colleges of Optometry

DEPARTMENTS

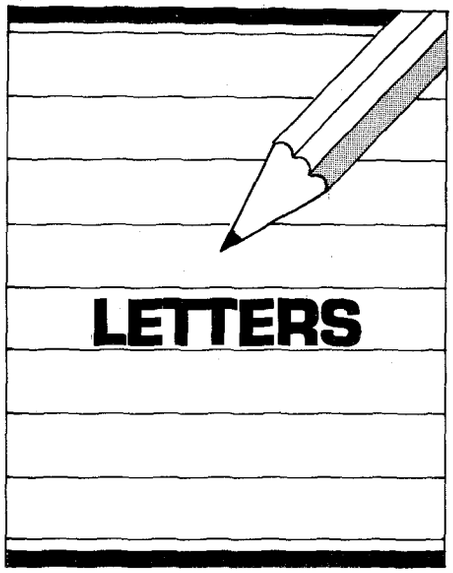
READER SURVEY

This issue contains the reader survey announced in our fall issue. Please fill out the questionnaire in the center section and mail it to our office by April 30, 1981. Returns will be kept strictly confidential and will provide us with valuable data for meeting readers' needs and informing prospective advertisers. No postage is necessary. Results will be published in an upcoming issue.

Thank you for your assistance.

Cover Design: Dan Hildt *Graphics: Dagmar Painter* *Composition: Bobbie Peters Graphics, Inc.*

The **JOURNAL OF OPTOMETRIC EDUCATION** is published by the Association of Schools and Colleges of Optometry (ASCO). **Managing Editor:** Harriet E. Long. **Art Director:** Dan Hildt. Graphics in General. Business and editorial offices are located at 1730 M Street, N.W., Suite 210, Washington, D.C. 20036. **Subscriptions: JOE** is published quarterly and distributed at no charge to dues paying members of ASCO. Individual subscriptions are available at $10.00 per year, $15.00 per year to foreign subscribers. Postage paid for a non-profit, tax exempt organization at Washington, D.C. Advertising rates are available upon request.



Appreciates JOE

First of all, I want to tell you how much I enjoy the *Journal of Optometric Education.* The articles are so educational, and the material is excellent. I save all copies, and when they arrive I always think of the week we spent attending the Mini-Optometry Course at the Southern California College of Optometry in 1979.

During the holidays, the fall issue arrived, and I was just delighted to find that you had included the article, "Pharmacy and Optometry: An Opportunity for Cooperation." Another survey is planned and I imagine a follow up article will be done by midyear. Would it be possible to obtain three or four extra copies of the latest issue? If so, please advise.

I feel that you are deserving of the honors received by the *Journal.* I would like to congratulate the members of your staff, the editorial board and the board of directors.

Helen St. Clair
Executive Director
Mississippi Optometric Association

Radial Keratotomy

In the last year, radial keratotomy has received widespread attention as a cure for myopia. Studies to evaluate the benefits and risks of this surgical procedure in animals and humans are underway, and new research grant applications have been submitted to the National Eye Institute (NEI). These studies are needed to determine how effective radial keratotomy is in correcting myopia and to evaluate the safety of the procedure, including its short and long-term effects.

The National Advisory Eye Council is the principal advisory group to the NEI. In order to discharge its responsibilities to the American public and to the scientific and health care community, the Council needs as much information as possible about the safety of radial keratotomy in humans. Consequently, we are urging all optometrists to share whatever information they may have about eye problems that have resulted from this surgical procedure. In addition to complications of the operation itself, we would like to know if any secondary problems, such as ocular rupture or perforation, have occurred in individuals who have undergone radial keratotomy. If your patients have experienced, or if you have been consulted about, such problems, please write the Council immediately in care of its Executive Secretary, Ronald G. Geller, Ph.D., National Eye Institute, Building 31, Room 6A04, National Institutes of Health, Bethesda, Maryland 20205.

National Advisory Eye Council:
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Thomas D. Duane, M.D., Ph.D.
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ANNOUNCEMENT

On October 22, 1979, this Board gave notice that after the year 1981, the Kentucky Board of Optometric Examiners might no longer be giving written examinations.

Now we are giving notice that in 1982, the Kentucky Board of Optometric Examiners will not be giving written examinations and applicants for license will be required to take the National Board Examinations.

For further information, contact: Eunice P. Gersh, Administrative Secretary, Board of Optometric Examiners, 1706 Sutherland Drive, Louisville, Kentucky 40205, (502) 588-4695

CLASSIFIED ADVERTISING

Post Doctoral Clinical Fellowship Program Illinois College of Optometry

The Illinois College of Optometry initiated a Post Doctoral Clinical Fellowship Program September 1, 1978. The purpose of this program is primarily to prepare recent graduates from any accredited school or college of optometry in the United States and Canada for careers in optometric education, and secondarily to provide advanced experience in specialty areas of optometry. Emphasis is placed on scholarly pursuits, developing clinical, laboratory, and didactic instructional skills, and direct patient care. Applicants should have strong academic and clinical backgrounds. Appointments will begin on or about August 1, 1981. A complete position description is available upon request.

For further information, contact:
Anthony Nizza, O.D., F.A.A.O.
Director of Fellowship Program
Illinois College of Optometry
3241 South Michigan Avenue
Chicago, Illinois 60616
Phone: 312/225-1700 Ext. 472

Faculty Positions Available Northeastern State University College of Optometry

Fulltime faculty positions are available in the areas of vision therapy—diagnosis and treatment, clinical methods, contact lenses, pathology, vision rehabilitation, genetics and preventive vision care, vision science, and clinical instruction.

Academic qualifications desired are O.D., or O.D. with advanced degree in vision, or related, science, or Ph.D. in vision, or related, science.

Teaching and clinical experience are desired. Particular emphasis will be placed on applicant's depth of background, dedication to teaching, and performance in the classroom, laboratory, and clinic. Salary and rank are dependent on qualifications.

Send curriculum vitae and the names of three references to: Personnel Services, Northeastern State University, Tahlequah, Oklahoma 74464. An equal opportunity/affirmative action employer.

Evaluating Optometric Education

In 1914 the Carnegie Commission released the report of a study of medical education which shocked the nation.* The investigation was conducted by Abraham Flexner, a noted sociologist. His conclusion was that, with a few exceptions which he recommended as models, medical education in the United States was poorly conceived and miserably implemented; without reasonable standards; and its effect on the nation's health an outrage. The response was swift and extensive. Many schools were closed; the "model" schools (among which were Harvard, Johns Hopkins, and Stanford medical schools) took leadership in constructing curricula and setting standards for medical education. The curriculum and the standards that emerged were imposed quickly and effectively. From that time an increasing proportion of our resources allocated to higher education have been invested in the education and training of (allopathic) physicians.

Prior to the Flexner report experimental research was little emphasized within medical schools, nor its results applied. Empiricism and clinical impressions constituted the didactic information base and clinical skill was acquired by apprenticeship after graduation. Following the Flexner report biological sciences became the didactic knowledge base and preceptorship the form of clinical training (the latter strongly influenced the movement toward specialization certification, which developed soon thereafter). The two major treatment forms that emerged were chemotherapy and surgery. What could not be verified by experiment became anathema. Since then, greater and greater emphasis has been placed on acquiring knowledge which enhances the application of these treatment forms. Until recently the basis for the medical school curriculum, medical research, and physician practice has been application of experimentally verified procedures—derived from biomedical research—which counteract disease processes. Too little regard has been paid to the disease-producing effects of these procedures (side effects and iatrogenic disease) or to maintenance of health, and far too little concern has been given within the walls of medical schools to investigations into those aspects of health and disease that are related to behavior and to attitudes.

This is the legacy of the Flexner report: medical education, less than a century ago virtually isolated from the university, now often dominates its resources. Once essentially empirical, it is now essentially formalized learning of the latest (verifiable) experimental results from biological investigations.

Medical educators are just now critically examining again the form and substance of medical education. They are almost certain to emphasize new dimensions in a new curriculum. Indeed, new units of study in humanistic medicine, physician induced illness, and health maintenance are being created. One view is that the post-Flexner model is so fixed in its programming, its progeny so intransigent and their influence so pervasive that needed changes will not be made. Another view is that the total competence and level of learning required to encompass all knowledge disciplines related to health and disease is far beyond the range of one practitioner or one applied discipline. This would lead not only to new courses but to varied curricula designed to produce medical school graduates with a variety of formalized competencies.

What is the message of the foregoing for optometry? Our profession looked candidly and critically at its schools less than a decade after the Flexner report. Many private entrepreneurial schools were closed. However, no profession-wide standards were imposed or even established; no consensus was sought or achieved concerning what should constitute a curriculum in optometry; no characteristics emerged defining optometric practice for graduates of all schools; and no great dependency on experimental evidence developed. Clinical experience ("clinical hunches") is sometimes extolled by members of optometric faculties as superior to experimental evidence. Those optometrists who take graduate degrees even though they may continue to practice optometry, are sometimes viewed as impractical or not to be trusted to have the special insight that (often uninformed) experience provides. Too often we have a distrust for research as well as an inability to generate directly usable research.

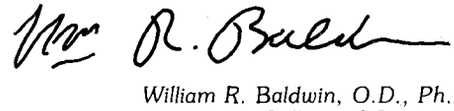
Some optometric institutions have grown out of academic units in universities. Most of these have strong interest in research (along with some competency). These schools provide most of the sparse research which emanates from optometry. However their interests have tended to focus on those areas in which neat experimental designs can be developed. Research is therefore focused on physics and biology. While these institutions produce educational results that fulfill their educational objectives more clearly than others, they would limit their practitioners to the application of verifiable information derived from experiment—the medical model. Do those schools which grew out of non-academic environments and which, as a group, have less research capability exhibit the same tendencies? I think not. They tend to speak of strong clinical programs, to distrust researchers, to depend on and to teach "recipes for success." They more often are empiricists. They have been led easily to proclaim a wider role for optometry and to adopt greater expanded educational objectives than they can fulfill.

The appropriate comparison with medical education is that we have adopted the medical model of application of verifiable experiment in some schools and maintained the empiricist's "clinical wisdom" model in others. Therein lies an advantage—if we see it! There is now some mix of science (verification) and clinical (insight) orientation in almost all optometry schools. Many individuals have an awareness of the strengths and weaknesses of both approaches when isolated. By a valid and candid study undertaken now of what the form and substance of optometric education should be, I believe we can avoid the negatives of the Flexner legacy while making its positives more broadly applied. When we have done this we can justify broader educational objectives and produce that most competent of clinicians—those who understand the evidence of experiment relevant to their discipline so well that not only can they apply this knowledge effectively but they can make excellent guesses in the solutions of problems about which knowledge is sufficient to supply us with a decision all can know and use.

Good clinicians not only understand well what is known, they also guess exceedingly well. Since both research and guesswork may stray equally far from truth, neither is innately superior in its application to the solution of human problems.

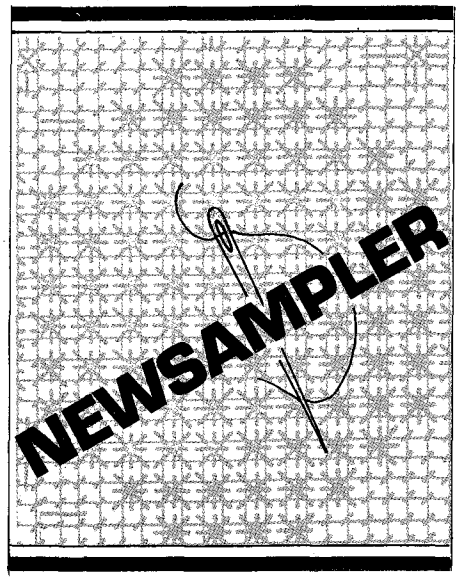
We do not now fulfill (but we can if we have the will) these purposes for all optometric education: to produce graduates (who are scientist-clinicians, i.e.) who understand knowledge that is useful to our discipline, thirst for and acquire new knowledge as it develops, aggressively attempt to discover and solve their patient's problems even though applicable knowledge does not exist, and who care deeply for the welfare of every patient.

If we can lay aside the mutual distrust between the scientist and the clinician and our profession's anticlivity for self-criticism, we can take a great stride now by commissioning an outside expert to study the substance and the goals of optometric education. Optometry's "Flexner study" would serve the public and the profession well and should not be delayed. □



William R. Baldwin, O.D., Ph.D.
Dean, College of Optometry
University of Houston

*Flexner, Abraham. Medical Education in the United States and Canada. A Report to the Carnegie Foundation for the Advancement of Teaching. New York: Carnegie Foundation for the Advancement of Teaching, 1910.



SUNY Professor Named Skeffington Winner

For the second year in a row, a professor at the State University of New York (SUNY), State College of Optometry, was recognized by the 900-member College of Optometrists in Vision Development with its highest honor, the A.M. Skeffington Award for "Excellence in Optometric Writing." Dr. Martin Birnbaum, 1979 recipient, made the presentation to Dr. Elliott B. Forrest at the annual awards luncheon which was held this year on November 19th in New Orleans. Dr. Forrest's selection was loudly applauded by the packed audience of over 300 professionals who were present.

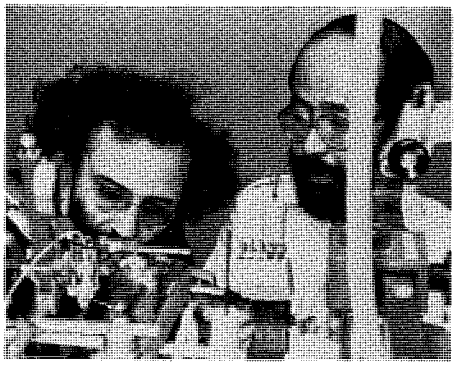
Dr. Forrest, an associate clinical professor of optometry, is co-director of the Infants Vision Clinic at the University Optometric Center, the college's clinical facility. Over the course of the past twenty years, Dr. Forrest has published 31 major papers and books. These include a 15 part series on philosophy of vision in *Optometric Weekly*, a two-year series on "A Psychobiology of Visual Behavior" published by the Optometric Extension Program Foundation, an 81-page paper on visual function published by Special Child Publication, and numerous educational tape cassettes on infant vision and visual function.

ICO Awarded Research Grant

Research that may lead to an earlier and better treatment for strabismus has brought two associate professors at the Illinois College of Optometry a research grant of more than $100,000.

