




JOURNAL OF OPTOMETRIC EDUCATION

Volume 11, Number 1
Summer 1985


***Videotaping
Optometry
Students***

Association of Schools and Colleges of Optometry

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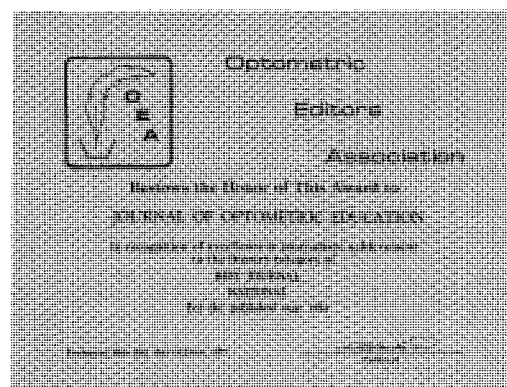
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Awarded "BEST JOURNAL—NATIONAL" by the Optometric Editors Association, June 1985, for the published year 1984.

The **JOURNAL OF OPTOMETRIC EDUCATION** is published by the Association of Schools and Colleges of Optometry (ASCO). **Managing Editor:** Patricia Coe O'Rourke. **Art Director:** Dan Hildt. Graphics in General. Business and editorial offices are located at 600 Maryland Ave., S.W., Suite 410, Washington, D.C. 20024 (202) 484-9406. **Subscriptions:** JOE is published quarterly and distributed at no charge to dues-paying members of ASCO. Individual subscriptions are available at \$15.00 per year, \$20.00 per year to foreign subscribers. Postage paid for a non-profit, tax-exempt organization at Washington, D.C. Copyright © 1985 by The Association of Schools and Colleges of Optometry. Advertising rates are available upon request.

ASCO Begins Strategic Planning

When I graduated from optometry school 17 years ago, the profession's schools and colleges were just rebounding from the low enrollments of the previous decade and the curriculum was entering an expansionary period. At that time the profession was dominated by the refractionist, the contact lens fitter and the dispenser. We assumed that national health insurance was just around the corner (especially since Medicaid and Medicare had gained acceptance); that solo practice had seen its heyday and that associateships were the new wave; that commercialism was finally waning and that the future of the profession was in our control. We even were doing some planning and self study. The Havinghurst Study and the Williamsburg Conference were attempts to make the profession look to its future in light of its past efforts.

When SUNY graduated its first class eleven years ago, the profession was beginning to expand its scope into ocular pharmacology. We talked at length about the use of technicians; we worried that automation would adversely affect the profession; and the schools and colleges of optometry were seen by some as beginning to lag behind the profession. The profession did little long-range planning; rather, its evolution happened as a result of pressure groups from within. "DPA's" and the "Medical Model" became the chant.

Remember just five short years ago when we were looking forward to the changes that the 80's would bring, how the more rapid pace was obvious and how nearly everyone began to feel a lack of control about the future? Things either accelerated (technology and instrumentation) or made dramatic shifts (caused by political swings, court actions, public policy decisions and the economic conditions). The profession was still swept up in the tide to redefine itself at the state level with limited debate about what would happen to its traditional base. It was at that time that ASCO, joined by AOA, said we must plan for tomorrow if we are to prepare our students to meet the needs of the future. How could the educational enterprise prepare graduates if it didn't have a clear picture of what the profession was to be 20, even 10 years, hence?

Since that time, not enough comprehensive and coordinated planning has been done by the profession to determine what that future will be, but much is occurring around us that will ultimately dictate our

destiny. Professionalism is being redefined, the nation's health care delivery system is undergoing drastic changes, the sources of health care payment have shifted, manpower needs are being reevaluated and the role and scope of the health provider is in transition. There is no question that change is occurring more rapidly than in the past and much of it appears to be taking place without optometry's input.