The principal investigator, Dr. Yuzo M. Chino, associate professor of neurosciences, and co-investigator Dr. Michael S. Shansky, associate professor of visual science, were awarded the three-year grant for their research on strabismus (commonly called crossed eyes) in cats. The grant was awarded ICO by the National Eye Institute of the National Institutes of Health.

The research, says Dr. Chino, investigates the primary effects of strabismus on the central nervous system. By using data from both Siamese cats and cats with surgically induced strabismus, the two researchers hope to separate the environmental and the genetic factors involved in strabismus. That could eventually result, says Dr. Chino, in a more effective prevention and treatment of strabismus.



Dr. Michael Shansky (left) and Dr. Yuzo Chino work at the strabismus research that brought them and ICO more than $100,000 in grants.

Pacific Receives Gates Award

For the second consecutive year a Pacific University College of Optometry professor and his students have received the Gates Award for the best research in orthokeratology during the year.

Orthokeratology is the fitting of contact lenses on the eye to attempt to reduce nearsightedness or farsightedness. The Gates Award is made annually by the International Orthokeratology Society. Pacific received the award in both 1979 and 1980.

Dr. Lynn J. Coon, assistant professor of optometry, accepted the award at a recent meeting of the International Orthokeratology Society in Orlando, Fla. Students who worked with him in the research include Drs. Daniel Bishop, Salem; Kenneth Dahlin, Spokane, Wash.; Karin Divis, Blair, Neb.; Bruce Hammonds, Fort Pierce, Fla.; Cheryl Long Dumont, Moscow, Idaho; Douglas Shiro, Hilo, Hawaii; Joycelyn Redwine Westfall, Greensburg, Kans.; Chris K. Yamamoto, Honolulu, and Elizabeth Yanagitani, Ogden, Utah.

All received their doctor of optometry degrees from Pacific last spring and are now in practice.

Puerto Rican School Opens

The Admissions Committee of the new School of Optometry at Inter American University in Puerto Rico has held its first meeting with the Acting Dean of Optometry, Dr. Henry W. Hofstetter. Twenty-eight students have been admitted to the school to date, leaving four slots open for applicants from the U.S. mainland and other countries. The school was scheduled to start up on January 7, 1981, with 32 students. Qualified applicants are being sought, including those from all minorities and hispanic disadvantaged groups.

Application deadline for fall, 1982, is March 1, 1982. Interested persons should contact the Admissions Officer Mrs. Evelyn Pumares, 118 Eleanor Roosevelt Avenue, Hato Rey, Puerto Rico 00919, (809) 763-9622.

Present at the first meeting of the new School of Optometry at Inter American University in Puerto Rico were, left to right: Dr. Irene Sumaza, Dr. Ivette Morales, Dr. Henry W. Hofstetter, acting dean, Dr. Patricio Meneses, Dr. Manuel García Morín and Dr. Juan D. Curet, the latter two members of IAU's administrative staff. Absent at the time the photo was taken was Dr. Luis García Margarida.

Peters Appointed to National Health Panel

Dr. Henry B. Peters, dean of the School of Optometry, University of Alabama in Birmingham, has been appointed to the National Review Panel for Health Promotion with the Elderly. The project, funded by the Administration on Aging and administered by the University of Washington School of Social Work, is designed to develop wellness information for persons involved in health promotion training and activities for older persons.

The review panel is made up of individuals of national reputation with expertise in aging or health promotion, who work in areas relevant to the project's aims. Dr. Peters was president of the National Health Council in 1978-79.

Keeping up with People. . .

The University of Alabama in Birmingham (UAB), School of Optometry, has announced the following promotions effective this past fall: **Dr. Melvin D. Shipp,** assistant professor of optometry, named dean for clinical services; **Dr. Frederick B. Setzer,** assistant professor of optometry, named director of continuing education; and **Dr. Larry J. Alexander,** associate professor of optometry, named assistant dean for student affairs.

Two faculty members promoted to the rank of associate professor at UAB were **Dr. Jimmy D. Bartlett** and **Dr. Rodney W. Nowakowski.** Dr. Bartlett is chairman of the school's section on disease, and Dr. Nowakowski is chief of the school's low vision and geriatric clinical programs.

Other promotions at UAB include: **Dr. Thomas Raasch, Dr. William R. Roscoe** and **Dr. Leo P. Semes,** to assistant professor; and **Dr. James W. Marbourg** and **Dr. John G. Classe,** to clinical assistant professor.

Dr. Frederick R. Kushner, a 1946 graduate of the Northern Illinois College of Optometry, has been appointed chairman of the Board of Directors of the **Illinois College of Optometry (ICO).** The appointment was announced at the board's annual meeting at ICO September 28 and 29, 1980.

Dr. Ronald Herskowitz, a 1979 graduate of ICO, joined the ICO faculty this fall as a clinical associate. **Dr. Jonathan S. Goldman,** a 1975 graduate of the New England College of Optometry, joined the faculty in December, 1980, with duties to include clinical teaching, academic teaching of public health and community optometry and administrative responsibilities.

Dr. Louis J. Catania, nationally known leader in the development and delivery of primary care optometry, has been named director of the Center for Continuing and Post-Graduate Education at the **Pennsylvania College of Optometry.**

New faculty joining the **Southern California College of Optometry (SCCO)** include **Dr. Kenneth E. Brookman,** assistant professor; **Dr. Donald L. Hembree,** clinical instructor in vision therapy and pediatric optometry, **Dr. Richard P. Hemenger,** assistant professor lecturing on geometrical and physical optics; **Dr. John C. Townsend,** acting chief, Ocular Disease and Special Testing Service; and **Dr. Robert S. Vandervort,** providing clinical instruction in primary care and ocular disease and special testing service at the Optometric Center of Fullerton, one of the college's primary teaching facilities.

New appointments at SCCO include **Dr. Lorraine Voorhees,** assistant professor, named director of admissions and records; and **Dr. Charles B. Margach,** professor, named director of the Optometric Technician Program.

Dr. Bernard K. Rubin, assistant professor, SCCO, has been elected chairperson-elect of the Vision Care Section of the American Public Health Association (APHA). Dr. Rubin previously served as program chairman in addition to various other committee posts in the Vision Care Section and will assume the position of chairperson at next year's meeting in Los Angeles. APHA is the nation's largest health care organization with 600 members in the Vision Care Section alone.

Dr. John R. Levene, dean of faculty at **Southern College of Optometry,** announced the following faculty joined the college this past fall: **Dr. Linda Jean Bass,** teaching associate II; **Dr. Frederick Russell Burnett,** teaching associate II; **Dr. Keith Alan Emery,** teaching associate II; **James W. Ford, M.D.,** associate professor lecturing on ophthalmology; **Dr. Walter Clyde Simpson,** instructor; and **Dr. Wayne Yorkgitis,** teaching associate II.

The State University of New York (SUNY), State College of Optometry's residency in rehabilitative optometry at the Veteran's Administration Medical Center in Northport, Long Island, has been expanded. The addition of a second resident line and the inclusion of the Montrose N.Y. Neuropsychiatric Hospital in the program reflect successful months of planning on the part of **Dr. Irwin Suchoff,** director of interns and residents at the college, **Dr. Allen Cohen,** supervisor of residents at Northport, and **Dr. Jerome Thaler,** supervisor of residents at Montrose.

Dr. Steward Frank and **Dr. Eric Coleman,** 1980 graduates of the New England College of Optometry, have been awarded faculty appointments and Veteran's Administration stipends of $11,500. They were selected for the program from a nationwide search conducted over the previous winter.

Dr. Milton Katz, associate professor, SUNY department of basic optometric sciences, has been granted a six-month sabbatical during the fall/winter 1980-81 semester to continue his study on distortion of ophthalmic lenses at the college.

Dr. Maurice Poster, clinical professor, SUNY, has been awarded grants from the Syntex Ophthalmics Corporation and Alcon Pharmaceutical Corporation totalling $14,000 for his study of tinted polycon contact lenses which will evaluate the safety and efficacy of the lenses for human use.

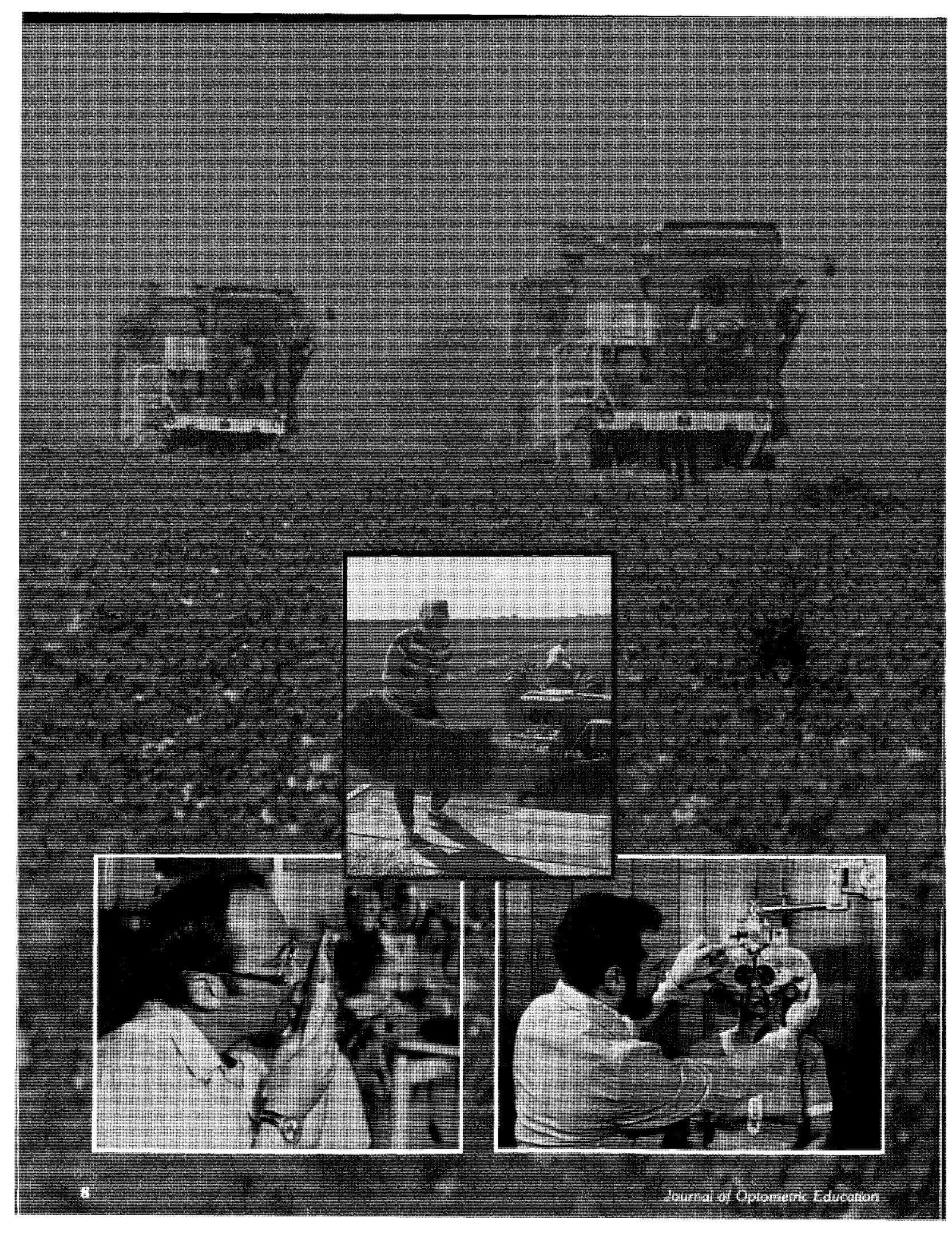
Dr. Stanley Eisenberg, associate clinical professor, has been named SUNY's new director of professional career guidance and to a new post titled, "President's Coordinator of College and Student Interaction with the Profession." Dr. Eisenberg's new assignment will allow him to help students bridge the gap between school and the "real world" and will help him involve the profession in student and college affairs.

Dr. Dean Yager, professor of behavioral sciences at SUNY, has been granted a six-month sabbatical during the fall/winter 1980-81 semester to conduct research on spatial frequency discrimination and detection in humans in collaboration with Dr. Norma Graham, professor of experimental psychology at Columbia University.

The first woman vice-president in the SUNY College of Optometry's ten-year history has been appointed. **Eileen J. Weber,** former assistant director of business affairs at the State University College at Old Westbury, was appointed vice president for business affairs and services and will be responsible for the preparation and administration of the budget.

Drs. Stewart F. Gooderman and **James Posner** have been named co-directors of the office of continuing education at SUNY. Dr. Posner is an assistant professor in the department of clinical optometric sciences, and Dr. Gooderman is an assistant professor specializing in contact lenses.

Professor Geoffrey Ball of the University of Aston in Birmingham, England, will be leaving the university in July, 1981, after thirty years full-time optometry teaching. Professor Ball is retiring at the age of 56 in order to concentrate on writing, consultancies and other invited commitments.



An Analysis of Optometric Practices in Rural Alabama

Bradford W. Wild, O.D., Ph.D., and
Richard Maisiak, Ph.D.

The following report is based on a selection of findings from a larger study whose purposes were to determine what type of curriculum is needed for students planning rural optometric practices. A total of twenty-nine Alabama optometric practices were studied using a three part research plan involving an optometrist survey, a one week patient flow analysis, and an audit of patient records. The results indicated that there were some special facets of the rural practices which may require a different type of educational preparation.

Introduction

One of the recent approaches to curriculum development at the School of Optometry at the University of Alabama in Birmingham involved the identification of some of the characteristics of current optometric practices in rural areas of Alabama. Once these have been identified, it should be possible to determine the educational and professional needs of these practitioners and to evaluate the adequacy of the optometric curriculum at the School of Optometry in meeting the needs of such practitioners.

The Bureau of Health Manpower established as a goal for its Special Project Grant Program under the Health Manpower Training Act of 1971[1] the following priority:

> Meet the increased demand for access to primary care by (a) increasing the number of graduates of optometric training serving in underserved areas; (b) devising, demonstrating and evaluating improved methods for training in a variety of clinical settings, with special emphasis on improving the geographical distribution of optometric services.

The School of Optometry submitted a grant application directed to meet this goal. The grant was initially funded in 1976 and was subsequently continued until the project was completed in late 1979. This report is a summary of a portion of the study which was conducted under the auspices of that grant.

Rationale

The National Study of Optometric Education[2] conducted under the direction of Dr. Robert J. Havighurst reported in 1973 that only 15 percent of optometry students expressed a preference to practice in communities having populations of 10,000 or less. A similar preference was confirmed among students at the School of Optometry of the University of Alabama in Birmingham. Since the state of Alabama has one of the smallest number of optometrists for its population of any geographical region in the nation, this predilection of new graduates to locate their practices in other than rural areas seemed to indicate that the rural areas will continue to be underserved for many years into the future.[3,4]

The current curriculum of the School of Optometry is organized to make use of the training programs of the other health professions on campus. The basic science courses are taught by the faculty of the basic science departments. These faculty members also teach the students in the Schools of Dentistry, Medicine, Nursing and in some cases, the School of Community and Allied Health Resources. Wherever feasible, within the constraints of the available facilities, schedules, and course content, these courses are offered jointly for students in two or more schools. Often such courses are common for only a portion of the academic quarter after which they are taught independently with an emphasis that is appropriate for the subject matter of that professional school.

The clinical training program of the School of Optometry is conducted in a variety of settings. The clinical settings are organized to deal with patients who have specific types of health disorders,

Bradford W. Wild, O.D., Ph.D., is associate dean of the School of Optometry, University of Alabama in Birmingham. At the time of the study, Dr. Wild was director of the project. Richard Maisiak, Ph.D., is senior evaluator for the Office of Educational Development, School of Medicine, University of Alabama in Birmingham.

This study was supported by Special Projects Grant No. 04-D-001443-01-0, Bureau of Health Manpower, Health Resources Administration, U.S. Public Health Service, Department of Health, Education and Welfare, to the School of Optometry, University of Alabama in Birmingham.

such as the Center for Developmental and Learning Disorders, which deals primarily with exceptional children; the Diabetes Research Education Hospital, which deals with suspected or diagnosed diabetic patients; and the Low Vision Rehabilitation Clinic, which deals with blind or partially sighted patients. In addition, there is one clinical rotation that deals with a specific population, the Veterans Administration Optometry Clinic. All of these clinical programs augment the basic clinical program which takes place in the Primary Care Clinic of the School of Optometry. The Primary Care Clinic is organized to duplicate, insofar as possible, the conditions that are apt to be encountered in a private, general practice. It assumes the ready availability of a wide variety of health resources for consultation purposes. In other words, it recognizes the unique opportunities provided within the Medical Center and capitalizes on their availability to provide a unique learning experience.

A corollary to the type of training that is provided in the School of Optometry is that the optometry graduates tend to establish practices that are based on the types of training that have been provided within the academic setting. In other words, the unique opportunities that are available at the Medical Center of the University of Alabama in Birmingham indrectly and not by design, foster an attitude of interdependency with other health care professionals. The optometry graduates are, by this indirection, being trained for urban and suburban practice and are being directed subtly and unintentionally away from rural practice. The role of the optometrist in the rural South is often very different from that of his urban colleague. Since he is ordinarily the only eye care practitioner in the area, the optometrist functions as the primary provider of eye care. In addition, he by necessity, is required to make the initial assessment of the patient's overall health problems, attempts to solve as many of these problems as possible, consults with other health care practitioners as appropriate, provides optometric services and, since there are ordinarily no opticians in the area, provides whatever ophthalmic materials may be required. The rural optometrist operates as an independent, solo practitioner. He is geographically and professionally isolated. His concept of the team approach to providing eye care is characteristically based on sending patients many miles for consultation to the appropriate practitioner or medical center. Consultations are inconvenient, costly and often involve delays caused by the patient's inability to arrange personal or work schedules or transportation. In some instances the patient may never receive the benefits of the appropriate health care professional. Consultations should be made accurately, based upon proper diagnosis, and consonant with the perceived need for speed.

As an aid in making appropriate consultation the University of Alabama in Birmingham, through its Office of Health Extension, Public Service and Research, has instituted a special service to health care providers called Medical Information Service via Telephone (MIST).[5] A health care practitioner can call the MIST telephone number and receive direct telephone consultation with faculty members who have special knowledge in the area of concern. Currently there are 21 faculty members from the School of Optometry and the Department of Ophthalmology who actively participate in the program offering consultation in 17 areas of specialty. Any health care practitioner in the state of Alabama can avail himself of this service. During the fiscal year ending June 30, 1975, a total of 29,538 calls were handled under this program. The number of such calls has been increasing at a rate of approximately 30 percent per year. The MIST program is, and will continue to serve as, the connecting link between the rural health care practitioner and the faculty of the Medical Center.

Methods

Based upon the results of a sample survey of five optometric practices that was conducted during the summer of 1976, a protocol for the final study was developed. There were 43 practices identified as rural using the two criteria of being in communities having populations of less than 10,000 and being 40 miles or more away from or relatively inaccessible to a major metropolitan area. From this list of practices 25 were selected. They were representative of the different geographical areas of the state. The optometrists who were approached expressed interest in the study and willingness to cooperate in the data gathering phase of the project. In addition, four urban optometric practices were selected to be surveyed. All of these practices were located in either the central city or the suburbs of a large Alabama city. They were considered to be representative of urban practices in the area. A total of 40 optometrists were involved in the 29 individual and group practices that were surveyed.

Each practice was visited by a fourth year optometric student for one week. During that time the student conducted three different studies. The first involved

The role of the optometrist in the rural south is often very different from that of his urban counterpart. Since he is ordinarily the only eye care practitioner in the area, the optometrist functions as the primary provider of eye care.

the completion of the "Optometrist Questionnaire" by the rural practitioner. The questionnaire was used to gather information concerning the number of years of existence of the practice, the services available, health care availability, the methods of patient payment, and the educational opinions of the rural optometrists. The second study was the recording of information about the sample of patients visiting the office during the week. Data concerning the appointment status, reason for visit, date of visit, and the personnel seen were recorded for every patient entering the optometrist's office during a sample week. The third study was an audit of a sample of 300 or more randomly chosen optometric patient charts recorded over the previous ten years of service. A primary goal of the audit was to determine the frequency of various eye problems in the practice. The percentage (50%) of rural practices which were group practices was higher than the percentage (12%) of similar rural practices found in Kegel-Flom's[6] sample of rural practices.

Results and Discussion

Office Space

Data from all three surveys were tabulated. The means and percentages were calculated for both the rural and urban samples of optometry practices. The mean duration of existence of the rural practices was 17 years and the average size of the space was 1900 square feet. These figures were very similar to data from the survey of the urban practices.

The percentages of rural and urban practices with certain room types are presented in Table 1. The data indicate that the rural practices had the basic rooms necessary for a satisfactory optometric practice. All the rural and urban practitioners in the sample have at least one waiting room, a business office, at least one examination area, and at least one frame selection/dispensary room. The percentage (33%) of rural practices with a visual therapy room is low especially in comparison to the urban sample.

Instrumentation

Statistics concerning instruments are divided into two categories since some instruments can be shared easily by optometrists in group practices while other instruments are best allocated individually. The results are shown in Table 1. Some of the practitioners in both practice types were without a biomicroscope and many were without an indirect ophthalmoscope. As for shared instruments, almost all the practices had at least one tangent screen and a keratometer, and all the urban practices had low vision aids, visual therapy equipment, and a set of diagnostic contact lenses. Several of the rural offices were without a perimeter, a sphygmomanometer, low vision aids, visual therapy equipment, or a set of diagnostic contact lenses. Only one of the rural and urban offices was equipped with a gonioscope. These results suggest that rural practices may be more limited in the variety of services that are available than urban practices.

The distribution of the type of services reported to be available at both samples of urban and rural practices is presented in Table 2. Both samples reported having contact lens, dispensing, and occupational vision services available. Some of the practices also had low vision and orthokeratology services and only a few had aniseikonic services. The percentage of rural practices offering orthoptics and developmental vision services was much lower than the percentage of urban practices. The percentage of practices offering developmental vision and low vision services is higher in the present study than in Kegel-Flom's study.[6]

Special Educational Needs

Many rural practitioners felt that all graduating students may be deficient in practice management skills and, in view of the importance and need, also may

TABLE 1

Percentage of Optometry Practices with Various Rooms and Instruments

	Rural	Urban
Rooms:		
One waiting room	88	100
More than one waiting room	13	0
One business office	100	100
At least one laboratory	92	75
At least one visual therapy room	33	75
At least one operatory	100	100
At least one frame selection/dispensary room	100	100
Instruments (per optometrist):		
At least one phoropter	100	100
At least one biomicroscope	79	83
At least one tonometer	94	100
At least one ophthalmoscope	100	100
At least one indirect ophthalmoscope	65	17
Instruments (per practice):		
At least one tangent screen	88	100
At least one perimeter	54	75
At least one sphygmomanometer	88	75
At least one keratometer	100	100
Some low vision aids	63	100
Some visual training equipment	71	100
At least one set of diagnostic contact lens	75	100
At least one gonioscope	0	25

need additional training in the management of ocular emergencies and disease. These data (Table 3) correlate with the lack of availability of other health care in these rural areas. Although all the rural practitioners reported the presence of at least one physician in the rural area, only 13% reported the presence of a nearby ophthalmologist. The average reported distance to the nearest emergency eye care was 30 miles and the average reported distance to the nearest consulting ophthalmologist was 40 miles. The rural population was found to be more dependent on optometrists for emergency eye care than the urban population.

Patient Payment Methods

The results concerning patient payment methods taken from the questionnaire were not in accordance with general beliefs about rural practices. For instance, the distribution of reported patient payment methods for the rural practices was 58% for immediate cash, 13% for Medicaid, 2% for Medicare, 21% for delayed cash payment, and 5% for other. Except for a higher Medicaid percentage, the distribution was similar to the urban sample. These results conflict with the notion that the rural practitioners have a higher rate of delayed cash payments. The distribution of reported patient payment methods for the urban sample was 61% for immediate cash, 5% for Medicaid, 1% for Medicare, 31% for delayed cash payment, and 1% for other.

Patient Scheduling and Services

The percentage of patients (55%) without appointments in rural practices was higher than the percentage (40%) in urban practices, indicating the rural practices may have a less formal structure. The percentage of rural and urban patients with different primary reasons for visiting an optometric practice is presented in Table 4. The most frequent reported patient reasons for visiting both the rural and urban optometrists were comprehensive vision/eye examinations, frame adjustments, and spectacle dispensing. The rural practitioners tended to have fewer patients for contact lens services and visual therapy, and more patients for frame adjustments and ocular emergencies than urban practitioners. Other reasons for visits included payment and financial matters. These data support the previous indications that the rural practitioner is faced with more emergencies than his urban counterpart. The percentage of ocular emergency cases managed by optometrists or requiring consultation is presented in Table 5. The results indicate that more rural than urban optometrists managed emergencies themselves.

Personnel Utilization

In constructing Table 6, it was assumed that all patients would normally see the receptionist before any other personnel. Thus the "Optometrist Only," "Technician Only," and "Both Optometrist and Technician Only" categories automatically include the receptionist. Patients who saw the receptionist alone in both practices were arranging appointments and paying bills in person. The percentage of rural patients (28%) who saw the technician alone was lower than the percentage (36%) of urban patients who saw the technician alone. The rural practitioners appear not to delegate as much responsibility to assistants as urban practitioners. The percentage of patients who saw the "Optometric Technician Alone" for different reasons for both the rural and urban practices is presented in Table 7. A deeper analysis of the data indicated that the urban optometric technician performed 99% of the frame selections, 84% of the frame adjustments, and 77% of the spectacle dispensing while the rural optometric technician performed only 50% of the frame selection, only 60% of the frame adjustments, and only 48% of the spectacle

TABLE 2

Percentage of Optometry Practices with Various Services Available

	Rural	Urban
Contact lens	96	100
Orthoptics	63	100
Low Vision	50	50
Occupational Vision	79	75
Aniseikonia	25	0
Developmental Vision	33	100
Orthokeratology	42	50
Dispensing	100	100

TABLE 3

Distribution of Responses of Rural Optometrists to Two Questions Concerning Future Optometrists

In what areas of optometry do you feel today's graduating optometrists are deficient?	
Practice Management	52%
Mechanical Optics	38%
Emergency Care	24%
In what areas would you recommend a student planning a *rural practice* be most knowledgeable?	
Management of Ocular Emergencies/Disease	43%
Practice Management	24%
General Optometry	19%
Patient Communication	19%

TABLE 4

Percentage Distribution of Patients' Reasons for Visiting Rural and Urban Optometry Practices

	Rural	Urban
Comprehensive Vision/Eye Examination	34.6	34.6
Frame Selection	2.4	2.9
Frame Adjustment	20.3	15.3
Spectacle Dispensing	20.0	19.6
Contact Lens Delivery	1.4	7.8
Contact Lens Fit	2.0	8.6
Visual Therapy	0.1	0.5
Spectacle Replacement	2.7	2.7
Ocular Emergency	2.0	0.3
Other	14.5	7.8

TABLE 5

Percentage of Ocular Emergency Cases Managed by Rural and Urban Optometrists or Requiring Consultation

	Rural	Urban
Managed by Optometrist	64	44
Consultation Required	22	56
No Treatment Required	14	0

TABLE 6

Percentage Distribution of Personnel Seen by Optometric Patients

	Rural	Urban
Optometrist only	38	40
Technician only	28	36
Both Optometrist and Technician	33	17
Receptionist only	11	7

TABLE 7

Percentage of Patients Seeing the Optometric Technician Alone for Various Reasons for Rural and Urban Practices

	Rural	Urban
Comprehensive Vision/Eye Examination		
Frame Selection	51	99
Frame Adjustment	59	84
Spectacle Dispensing	48	77
Contact Lens Delivery	14	10
Contact Lens Fit	15	3
Visual Therapy	0	0
Spectacle Replacements	57	60
Ocular Emergency	2	0
Other	19	38

adjustments. Duties not performed by the technician are likely to be assumed by the optometrist.

Patient Records

A review of 9,715 patient records from 29 practices was made. The surveyors randomly sampled at least 300 patient records from each practice. The data were compiled for computer processing. The results are presented in figure 1. The distribution was bimodal, peaking at the ages of 15-17 and at the ages 46-50. Relatively few of the patients were between the ages of 32 and 39. The percentage (60%) of female rural patients was somewhat higher than the percentage (56%) of female urban patients. Only 36% of the records indicated the race of the patient. Eighty-eight percent of those records indicated white patients, and 12% indicated black. Since the percentage of blacks in both the rural and urban population areas is at least 25%, the results suggest that a low percentage of blacks is receiving full primary eye care. The percentage of rural patients under a physician's care at the time of optometric service was 28% and the percentage of urban patients under physician's care at the time that the patient received optometric services was 20%. These results indicate that rural optometrists may need to be especially sensitive to their patients' overall health needs.