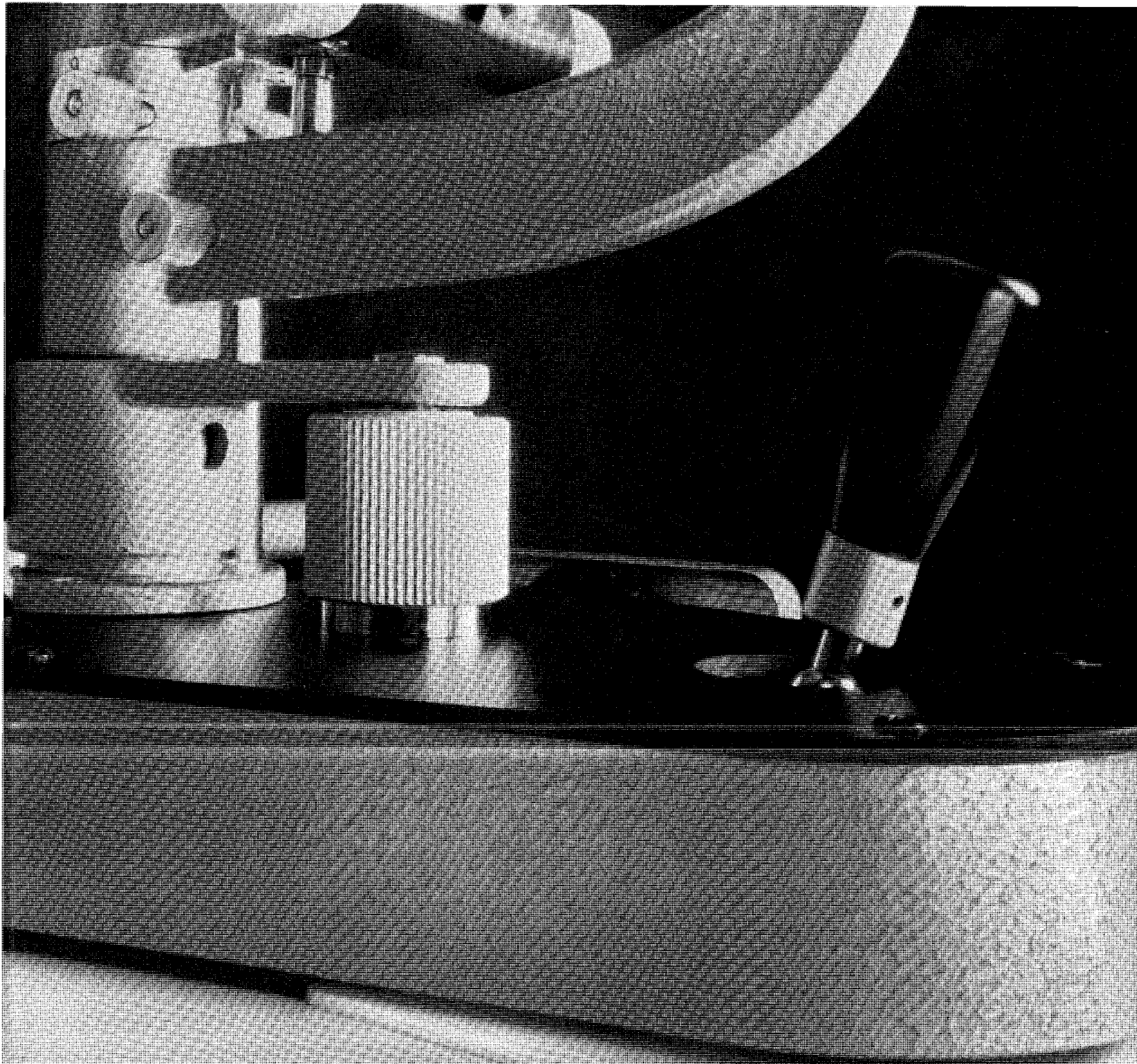
This rapid evolution has left the educational institutions to evaluate what preparation will be appropriate for the year 2005 (just 20 years away). The AOA/ASCO seven year effort to initiate a "public study" of the profession and the complementary strategic planning effort being initiated this summer by ASCO, are essential if the schools and colleges are to attempt to meet the needs of tomorrow's profession.

ASCO and its member institutions must attempt to ascertain what impact the future will have on the curricula and thus on the Class of 1995 and thereafter. To do this, we call upon the educational community and the profession at large to join ASCO in its long-range strategic planning effort under the guidance of the very well respected Academy for Educational Development, Inc., a not-for-profit planning, consulting and research organization. Specifically this long-range strategic planning effort will center on analysis of the optometric education industry and the opportunities and threats that will take place in the foreseeable future which might influence the direction of optometric education. To accomplish this will necessitate input from planners and policy molders from both within and outside optometry. (Ideally, we all would be better served if the "public study" also were to be undertaken.)