A higher percentage of rural patients who were under a physician's care had hypertension (45%) or diabetes (11%) than the percentage of similar urban patients with hypertension (32%) and diabetes (7%). The most common complaints for both the rural and urban patients were the following: progress check (24%), blur at near (17%), blur at distance (9%), blur at distance and near (8%), headaches (6%), and burning, itching, and tearing (5%). The distribution of refractive error types was similar for both the urban and rural practices. The most frequent type of refractive error was hyperopic astigmatism with presbyopia and the least frequent type was myopic presbyopia. The percentage (18%) of rural patients with eye disease was significantly higher than the percentage (9%) of urban patients with eye disease. These results tend to support other findings of health care problems in rural areas. The distribution of

TABLE 8

Percentage Distribution of Rural and Urban Patients with Different Disease Types

	Rural	Urban
Ocular	66	37
Systemic	25	58
Neurological	1	1
Combination	8	4

rural and urban patients with different disease types is presented in Table 8. The results indicate that the majority of rural disease cases were ocular while the majority of urban cases were systemic.

Conclusions

Some of the major findings of this study are:

1. The amount of office space available in rural and urban practices was similar.
2. The variety of instruments was less in rural practices than in the urban practices.
3. The average rural practitioner offered fewer specialty services than did the average urban practitioner.
4. Since the rural practices tended to be located far away from ophthalmologists or emergency eye care facilities, the rural optometrist tended to perform more ocular emergency services than the urban optometrist.
5. Methods of payment for services and materials were similar in both rural and urban practices.
6. Optometrists in rural practices saw fewer contact lens patients than optometrists in urban practices.
7. Optometrists in rural practices saw more emergency eye care patients than optometrists in urban practices.
8. Optometrists in rural practices tended to have the optometric technicians perform more office duties and fewer patient care duties than their urban counterparts.
9. It was suggested by optometrists already practicing in rural areas that optometry students who are planning to practice in rural areas should receive additional training in practice management, ocular emergencies, and ocular disease diagnosis and management.

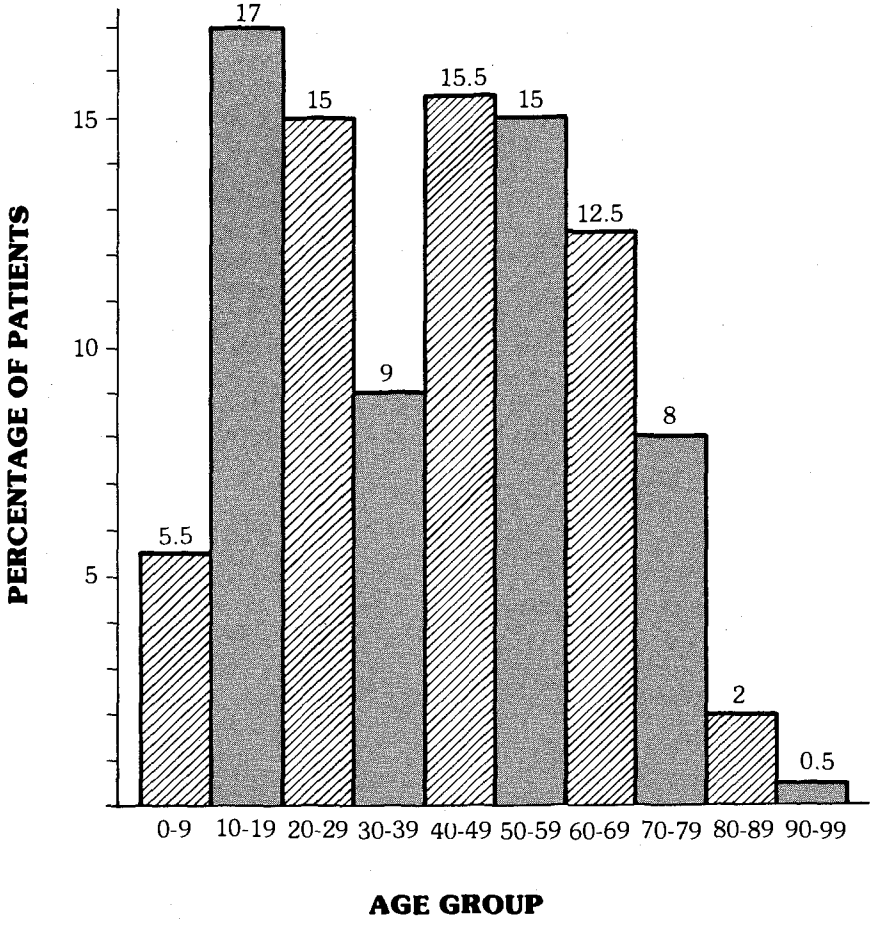


Fig. 1. Percentage of different patient age groups visiting rural Alabama optometric practices, 1968-1978.

Acknowledgment

The authors wish to acknowledge the assistance of G. Rudolph Golson, O.D., program coordinator, for his invaluable assistance in organizing, coordinating, and compiling material for the grant. Without the leadership of Dr. Golson, the accomplishments under this study would have been materially less. □

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Face-to-Face

RUSS DORLAND, O.D.

"Even though VOSH has taken care of nearly 150,000 people, naturally, that's just scratching the surface; I feel that we have to help optometry develop in these [underdeveloped] countries as a separate profession."

Russ Dorland, O.D., is a private practitioner in Mankato, Minnesota. As immediate past president of Volunteer Optometric Services to Humanity (VOSH), Dr. Dorland has spent much of the last five years donating time and resources as a volunteer optometrist in underdeveloped countries. His most recent trip to Thailand was spent in a Cambodian refugee camp where he examined nearly 1,800 people and fitted them with eyeglasses. Here, in an interview with Managing Editor Harriet Long, Dr. Dorland talks about his experiences with VOSH and what he sees for the future. Through this new JOE feature, we intend to bring readers closer to individuals within the profession who are making significant contributions but are not widely recognized. Please let us know if you have any suggestions for future interviews.

JOE: *Dr. Dorland, exactly what is the purpose of Volunteer Optometric Services to Humanity (VOSH) and how does it function?*

Dorland: The purpose of VOSH is to give optometrists an opportunity to extend services and abilities to people who live in underdeveloped countries and needy areas and to bring much needed eye care to the thousands in those areas who have never received it and are not likely to have a chance to receive it in the near future.

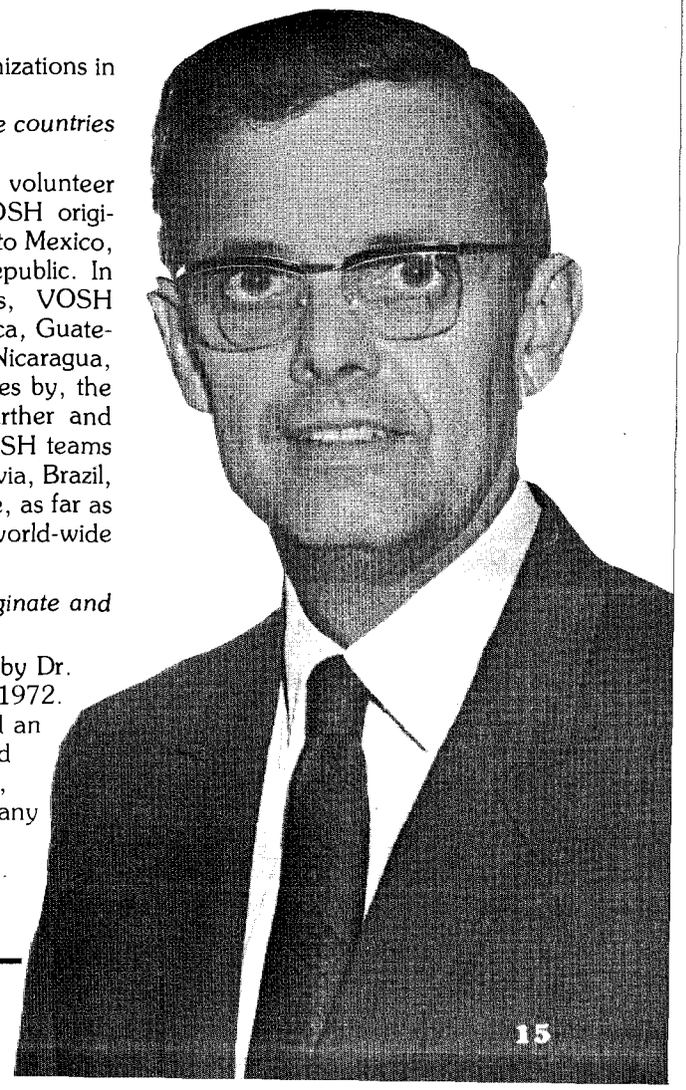
We travel by teams, which vary in size depending upon the arrangements that have been made with our foreign hosts. Our wives and other lay people generally accompany us, along with opticians and dispensers. Also, general practitioners and ophthalmologists often accompany a team. We need a sponsoring organization in a foreign country that will organize facilities for us, line up interpreters, and publicize the fact that we are coming. We never go into an area without getting permission from any local eye care groups, because we want to maintain top-notch relationships with any eye care organizations in the country we are visiting.

JOE: *What are some of the countries that VOSH has been to?*

Dorland: We have had volunteer optometrists long before VOSH originated, and they mainly went to Mexico, Haiti and the Dominican Republic. In addition to these countries, VOSH teams have been to Costa Rica, Guatemala, Honduras, Panama, Nicaragua, and El Salvador. As time goes by, the VOSH teams have gone further and further away. We've had VOSH teams go to Togo, West Africa, Bolivia, Brazil, and Peru; so it is getting to be, as far as distance is concerned, more world-wide all the time.

JOE: *How did VOSH originate and why was it started?*

Dorland: It was founded by Dr. Franklin Harms in Kansas in 1972. Actually, Dr. Harms had read an article in 1968 by Dr. Reynold Swanson, Florida optometrist, who reported on one of his many trips to Haiti with interprofessional Seventh Day Adventist.



teams. He called Dr. Sawnson to ask if he could go along and see what it was like. He came back aware that so much more could be done if optometric teams throughout the country could be organized to go on these trips. His goal was to harness and organize optometric manpower on the state and national level and to utilize used eyeglasses since the natives cannot afford to pay for glasses themselves.

He subsequently organized the Kansas optometrists, and after five or six missions that received publicity in optometric journals and newspapers, other optometrists wanted to participate. Soon there were very active chapters, particularly in Indiana and Iowa. From that early beginning in 1972, VOSH has formed over forty state chapters. Not all of them are active, but we are hoping that more of them will become so as the years go by.

JOE: *That's quite a large number. What kind of equipment do you usually take on a visit and how do you transport it?*

Dorland: We take along all of the used eyeglasses that we can. They are prepackaged or prelabeled, and we have learned to know what kinds of prescriptions to take along. The people in warm climates seem to become presbyopic and need reading glasses maybe five to ten years earlier than those in the United States. Although we surely want to see and take care of people of all ages and all needs, the primary thrust is to supply the reading and the work glasses. When the mother of the family can put on glasses to do her craft work and her sewing and to pick the dirt out of the rice to be able to feed her family better, we feel we have really accomplished something.

We can't take along sophisticated refractors. We take along fundamental instruments such as the retinoscope where we can objectively determine what a person needs, the ophthalmoscope, and different assortments of trial lenses and trial frames. We have to carry with us what we use. Generally we always find it best to keep the eyeglasses right with us rather than to try to send them ahead of time. We may lose them or have problems getting through customs if we don't take them with us.

JOE: *How do the VOSH optometrists examine for disease? Do you need sophisticated equipment to do that?*

Dorland: With the ophthalmoscope, we can look into the eye and check the health of the eye and the retina. Pressure readings for glaucoma get to be more complicated. Usually, through interpreters and a careful case history, we can screen out those who need medical eye care. Our host in the foreign country, whether it is a Lions club, Rotary club, church organization or mission, usually has contacts with the medical people in the country. Some of the people who need cataract surgery and medical care can be referred for medical attention.

JOE: *How long have you been involved with VOSH and how did you get started?*

Dorland: Well, I've been involved in VOSH for about five years. The founder of VOSH, Franklin Harms, and I were classmates at Illinois College of Optometry. When I read about VOSH in our optometric journals, it appealed to me, and I decided to find out what it was all about. At the time, there was a meeting coming up in Kansas City in which the Kansas optometrists were trying to spread the good word about VOSH to a greater number of states. The Minnesota Optometric Association agreed to send me to the meeting and find out how to establish a chapter. They were very cooperative and recognized the potential good that VOSH could generate.

VOSH appeals to those people who like to travel and who like to get acquainted with people in foreign countries in a different way from the ordinary tourist. The ordinary tourist hardly ever gets well acquainted with the middle class people in a foreign country. However, on a week's VOSH trip, you really get so well acquainted with your hosts that you many times just want to go back to see those same people again, besides helping the people see better. So you develop a love and friendship for people who are so kind to you when you visit their homeland.

Once, a student from Togo, West Africa, attending school in Minneapolis, was organizing and collecting medical supplies to take back to Togo. We heard about this and organized a VOSH team to return with these supplies to Togo for three weeks. Even though Togo is a tiny country, there are two-and-a-half million people to one ophthalmologist and one optometrist! We had to have the military help control the crowds; the demand was so fantastic. It was such a unique experience. Where else could you enjoy an hour's interview in the Camp David type of home of the president of the country or spend a day as guest of the king of the tribe of the young man who was our guide, or become well acquainted with the United States ambassador to the country? It was just a fantastic experience.

JOE: *What are some of the other unique experiences you have had?*

Dorland: I had the unique experience of being over in Thailand in a Cambodian refugee camp recently. That was a more personal kind of thing. The American Refugee Committee contacted the American Optometric Association asking for an optometrist to set up an eye clinic. We have had optometrists from the United States follow up for two to three months at a time since then, and I am so thrilled to find that there are over twenty-five optometrists who have indicated to the American Refugee Committee that they would be available to go even for a two and three-month period of time.

JOE: *How long was your trip to Cambodia?*

Dorland: I stayed for two months. This was last February and March. While I was there, I was able to see nearly 1,800 people and fit them with glasses. It was an ideal situation. About ten percent of the time I couldn't match up the closest prescription with what the needs were; yet we had money available to pay for the eyeglass prescriptions that had been donated by the Dutch people. I was able to get these made up in Bangkok. On every VOSH trip, we bring back some very sophisticated prescriptions that, naturally, we don't have along because we can't match up everybody. However, I was able to get these specialized eyeglass prescriptions made up.

JOE: *Did you have any help when you were in Cambodia?*

Dorland: No, I was alone as an optometrist. In fact, the trip came up quite suddenly, and I didn't even have

JOURNAL OF OPTOMETRIC EDUCATION

READER SURVEY

The editors of the *Journal of Optometric Education* (JOE) hope you will help us serve you more effectively. In 1980, JOE won the national Optometric Editors Association award for "Best National Optometric Journal." We would like to continue to provide our readers with the best possible quality educational journal for the profession. We would appreciate your taking a few minutes to complete the following questionnaire. By telling us more about yourself, we can provide features and articles that more closely meet your needs and provide our advertisers with pertinent data. We also are asking for your comments about JOE and for your suggestions on editorial content.

Please answer the following questions and return the questionnaire to us by April 31, 1981. No postage is necessary, and no signature is required. Thank you for your cooperation and your time.

John F. Amos, O.D.
Chairman, Editorial Council

Harriet E. Long
Managing Editor

Please return this questionnaire no later than April 31, 1981. Thank you.

Journal of Optometric Education

READER SURVEY

I. YOUR OPINIONS ABOUT THE *JOURNAL OF OPTOMETRIC EDUCATION*

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   - ☐ Very good
   - ☐ Average
   - ☐ Below average
   - ☐ Unsatisfactory

2. Which features do you read?

	Always read	Frequently read	Occasionally read	Never read
Articles	☐	☐	☐	☐
Interviews	☐	☐	☐	☐
Newsampler	☐	☐	☐	☐
Abstracts	☐	☐	☐	☐
Resource Reviews	☐	☐	☐	☐
ASCO Activities & Board Briefs	☐	☐	☐	☐
Letters	☐	☐	☐	☐
Classified	☐	☐	☐	☐
Editorial	☐	☐	☐	☐

3. Which features are most useful or interesting to you? (Please rank: 1, 2, 3, etc.)
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   - _____Letters
   - _____Classified
   - _____Editorial

4. Which features, if any, would you eliminate?
   - ☐ Articles
   - ☐ Interviews
   - ☐ Newsampler
   - ☐ Abstracts
   - ☐ Resource Reviews
   - ☐ ASCO Activities & Board Briefs
   - ☐ Letters
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   - ☐ Editorial

5. What *new* features would you add?
   _____
   _____

6. In general, how would you rate the quality of writing in the *Journal of Optometric Education?*
   - ☐ Excellent
   - ☐ Very good
   - ☐ Average
   - ☐ Below Average
   - ☐ Unsatisfactory

7. In general, how would you rate the quality of the photographs and illustrations used to support the text?
   - ☐ Excellent
   - ☐ Very good
   - ☐ Average
   - ☐ Below Average
   - ☐ Unsatisfactory

8. What topics would you like to see covered in future issues of the *Journal of Optometric Education?*
   _____
   _____
   _____
   _____

9. What persons or occupational types would you like us to interview for future issues?
   _____
   _____
   _____

10. Which publications are the most important for you to read? (Please rank: 1, 2, 3, etc.)
    - _____The New York Times
    - _____Optometric Monthly
    - _____Journal of Optometric Education
    - _____The Washington Post
    - _____Time/Newsweek
    - _____Journal of the American Optometric Association
    - _____Chilton's Review of Optometry
    - _____The Wall Street Journal
    - _____American Journal of Optometry and Physiological Optics
    - _____Other:_____
      _____
      _____

11. How many times/quarter do you pick up and read the *Journal of Optometric Education?*
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    - ☐ Two
    - ☐ Three-Five
    - ☐ Six-Ten
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12. How much time do you spend reading the *Journal of Optometric Education* each time you pick it up?
    - ☐ Less than 10 min.
    - ☐ 10-29 min.
    - ☐ 30-59 min.
    - ☐ 1-2 hours
    - ☐ More than two hours

13. How many persons other than yourself read *your* copy of the *Journal of Optometric Education?*
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    - ☐ 2
    - ☐ 3
    - ☐ 4
    - ☐ 5
    - ☐ 6
    - ☐ 7
    - ☐ 8
    - ☐ 9
    - ☐ 10
    - ☐ 11
    - ☐ 12+

14. What are the position titles of those people who read *your* copy of the *Journal of Optometric Education?*

_____

_____

_____

_____

15. How frequently should the *Journal of Optometric Education* be published?
- ☐ Quarterly
- ☐ Bimonthly
- ☐ Monthly
- ☐ Other: _____

II. PERSONAL DATA

1. Age
- ☐ Under 21 years
- ☐ 22-29
- ☐ 30-34
- ☐ 35-39
- ☐ 40-44
- ☐ 45-49
- ☐ 50-54
- ☐ 50+

2. Sex
- ☐ Male
- ☐ Female

3. Marital Status
- ☐ Married
- ☐ Single

4. If student:
- ☐ 1st year
- ☐ 2nd year
- ☐ 3rd year
- ☐ 4th year

III. EMPLOYMENT DATA

1. Type of position held:
- ☐ President
- ☐ Dean
- ☐ Associate Dean
- ☐ Trustee
- ☐ Department chairman
- ☐ Clinic Director
- ☐ Admissions Officer
- ☐ Business Officer
- ☐ Librarian
- ☐ Private Practitioner
- ☐ Professor
- ☐ Associate Professor
- ☐ Assistant Professor
- ☐ Instructor
- ☐ Clinical Faculty (part-time)
- ☐ Non-optometric faculty
- ☐ Fellow/Resident
- ☐ Student
- ☐ Other _____

2. Type of Institution
- ☐ Public
- ☐ Private
- ☐ University/College
- ☐ Academic Health Center
- ☐ VA/Military
- ☐ U.S. Public Health Serv.
- ☐ HMO
- ☐ Community Health Center
- ☐ Other _____

3. As part of job, responsible for:
- ☐ Textbook selection
- ☐ Clinical equipment/materials purchases
- ☐ Library purchases
- ☐ Purchases of research equipment
- ☐ Contracting for institutional services
- ☐ Other purchases (explain) _____

4. As part of job, control annual budget of:
- ☐ Under $5,000
- ☐ $5,000-$10,000
- ☐ $10,000-$25,000
- ☐ $25,000-$50,000
- ☐ $50,000-$150,000
- ☐ $150,000-$300,000
- ☐ $300,000-$700,000
- ☐ $700,000-$1,500,000
- ☐ $1,500,000-$3,000,000
- ☐ $3,000,000-$10,000,000
- ☐ More than $10,000,000
- ☐ None

IV. FINANCIAL DATA

1. Annual Income
- ☐ Less than $15,000
- ☑ $15,000-$19,999
- ☐ $20,000-$24,999
- ☐ $25,000-$29,999
- ☐ $30,000-$34,999
- ☐ $35,000-$39,999
- ☐ $40,000-$44,999
- ☐ $45,000-$49,999
- ☐ $50,000-$54,999
- ☐ $55,000-$59,999
- ☐ $60,000-$70,000
- ☐ $70,000+

2. Financial Holdings
- ☐ Bank savings
- ☐ Stocks and bonds
- ☐ Mutual funds
- ☐ Savings and loan account
- ☐ Credit union account
- ☐ Other: _____

3. Credit Cards
- ☐ One
- ☐ Two
- ☐ Three
- ☐ Four or more
- ☐ None

4. Automobiles

Number of cars owned:
- ☐ One
- ☐ Two
- ☐ Three or more

Size of car(s):
- ☐ Subcompact
- ☐ Compact
- ☐ Medium
- ☐ Full-size

Type of car:
- ☐ Domestic
- ☐ Foreign

V. ACTIVITIES

1. Travel (business and pleasure)

Frequency:
- ☐ 1-2 times/year
- ☐ 3-10
- ☐ 11-20
- ☐ More than 20

Mode:
- ☐ By Plane
- ☐ By Train
- ☐ By Car

2. Leisure Activities
- ☐ Reading
- ☐ Listening to music
- ☐ Bicycling
- ☐ Attending cultural events
- ☐ Boating/sailing
- ☐ Swimming
- ☐ Camping
- ☐ Jogging
- ☐ Photography
- ☐ Tennis
- ☐ Golf
- ☐ Skiing

3. Hours/Week Spent:

Reading _____

Listening to Stereo _____

Participating in Athletics _____

Watching Television _____

VI. COMMENTS

Other comments regarding format, content, distribution, etc., if any:

_____

_____

_____

_____

_____

_____

_____

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labeled eyeglasses to take along. I took along four or five thousand unlabeled ones and taught my Cambodian helpers how to use the lensometer to measure the power and label the glasses. When I ran out of simplified reading glasses prescriptions, I had the money available to go into Bangkok to buy the inexpensive reading glasses and fill the needs for many of the people we took care of.

JOE: *Have you had any other unique experiences?*

Dorland: In Guatemala, there is a Catholic mission that has been just wonderful as a host. Minnesota has been down there three times. Throughout the year, they bring people down there for a learning experience for a week at a time, trying to get them to understand what poverty is all about and how difficult it is to get people in an underdeveloped country out of the poverty level. We get exposed to what they are trying to do to help raise the level of education and farming and other ways of making a living there.

Also, Minnesota got started going to Torreon in northern Mexico because a Mexican girl came home with one of my daughters for Thanksgiving one weekend. She was from a girls' school in Mankato, Minnesota. During our conversation, I discovered that her dad was in the Lions club, and I started corresponding with that Lions club. As a result, Minnesota sent its first VOSH team there. Later the South Dakota chapter took over that project because Minnesota had other places to go. Now, between Minnesota and South Dakota, there are probably five or six thousand people in this girl's hometown who have received eyeglasses who never had them before.

JOE: *How do you work these trips into your own schedule? Do you normally go once a year?*

Dorland: I've been able generally to go once a year, and I have wanted to stay on a once-a-year basis, although with the two-month trip to Cambodia I am taking a break this winter. Each state has its own unique problem of recruiting enough optometrists to fill the team. Yet most of the time, this isn't a problem because once a person goes, they are so enthusiastic about it that even if they can't go back right away, they spread the good word and get other optometrists to volunteer their services.

JOE: *What countries have you been to?*

Dorland: My first trip was to Yucatan, Mexico, with the Iowa group; then I went to Guatemala, Togo, West Africa, Torreon in northern Mexico, and last winter to Thailand.

JOE: *What kind of feedback have you received from the profession and those you have served?*

Dorland: Well, the House of Delegates of the American Optometric Association passed a resolution in 1975 commending VOSH for the excellence of its endeavors and the success of the program in sponsoring and helping people in underdeveloped countries. Some of the state chapters have been quite close to their state associations and others have had strictly to go it on their own without counting on any help from the state association financially or otherwise. In Minnesota, we have worked quite closely with our state association and have received a good deal of moral support.

JOE: *How do the people you serve respond to what you do?*

Dorland: When you have people, who after they receive new glasses, get down on their knees and thank you from the deepest part of their heart for what you have done, it is a heartrending experience, and we know it works. Some might wonder, when we do such a sophisticated examination in the United States, how we can match up these prescriptions of used eyeglasses. Yet, we hit it pretty close. It is so much better than nothing.

When Iowa can go back to the same Lions club in Yucatan year after year, that Lions club knows that the project works because they want to keep sponsoring it. They find so much enthusiasm and acceptance by the people they are serving that they want the VOSH team to keep coming back. Even in the fairly small community in Guatemala that Minnesota has gone to three times, they keep wanting us to come back; because more and more people come for eyeglasses from further away. It isn't unusual for people to walk twenty or thirty miles to get in line for a pair of glasses in these underdeveloped countries.

JOE: *Would you like to see more optometrists participating in VOSH?*

Dorland: Although we have forty chapters, not all of them are active. Nearly all the state directors have been on VOSH trips and they are enthusiastic, but they don't know quite how to promote it in their own state. They are really not leaders and can't quite get it off the ground, so we are trying to give them all the help we can.

I'm looking forward to the time when certain countries will have a permanent location available that optometrists can go to on their own without even necessarily being part of a team. If they want to go to Guatemala or Costa Rica or Honduras for two weeks, they can go. Even though VOSH has taken care of nearly 150,000 people, naturally, that's just still scratching the surface; and I feel that we have to help optometry develop in these countries as a separate profession.

JOE: *What would you like to see happen to accomplish these goals?*

Dorland: Well, some of this is beyond what VOSH can do. I think our national optometric organization has to show the leadership in helping optometry schools develop in these countries. It is a bigger thing than we volunteer optometrists can handle. We just might have to go along the way we are, doing the best we can and hope that something greater can develop so that people can be assured of getting more eye care.

I feel that the United States has to do more to export professional optometry to underdeveloped countries. Actually, we are doing very little; if a school happens to develop, we might try to give it some help. American optometry schools could send staff people to help optometry students in underdeveloped nations or establish a staff exchange program. This would give student volunteers an opportunity to obtain a wonderful learning experience, too.

JOE: *What encouraged you to get started in this kind of volunteer service?*

Dorland: Albert Schweitzer once said, "I don't know what your destiny will be but one thing I know, the only ones among you who will really be happy are those who have sought and found how to serve." I guess I was searching for a way of using my talent to serve. □

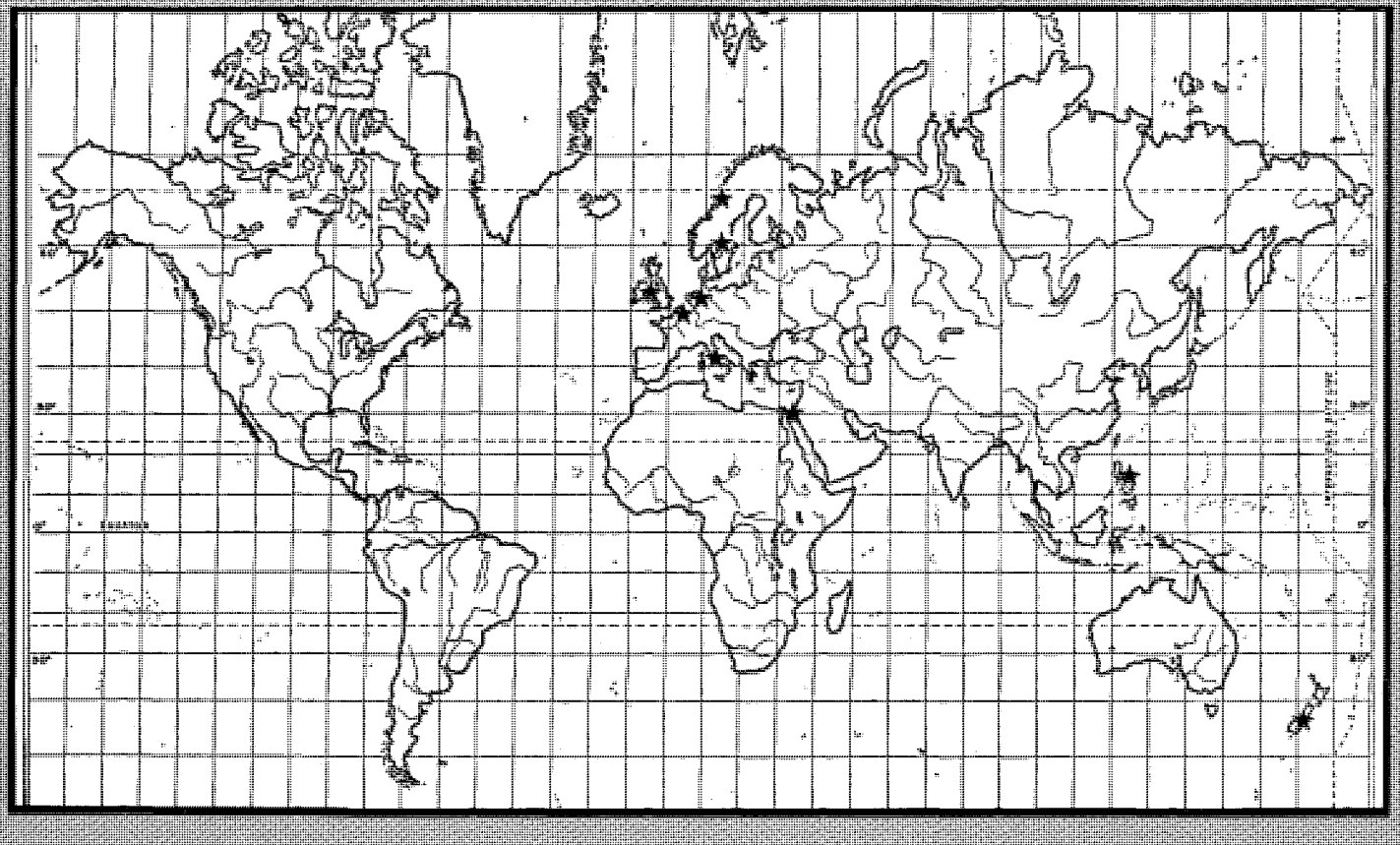
International Perspectives in Optometric Education: A Status Report

Robin Yarmovsky

The International Optometric and Optical League (IOOL) reaffirmed its commitment to developing worldwide involvement and promoting optometry through education during its 1980 annual delegate meeting held in Nagoya, Japan, May 27-30. Underscoring the fact that the scope of practice in one country impacts upon optometry in all countries several nations gave a status report on the state of optometry and optometric education in their country. A synopsis of those reports is presented here.

Robin Yarmovsky is librarian/research assistant for the American Optometric Association Washington Office.

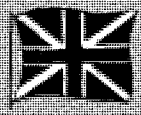
★IOOL countries highlighted in this report.



Germany

The increase of Germany's optometric education during the last decade has created an oversupply of manpower and threatens to create extensive training programs which will not be needed in the future. Between 1960 and 1975 student enrollments grew from 3,000 to 5,000 and continue to flourish today. It is feared that if the birth rate dwindles in 1985, as is predicted, there will be an overabundance of training facilities. The Zentralverband der Augenoptiker (ZVA), in order to provide a balance between manpower and education, has authorized a university institute to study this potential problem.

Great Britain



With the formation of the new British College of Ophthalmic Opticians, England now has a single professional organization responsible for all optometric education. The British College, founded by the Worshipful Company of Spectacle Makers, the British Optical Association and the Scottish Association of Opticians, will be responsible for professional qualifying exams, higher educational qualifications and the maintenance of professional standards.

The Spectacle Makers Company, a livery company and guild of the city of London set up by royal charter in 1629, will continue as a guild and will play a sponsoring role in optometry. The British Optical Association has been incorporated as a foundation within the British College, and the Scottish Association of Opticians has passed all of its assets and responsibilities to the British College.

Trainee graduates who pass the qualifying examination of the British College will be entitled to membership within the college, and to apply for statutory registration as an ophthalmic optician with the General Optical Council. Dispensing opticians will not be eligible for membership. A separate body to be known as the "Faculty of Dispensing" has been formed for those opticians formerly associated with the British Optical Association and the Spectacle Makers Company.

Fellowships to the British College will be granted to optometrists who have practiced for several years and have passed the fellowship examination. Fellows of the three founding bodies of the British College will be entitled to apply for foundation fellowship at the college.

Israel

Israel is suffering from a serious crisis in its vision care system. Governmental neglect, lack of legislation, and the absence of an optometry school have created a situation in which half of the Israeli public is being treated by unqualified practitioners.

Optometry is not a recognized profession in Israel, and there is no optometry school to properly train professionals. More than half of the current group of practicing "optometrists" have immigrated from other countries, and their skills and abilities vary drastically depending upon where they were trained. Israeli citizens who are rich enough go abroad to study optometry. The less fortunate are forced to study in Israel. The "education" available in Israel closely patterns an apprenticeship. A course for opticianry is taught over a period of two to three years, and at the end of the course graduates are recognized as opticians. Opticians are trained to dispense glasses, but due to the lack of regulation, many of these people perform refractions and contact lens work as well. These practitioners adopt the title of optometrist. Approximately 50 percent of all Israeli "optometrists" enter the profession in this manner.

> *"In Israel 65 percent of all vision examinations are being performed by vision care professionals other than ophthalmologists. Only about 25 percent of these people are fully qualified, highly trained optometrists who have been educated abroad."*

In Israel 65 percent of all vision examinations are being performed by vision care professionals other than ophthalmologists. Only about 25 percent of these people are fully qualified, highly trained optometrists who have been educated abroad.

Recent attempts to upgrade optometry courses have been thwarted by opponents who have made course improvements contingent upon the passage of an optometry law, a law whose future remains bleak.

Yet, positive steps have been achieved. The Israel Optometric Association has established an Optometric Center for continuing education. Another group has started self-educating courses for its members. And with the aid of philanthropists and academic educators there has been a strong push to establish a school of optometry in Israeli universities.

Italy

A year-old agreement between Bausch and Lomb Italia and Italian ophthalmologists involving the dispensing of contact lenses in Italy is causing great concern. The Bausch and Lomb policy, which originated in 1979, calls for an initial office visit and follow-up by an ophthalmologist before contact lenses may be sold. Bausch and Lomb's head office in Rochester, New York, has repudiated the policy but their assurance that the Bausch and Lomb Italia/ophthalmologist agreement would be canceled has not produced the promised change in policy.

In fact, Bausch and Lomb Italia and the ophthalmologists have continued the discriminatory policy by obtaining a general cabinet circular from the pharmacy division of the Italian Ministry of Public Health which states that before contact lenses are dispensed an initial visit to an ophthalmologist is mandatory to ascertain the absence of ocular pathology. Also, according to the IOOL report, Bausch and Lomb is financing the distribution of a position paper to optometrists and opticians describing ophthalmology's views on contact lenses. In direct violation of the Italian law which reserves all rights of the application and sales of contact lenses to ametropic patients to optometrists, the orthoptics, technicians working directly under the aegis of ophthalmologists, have organized a theoretical course on the practice of contact lenses.

Italian optometrists are concerned about these developments for they fear that the ophthalmologists and Bausch and Lomb may obtain a law against optometry from the Italian Parliament. Since Europe has no definitive law on contact lenses, such a statute would set a precedent threatening the future of European contact lens legislation.

Netherlands

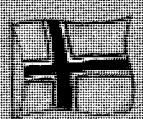
Twenty-five opticians who had been practicing optometry without an official degree successfully completed a postgraduate course in optometry and received their diplomas. The courses were offered by the Nederlandse Unie Van Opticiens (NUVO) in conjunction with Christiaan Hugenschool and de Stichting "Nederlandse Vakopleiding Opticiens."

New Zealand

The New Zealand Optometric Association celebrated its 50th anniversary at the association's annual conference held October 14-18, 1980. Billed as a major educational and social event, it concentrated on the achievements of the profession and on those members who made them possible.

Enthusiasm for optometry as a career continues a healthy surge as three times the number of students that can be accepted apply to universities. Also continuing education programs at regional seminars are well patronized because of the wide range of overseas guest speakers and local specialists.

Norway



Norway's department of education is considering a proposal to institute a three year optometry curriculum in its universities. If agreed to, the program will take effect in 1982. Presently, Norway's mandatory optometric education consists of one year of dispensing school for high school seniors and the completion of a two-year optometry program at the university level.

To acquire a masters opticians diploma an additional six years of practice are required. While a four-year optometry program is preferable to the proposed three-year plan, it is doubtful if it will come to fruition any time in the near future.

> *Optometry in the Philippines is considered to be the best developed in East Asia because of legal recognition and established optometric education.*

Philippines

Optometry in the Philippines is considered to be the best developed in East Asia because of legal recognition and established optometric education. However, priorities in national efforts by optometry urge continued assistance in the development of good optometric education in order to keep up with the standards of more affluent and better developed countries, particularly the United States.

Optometry became a legally recognized profession in the Philippines in 1917. Although the use of diagnostic pharmaceuticals is still prohibited, most optometrists enjoy comfortable incomes and economic security in the practice of what generally includes refraction, contact lens fitting and dispensing. Orthoptics, low vision care, and other specialized areas are not well developed. Pediatric optometry as a specialty has still to be introduced.

There are seven optometry schools in the Philippines with an average enrollment of 300 students. The largest school has an enrollment of 900. Three of the schools are university affiliated, one is in an academic health center, and the rest are located with large colleges offering other professional courses. About five percent of the enrollment in each college is foreign. The four-year curriculum includes courses in such subjects as pharmacology, optometric management, public health and related American curricula. In some institutions, the curricula are designed so that graduates of the optometry program are eligible for admission to the regular College of Medicine.

Sweden

A bill proposing a one-year optometry program in a technical university is awaiting the approval of the Swedish parliament.

An earlier proposal to institute a half year optometry course at one of Sweden's university departments of ophthalmology was soundly defeated by the Board of Universities. If the bill is signed, the University of Gothenburg will offer the course and Sweden will meet the IOOL optometric education standards by offering the following:

1. A two-year course in optics and dispensing.
2. Two years of on-the-job training in an optometric practice.
3. One year of university training in optometry and, upon completion, a license as an ophthalmic optician (or optometrist).
4. Two to three months of university training in contact lenses and two to three months in low vision.

Also, a special diploma will be offered to students completing a contact lens fitting course. The diploma will give the optometrist the exclusive right to prescribe and fit lenses without medical referral.

The influence of Sweden's optometric education and IOOL standards has extended beyond the country's own borders. The Swedish optometric organization, SOR, in cooperation with the Swedish Federation of the Blind, has started the training of ophthalmic opticians in the KCMC Eye Hospital in Moshi, Tanzania. The three-year program, which started in 1979, enrolls ten students, and the $600 tuition is paid by the Swedish International Development Authority. □

Robert Rosenberg, O.D.
State University of New York
State College of Optometry

Optics Guide (catalog). Melles Griot, Irvine, California, 1975, 192 pp.

One seldom "reviews" a catalog or looks upon these publications as other than commercial promotion. Occasionally, however, an advertiser accompanies the description of his specific products with informative and descriptive material that makes it good reading. Such is the case with the Melles Griot catalog which now carries an $8.50 price tag but can usually be obtained by qualified users at no cost.

This catalog is singled out for its excellent introductory section on optics theory, both geometrical and wave, written for one literate in the area and offering useful "rules-of-thumb" for the optometrist, optometry student, or vision researcher whose work could benefit from some practical optical systems knowledge. In addition, the actual catalog descriptions and illustrations are quite clear and illustrate complex and simple ray paths for lenses, mirrors, and prisms, including Fresnel. They explain standard test targets, often providing (as good catalogs do) ideas for doing certain jobs or at least information on their "do-ability." It is interesting to note that the price lists also have their value—they clearly illustrate the exponential nature of the cost of precision.

Women Physicians in a Nonmetropolitan Area. D'Elia, Gabrielle and Iris Johnson. *J. Med. Ed.* 55(7): 580, July, 1980.

In medicine as in optometry, women have been entering the profession in greater numbers since the nineteen fifties. What, if any, has been the impact of women on the clinical needs of the country? The article examines these questions with data gathered on rural medical practice. The findings indicate that women, indeed, behave differently from men in their choices of practice mode. The questions this raises for optometry may be significant. Certainly there is an indication that there is at least a good deal of systematic data to be gathered. The implications are *not* that women, any more than other minorities within the health professions, have the burden of correcting all the wrongs while men do what is best for them, but rather that perhaps all graduates must be encouraged or provided with adequate motivations to serve the public's needs where they are identified.

* * * *

Sounding Boards. *New England J. of Med.* 303(23): 1356, December 4, 1980.

The future of National Board examinations, state vs. national certification, the relationships among curricular elements, professional and basic science faculties, the influence of National Board exams on professional curriculum, academic freedom—all topics currently under discussion at optometric meetings—are also matters of serious concern to the medical academic and clinical community. They are of such current interest as to warrant three separate articles in the venerable *New England Journal of Medicine*. All three articles are worthy of serious reading by optometrists.

The first (brief) article describes the impact of Part I of the Medical Boards, essentially basic science, on medical school curricula where passing of Part I (which has a 13 percent failure rate) has become a major justification for learning basic science. The author expresses frank concern for basic science if Part I were to be discontinued or no longer required. It seems that medical educators also are fighting the "relevance" battle.

The second article reports on yet another variable—the Comprehensive Qualifying Examination (CQE)—which some envision as replacing Parts I and II of the National Board. (This situation may not be unlike our own National Board of Examiners in Optometry constructing a clinical comprehensive exam.) Although the position expressed in this article, endorsed by the National Board of Medical Examiners, is that the schools, state boards, and national boards should all be independent of each other, one wonders how far this autonomy can survive in medicine *or* optometry and how much impact a change in examination by an independent body can have on our autonomous faculties.

The third article discusses the role and need for the Federation of State Medical Boards (not unlike our International Association of Boards of Examiners in Optometry) and its impact on licensure, accreditation of schools, and continuing education.

The issues are complex but important and are so similar to related optometric issues that these articles should be recommended reading.

* * * *

Beyond Biology: A Curriculum in Methods of Analysis for Clinicians. McKay, David M., M.D., and Eric W. Jensen, M.D., *J. Med. Ed.* 55(6): 521, June, 1980.

The authors describe an externally funded program for postgraduate education to meet certain specific goals of medicine that are not incompatible with optometry aims—more clinician-researcers, clinically trained graduates involved in processes of public policy-making, a cadre of faculty able to cope with and transmit to students matters broader than the applications of natural science to individual patients' visual complaints. It describes a curriculum that relates matters of public health policy to education and patient care while cautioning about the training of glib skeptics who can be destructive influences in the education of clinicians. An approach as described might be pursued by our colleges, even to the external funding.

A Survey of Research Projects in Schools and Colleges of Optometry

John C. Whitener, O.D., M.P.H.

The American Optometric Association has been concerned for a number of years that more optometrists and optometric institutions become involved in research. In December, 1978, the AOA Committee on Basic and Applied Research, chaired by Robert Yolton, O.D., Ph.D., began a survey of research projects in the schools and colleges of optometry. This survey was completed by the Grants and Contracts Assistance Project Team in December, 1979. The purpose of the survey was to give a state of the art report of research in progress in the schools and colleges of optometry. It was not meant to be all inclusive.

The survey was sent to thirteen schools and colleges of optometry, of which twelve responded to the survey. Research activities for the non-responding school was based on a list of National Eye Institute awarded grants. The survey requested that the schools and colleges of optometry describe their current research, the faculty members involved, and the funding source and amount for all research. Also, a question relating to any special research interest that the school or college would like to have funded was asked.

The responses to the survey varied from cursory to extremely detailed reports. The extensiveness of descriptive information in this report is a direct reflection of the extensiveness of the material submitted by that particular school or college of optometry. As a result, this report does not pretend to be a complete analysis of the state of the art of current research in optometric institutions; however, it should prove useful in several ways. First, the report serves as an indicator of the need for further research in various areas. Furthermore, it provides a means for schools and colleges to discover faculty in other institutions who are doing research in similar areas. In addition, it is hoped that the results will be used as a resource for information and planning for the Association of Schools and Colleges of Optometry and the beginning of an annual update of all the research taking place within the schools and colleges.

Not all of the schools responded with information on the actual amount funded for the research projects listed. For this reason, the decision was made not to include any of the dollar figures for the research projects. In response to the question pertaining to special research interests that the schools or colleges would like to have funded, there were several replies. These areas of interest included development and construction of a dynamic optometor, evaluation of optical equipment, visual performance requirements for various occupasions and how they relate to people with low vision, the effectiveness of vision therapy, and clinical research in general.

This survey shows that while a great amount of research activities are taking place with ophthalmic lenses, there is a relatively small amount of research dealing with low vision. Without doubt, optometry has much to contribute in the area of low vision research. It is hoped that more research activities will take place in this area in the future. Likewise, there are many projects listed under sensory and motor research, yet few clinical studies relating to sensory-motor defects amenable to vision therapy.

There possibly may be disagreement over the categorization of the research projects. It was very difficult to ascertain the most applicable category for many of the projects. Various schools, the National Eye Institute and other research groups categorized research projects differently. The category is not as important as the information concerning the project.

Research activities are clearly of vital importance to the profession of optometry. Increased research activities by the schools and colleges in recent years is to be commended. Due to inflation and Congress' austere view of research funding there may be even more competition for research dollars in future years. Hopefully, the commitment of optometry schools and colleges to pursue research funds will not waiver in the future, but will produce even greater gains. □

John C. Whitener, O.D., M.P.H., is coordinator of federal research and development for the American Optometric Association Washington Office.

The following abbreviations have been used in this report:
The following abbreviations have been used in the accompanying report.

Schools

FSC — Ferris State College
ICO — Illinois College of Optometry
IU — Indiana University
NECO — New England College of Optometry
PU — Pacific University
PCO — Pennsylvania College of Optometry
SCCO — Southern California College of Optometry
SCO — Southern College of Optometry
SUNY — State University of New York
TOSU — The Ohio State University
UAB — University of Alabama in Birmingham
UCB — University of California, Berkeley
UH — University of Houston

Funding Sources

AOA Auxiliary — Auxiliary to the American Optometric Association
FDA — Food and Drug Administration
HEW — Department of Health, Education and Welfare (now Health and Human Services)
NEI — National Eye Institute
NIH — National Institutes of Health
NINCDS — National Institute of Neurological and Communicative Disorders and Stroke
NSF — National Science Foundation
OEPF — Optometric Extension Program Foundation

LOW VISION RESEARCH

Project	School/Investigator	Funding Source
1. Low vision evaluation of children, New York Institute for Education of Blind	SUNY / Bergknoff, Horn and B. Rosenthal	Unknown
2. Remediation of contrast sensitivity in low vision patients	PCO/Jose and Cummings	NEI
3. Identifying vision characteristics and evaluating visual performance in patient with low vision; developing methods for measuring, classifying and prescribing optical aids for low vision	UCB/Bailey	NIH
4. Audio-tactile learning in the blind	IU/Pietsch	Unknown
5. Contrast sensitivity in low vision patients	OSU/Brown	Ohio Lions Eye Research

RESEARCH WITH OPHTHALMIC LENSES

Project	School/Investigator	Funding Source
1. Chemical deposits on contact lenses	SUNY/Rapp	Unknown
2. Correcting astigmatism and distortion spectacle lenses	SUNY/Katz and Lewis	Unknown
3. Wetting angle studies with contact lenses. High speed soft lens fluorscein studies. Profile photography of cornea oxygen transmission in contact lenses; corneal thickness measurements using the electronic Pachometer optical effect on flexure of toric soft lens	SUNY/Poster	Unknown
4. Zonal effects in ophthalmic lenses and effect upon perception	SUNY/Rosenberg	Unknown
5. Optical systems design programs	SUNY/Dippner	Unknown

Project	School/Investigator	Funding Source
6. Fresnel Prisms as field expanders	PCO/Brilliant	AOA Auxiliary
7. Multi-focal lenses	PCO/Barker	Multi-Optic Corporation
8. Hydrophilic and Durasoft contact lenses	ICO/Jwikus	ICO Research Fund
9. Comparison of patient reactions to Varilux-2 and D-25 bifocals	SCCO/Snider	Multi-Optics Corporation
10. Pump vs. permeability in hydrophilic lens wear	SCCO/German	Unknown
11. Correlation of laboratory and clinical data in hard contact lens wear	SCCO/German	Unknown
12. Electrometer radiation transmission through soft contact lenses and ocular implant materials	SCCO/Chase	Unknown
13. Comparison of clinical performance of two gas-permeable contact lenses versus PMMA	SCCO/Portz	Unknown
14. Contact lens cycloplegia	SCCO/German	Unknown
15. Critical interval study of base curve and diameter of contact lenses	FSC/Lowther	Wesley/Jessen
16. Clinical comparison of Dow-Corning Silicone-Resin Lenses to the MESO CAB Polycon and PMMA Lenses	FSC/Lowther	Dow Corning
17. PH of tear film on and under contact lenses	FSC/Lowther	Unknown
18. AL-47 contact lens evaluation	FSC/Lowther	Alden Lab
19. Evaluation of low plus lenses and three lens diameter fitting method	FSC / Lowther, Malinovsky and Trick	Bausch and Lomb
20. Oxygen transmissibility of hydrogel lenses	UAB/Milson	UAB
21. A comparison of physical and psychophysical measurements in glass and plastic	NECO/Svagdys, DuFours and Carter	Unknown
22. Histochemical analysis of surface deposits on soft contact lenses	NECO/White and Grofik	Bausch and Lomb
23. Corneal physiology, particularly the effects of contact lens wear	UAB/Fatt	Unknown
24. Clinical and experimental evaluation of gel contact lenses for their safety and efficacy.	UCB/Mandell	Private
25. Effects of contact lenses on refractive error	UCB/Polse	NIH
26. Effects of absorptive ophthalmic lenses on object detection in a real highway situation	IU/Allen	Hoya Lens Manufacturing Corporation
27. Molds and designs for new TBI and mold and updated designs for autocluder	IU/Allen	Unknown
28. Contact lens studies with silicone, sauflon, Bausch and Lomb thin lens, Durasoft astigmatic lens	IU/Borish	Various contact lens manufacturers
29. Investigating spotty edematious formations appearing after contact lens wear	IU/Hitchcock	Unknown

Project	School/Investigator	Funding Source
30. Investigating corneal spots developing in Hydrocurve patients and hard lens wearers using So-Clens solution	IU/Riley	Unknown
31. Comparison of heat treated, chem treated and plastic spectacle lenses upon impact	IU/Shick	Unknown
32. Evaluating soft toric lenses	IU/Sarita	Unknown
33. Orthokeratology	PU/Coon	National Eye Research Foundation
34. Extended wear contact lenses	PU/Dippel, West and Kerns	Unknown
35. Investigation of various fitting and measurement parameters of conventional contact lenses	PU/West and Peterson	Unknown
36. Optics, ophthalmic lenses	SCO/Schultz	Unknown
37. Ophthalmic lenses	SCO/House	Unknown
38. Contact lenses, cornea	SCO/Benvenuto	Unknown
39. Corneal edema associated with daily and continuous lens wear	OSU/Schoessler	Ohio Lion's Eye Research

PHARMACOLOGY RESEARCH

Project	School/Investigator	Funding Source
1. Effects of drugs on ocular tissue of rabbit	SUNY/Pagano	Unknown
2. High molecular weight floreiscein	PCO/Silbert and Rinehart	American Optical Co.
3. Ocular phototoxic effects of PUVA treatment	PCO/Barker and Barker	FDA
4. Comparative study of diagnostic pharmaceutical agents used for dilating the pupil	SCCO/Jaanus	Barnes Hind Co.; SCCO
5. Effects of drugs on visual system	UAB/Adanis	NIH
6. Dose-response effects of various diagnostic drugs used in clinical practice	UCB/Polse	NIH
7. Iatrogenic pharmacology to develop model for studying toxic effects of chloroquine and its relationship to chloroquine retinopathy	IU/Chang	Unknown
8. Monitoring effects of oral contraceptive steroids on corneal curvature and thickness	IU/Sarita	Unknown
9. Effectiveness of various mydriatic agents	PU/Levine	Unknown

ANATOMY AND PATHOLOGY RESEARCH

Project	School/Investigator	Funding Source
1. Calcium requirement of salivary gland in rats	SUNY/Pagano	Unknown
2. Dynamics of visual pigment membranes	SUNY/Rapp	Unknown
3. Regeneration of visual pigment	SUNY/Sach	Unknown

Project	School/Investigator	Funding Source
4. Cryobiochemical study of visual pigment and bacterial rhodopsin	SUNY/Sach	Unknown
5. Pupillary light reflex	SUNY/Wyatt	Unknown
6. Rapid ocular smear technique	SUNY/Sach	Unknown
7. Human optic nerve potentials	PCO/Siegfried	Lion's Research Foundation
8. Metabolism of the diabetic retina	PCO/Barker	NEI
9. Temporal masking in the peripheral visual field	ICO/Barry and Alexander	ICO Research Fund
10. Neurophysiological anomalies in retinal ganglion cells of Siamese cats	ICO/Chino and Shansky	NEI
11. Quantitative analysis on receptive field properties of striate neurons in Siamese cats	ICO/Chino and Shansky	NEI
12. Anatomical investigations on the anomalies of the retina in Siamese cats	ICO/Chino and Shansky	NEI
13. Receptive field organization and inhibitory interaction in the retina of Siamese cats	ICO/Chino, Shansky and Hamasaki	NEI
14. Photoreceptor orientation	SCCO/Bailey	SCCO
15. Age related changes in corneal curvatures	SCCO/Brungardt	Bausch and Lomb
16. In vivo examination and photography of corneal epithelium	FSC/Lowther	Ferris Faculty Research Grant
17. Developmental neuroanatomy of the retina geniculate system of normal and visually deprived cats	UAB/Hickey	NEI
18. Development of human lateral geniculate nucleus	UAB/Hickey	NEI
19. Ocular effects of hypertension	UAB/Kleinstein	NEI
20. Neural mechanism of extrastriate and striate vision (tree shrew)	UAB/Norton	NEI
21. Neural interactions in the vertebrate retina (rabbit)	UAB/Oyster and Takahashi	NEI
22. Light scattering by the corneal epithelium	UAB/Milson	NEI
23. Metabolic control of corneal deturgescence	UAB/Whikehart	NEI
24. Studies on mechanism of cataractogenesis by examining DNA repair synthesis and protein synthesis in the crystalline lens	UCB/Jose	NIH
25. Physiology and transport functions of ocular tissues such as retinal pigment epithelium, ciliary body and cornea	UCB/Miller	NIH
26. Neurophysiological studies of plasticity in visual cortex	UCB/Van Sluyters	NIH; private
27. Vegetative ocular physiology and biochemistry	IU/Everson	PHS special grant
28. Uptake and distribution of electron dense tracer horseradish peroxidase in goldfish retina	IU/Hefner	Unknown

Project	School/Investigator	Funding Source
29. Blood/retinal barrier	IU/Haine	Indiana Chapter of Academy
30. Corneal changes	IU/Hunter	Unknown
31. Assessment of normal bacteria of healthy human eye	PU/D. Yolton	Unknown
32. Intraocular pressure/blood pressure changes during water provocative testing	PU/Levine	Unknown
33. Corneal birefringence	SCO/Rosenfeld	Unknown
34. Ocular pathology	SCO/Smith	Unknown
35. Ocular pathology	SCO/Smith	Unknown
36. Corneal environment	OSU/Hill	NEI
37. Corneal physiology	OSU/Hill	Ohio Lion's Eye Research Foundation
38. Vitreous cells	OSU/Alexander	Ohio Lion's Eye Research
39. Investigation of origin of pupillary fluctuations	OSU/Daum	Ohio Lion's Eye Research
40. Development of retinogeniculate system	UAB/Hickey	NEI
41. Myopia study	IU/Hofstetter	NEI
42. Nutrition, obesity and retinal degeneration	SUNY/Rapp	Unknown
43. Systemic effects of intraarticular injection of Freund's Complete Adjuvant	SCCO/Meetz	Unknown
44. Bausch and Lomb digital pachometer for corneal thickness study	IU/Borish and Soni	Unknown
45. Disease detection parameter in geratology	IU/Gerstman	Unknown
46. Clinical research in area of hypertension and glaucoma	IU/Marshall	Unknown
47. Nutrition	SCO/Green	Unknown

SENSORY AND MOTOR RESEARCH

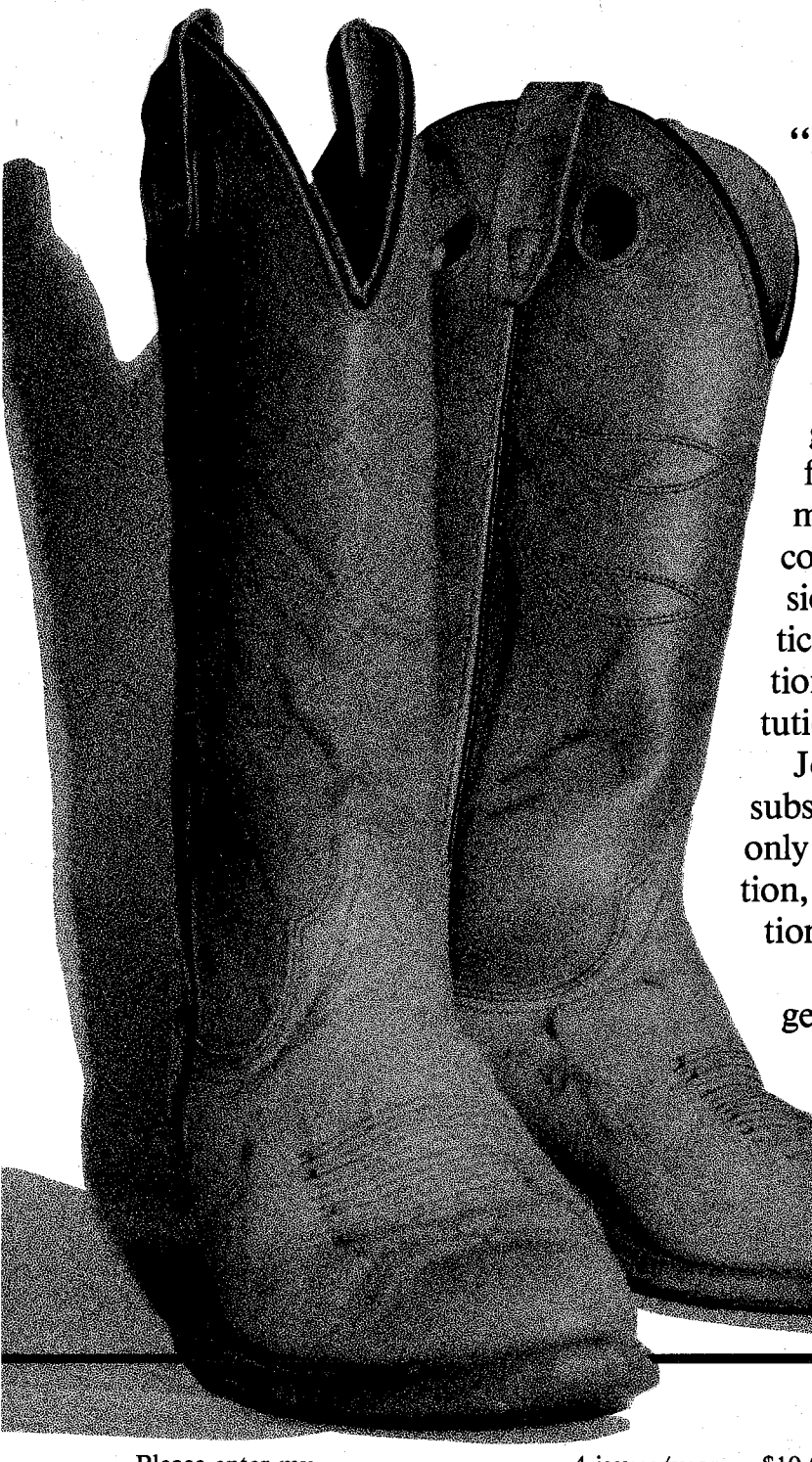
Project	School/Investigator	Funding Source
1. Cortical transfer of tilt after effect	SUNY/Buzzelli	Unknown
2. Humphrey Vision Analyzer	SUNY/Weiner and Podell	Unknown
3. Clinical diagnostic ocular microbial facility	SUNY/Sack	Unknown
4. Oscillatory potentials in the visual system	PCO / Siegfried	NEI
5. Infant acuity testing and Down's Syndrome	ICO/Caden and Alexander	ICO Research Fund
6. Refractive variations in astigmia with far point and near point fixation	ICO/Dufeck	ICO Research Fund
7. Mechanism of neurotransmitter release	SCCO/Tobias	SCCO

Project	School/Investigator	Funding Source
8. Evaluation of subjective automatic refractor	SCCO/Snider	Unknown
9. Optokinetic nystagmus and visual acuity measurement	SCCO/Griffin	AOA Auxiliary
10. Optometric utilization of B-Scan ultrasonography	SCCO/German	Unknown
11. Measurement of anomalous crossing of optic projections in humans by direct and consensual pupillometry	SCCO/Chase	Unknown
12. Evaluation of Ichikawa-Shoin pseudoisochromatic color vision test	SCCO/Chase	Unknown
13. Infant assessment and treatment of ocular problems	FSC/Richman and Garzia	FSC
14. Dependence of Ogle forced vergence-fixation disparity curve on diameter of fusion contour	FSC/Saladin	FSC
15. The binocular VER: The importance of the phase relationships of the monocular components	FSC/Trick	Unknown
16. Development for schematic eye for tree shrew both normal and visually deprived animal	UAB/Christensen and Norton	UAB
17. Clinical utility of arden plate	NECO/Comerford	NECO
18. Sensory processes of vision with emphasis on color vision mechanisms	UCB/Adams	NIH
19. Computerization of vision exam	UCB/May	U.S. Army
20. Correlation of slope of light rise to the Electro-Oculograms (EOG)	IU/Afanador	Unknown
21. Automated refraction	IU/Borish	Humphrey Instrument Co.
22. Ophthalmetron for automated refraction	IU/Borish	Bausch and Lomb
23. Biology of memory	IU/Pietsch	Unknown
24. Peripheral vernier acuity	IU/Reading	Unknown
25. Changes in angle lambda with change in pupil size	IU/Reading	Unknown
26. Comparison of Goldman, Mackay-Marg and non-contact tonometers	IU/Sarita	Unknown
27. Comparison of convention refractive examination using the phoropter and the retinoscope to the ophthalmetron and the Vision Analyzer	IU / Sarita	Unknown
28. Reliability of VER as a refraction measuring technique	PU/R. Yolton	Unknown
29. Electronic pupillograph use in measuring responses to various chromatic stimuli	PU/Roth	Unknown
30. Electrodiagnosis	SCO/Dohrn	Unknown
31. Color vision	SCO/Spiegler	Unknown
32. Psychophysics, computers	SCO/Wilson	Unknown

Project	School/Investigator	Funding Source
33. Electroretinogram implicit time	PCO/Siegfried	Lion's Research Foundation
34. Electroretinogram in the controlled diabetic rat	PCO/Barker	NIH
35. Electrophysiology of the human visual system	PCO/Siegfried	NIH
36. Color vision in infants	ICO/Taylor and Alexander	NEI
37. Visual electrophysiology: relationship between scalp potentials and underlying cellular electrophysiology recorded in animals	PCO/Siegfried	NEI
38. Spatial interactions in visual field of color deficient	ICO/Barry and Alexander	ICO Research Fund
39. Biophysical studies of photoreceptors	UAB/Corliss	NEI
40. Objective measures of accommodative vergence normals and divergence excess	SUNY/Cooper, Kruger and Cuiffreda	Unknown
41. Cognitive demand on dark focus of accommodation	SUNY/Kruger	Unknown
42. Ultrasonic measurement of movement of crystalline lens during accommodation	SUNY/Lewis, Kruger and Oehrlein	Unknown
43. Open-loop experiments on the influence of perceived motion on pursuit eye movements	SUNY/Pola	NEI
44. Alternative computer-assisted eye movement recording and analysis techniques	SUNY/Dippner	Unknown
45. Assessment of stereopsis and training of fusional convergence in young children using Random Dot Stereograms	SUNY/Feldman	Unknown
46. Operant conditioning techniques in assessing visual acuity and binocular functioning in children aged one to three.	SUNY/Feldman	Unknown
47. Eye movement disorders and their relation to information processing	SUNY/Goldrich and Sedgwick	Unknown
48. Eye movements in monkeys	SUNY/Wyatt and Pola	Unknown
49. Control of eye movements and sensory function in normal and anomalous visual systems	PCO/Higgins	NEI
50. ERG responses in amblyopia and strabismus patients	ICO/Barry, Berman, Chino and Shansky	Lion's Club
51. Effects of intermittent and alternating visual stimulation of binocular rivary	ICO/Berman and Alexander	ICO Research Fund
52. Effects of surgically induced esotropia on single-cell responses of common cat retinal ganglion cells	ICO/Shansky and Chino	NEI
53. Relationship between accommodation and convergence during visual training	ICO/Weiss	OEPF
54. Effect of accommodative deficiencies on developmental level of perceptual skills	SCCO/Hoffman	OEPF
55. Fixation disparity and symptomology	SCCO/Caloroso	Unknown

Project	School/Investigator	Funding Source
56. Stereopsis in strabismics with anomalous correspondence	SCCO/Caloroso	Unknown
57. Concomitancy testing	SCCO/Caloroso	Unknown
58. Clinical method for determining response AC/A	SCCO/Rouse, London and Allen	Unknown
59. Accommodative differences in asymmetric viewing	SCCO/Chase	Unknown
60. Ocular instability as a function of oculomotor imbalance	SCCO/Chase	Unknown
61. Eye movement strategies assessment on a developmental basis for learning disabled and reading disabled child	FSC/Richman and Garzia	Unknown
62. Effects of luminance upon binocular visual functioning	NECO/Comerland	Unknown
63. Fixation disparity and phoropter studies	NECO/McCormack and McGill	NECO
64. Visually-evoked cortical responses and stereoscopic data	NECO/McCormack	NECO
65. VER asymmetry among human strabismics	NECO/McCormack	Unknown
66. Sensory and motor disorders of binocular vision which underlie anomalies of binocular vision	UCB/Schor	NIH
67. Neurological dysfunction in oculomotility	UCB/Stark	Unknown
68. Analysis of optical treatments of nystagmus	IU/Gerstsmon	Unknown
69. Measurement of strabismic angles of anomaly	IU/Hofstetter and Somers	Unknown
70. Instability of anomalous correspondence	IU/Reading	Unknown
71. Investigation of anomalous correspondence fixation distance	IU/Somers	Unknown
72. Biofeedback to train eye positioning in strabismic patients	PU/R. Yolton	OEPF
73. Prism correction for oculomotor imbalance	OSU	NEI
74. Clinical implication of vergence-anomaly	OSU/Jones	NEI
75. Cortical mechanism of amblyopia	OSU/Jones	Ohio Lion's Eye Research
76. Fixation disparity	OSU/Sheedy	Ohio Lion's Eye Research
77. Contrast sensitivity in amblyopia	UH/Levi	NEI
78. Behavioral measures of binocular vision	UH/Harwerth	NEI
79. Studies of binocular vision	UH/Harwerth	NEI
80. Assessment of visual function in infants and retarded children (behaviorally and neurophysiologically)	SUNY/Suchoff	Unknown
81. Visual imagery, visualization, visual memory	SUNY/Forrest	Unknown

Project	School/Investigator	Funding Source
82. Functional astigmatism	SUNY/Forrest	Unknown
83. Pre-surgical determination of visual function through electrophysiological testing	SUNY/Sherman, Richter, Horn and Cohen	Unknown
84. Amblyopia and visual evoked responses	SUNY/Sherman	Unknown
85. Recovery of visual function following surgical lesions in goldfish	SUNY/Yager	Unknown
86. Mechanisms of amblyopia	PCO/Higgins	NEI
87. Low power plus lenses and perceptual motor performance of young ametropes	ICO/Barry	ICO Research Fund
88. Survey on visual, developmental and perceptual abilities of Down's Syndrome children	ICO/Caden and Pesch	ICO Research Fund
89. Visual-motor development intertest reliability	ICO/Porter	Unknown
90. Auditory feedback in treatment of functional amblyopia	SCCO/Kirschen	SCCO
91. Dysfunction of auditory-visual integration in developmental dyslexia	SCCO/Griffin	Unknown
92. National myopia prevention program	FSC/Ludlam	Unknown
93. Improvement of stereophotogrammetry performance by vision training	FSC/Saladin and Rich	Unknown
94. Psychophysical effects of visual deprivation	UAB/Loop	NINCDS
95. A Tachistoscopic technique for treatment of amblyopia	NECO/Comerford	NECO
96. Visual characteristics of learning disabled children	NECO/Laudon	NECO
97. Treatment of functional amblyopia using Campbells' "stripe therapy"	NECO/Thorn and Comerford	NECO
98. Sensory and motor mechanisms in functional amblyopia	UCB/Flom	NIH
99. Neural effects of partial visual deprivation in humans; studies on meridional amblyopia	UCB/Freeman	NIH
100. VEPs in infants to determine sensitive period during which amblyopia may occur	UCB/Marg	Unknown
101. VER as a diagnostic tool with severely handicapped children	PU/Ludham	Unknown
102. Hue and saturation discrimination among patients with acquired color vision anomalies of retinal origin	NECO/Pease	Retinal
103. Psychophysical methods to identify retinal disease	UCB/Adams	NIH
104. Effect of eye movements on stimulus detectability	UCB/Cohn	NSF, NIH
105. Evaluation of retinal function with electroculogram ratio	IU/Afanador	NIH



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