Change is difficult and often requires the risk of becoming vulnerable, but the alternative of doing nothing ultimately would make the profession even more vulnerable.



Edward R. Johnston, O.D., M.P.A.
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As the newly appointed American Optometric Student Association liaison to the Association of Schools and Colleges of Optometry, I am pleased to be able to present this report of AOSA activities. Since my appointment in January 1985, I have been asked a number of questions about AOSA which I would like to share with you.

- What does AOSA do for the student?

The national association cooperates with the allied organizations of optometry to speak out on behalf of the profession. The AOSA also voices student concerns within the optometry profession thereby strengthening the student role in the field of optometry. Student concerns during the past year have centered on educational financing, national board examinations and graduate placement.

- How does a member of AOSA voice his/her opinion?

Each school appoints/elects a trustee who serves as a voting member on the AOSA Board of Trustees. This board sets national policy for optometry students, administers the association

budget, negotiates for increased membership benefits, meets with representatives from all of optometry's allied organizations and voices student concerns at each of the schools of optometry. One of AOSA's primary objectives is to stress the influence and impact a student can have on the future of the profession. Students—the future of the profession—are the focal point of the AOSA.

- What are AOSA's goals for 1985-86?

The AOSA board hopes to increase both its membership—from the current 82%—and the membership benefits. The board plans to continue the association publication, *Foresight*, as well as the financial support of liaison positions to the allied organizations of optometry. AOSA also will strengthen the projection of a professional health care attitude to the public and to the profession. AOSA plans to improve the AOA/AOSA placement service and its communication with allied organizations of optometry and with schools of optometry.

- What plans have been made for the 1986 AOSA Congress?

The 1986 AOSA Congress will be held January 8-11, 1986, at the Chicago Marriott Hotel. According to AOSA Executive Director Carol Freihaut, approximately 1,000 students are expected at next year's congress. The congress will include speakers, exhibits, social events and entertainment. In addition to the fun of attending a congress, students are given the chance to meet and interact with other students from all over the U.S., Puerto Rico and Canada. Students are entitled to attend any continuing education course offered during the entire congress for the minimal registration fee. There will be fifteen speakers in Chicago who will cover a broad spectrum of topics. A new feature will be the exhibition of books and publications by ophthalmic publishers. Attendance seems to be increasing each year and we are looking forward to another successful congress in Chicago!

LETTERS

On behalf of the Southern California College of Optometry I wish to thank you for printing "Profile, The Southern California College of Optometry," which appears in the Winter 1985 issue of the JOURNAL OF OPTOMETRIC EDUCATION. I've received many complimentary comments on the article from SCCO faculty, alumni, trustees and administrators.

A copy of the magazine was on display, last week, at our educational exhibit booth at the 86th Annual California Optometric Association Congress in Reno, NV. A number of our alumni noted that they had read the article with great interest and pride in their alma mater.

I appreciate your printing all of the copy I submitted to you for publication. As I mentioned to you earlier, SCCO has much to be proud of, and like anyone else, we like to "toot our own horn" whenever given the opportunity.

I look forward to working with you in the future as I keep you informed on the various activities of the College. Again my thanks for printing SCCO's profile.

Sincerely,

Debra J. Christensen
Director of Public Information

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1985 OEA Journalism Awards Announced

Winners of the 1985 Journalism Awards Contest of the Optometric Editors Association (OEA) were presented award certificates at the annual breakfast meeting June 26, 1985, in Las Vegas, Nevada, by Charles Brownlow, O.D., president. Winners in the fourteen categories were:

Best Journal—National—First place, *Journal of Optometric Education*, Patricia C. O'Rourke, managing editor. Second place, *Journal of Optometric Vision Development*, Martin Kane, O.D., editor.

Best Journal—State/Regional—First place, *Journal of The Illinois Optometric Association*, J.B. Meloan, O.D., editor. Second place, *Journal of the New York State Optometric Association*, Irving Shapiro, O.D., editor.

Best Newsletter—National—First place, *ICO Image*, Geri Verderber, editor. Second place, *OEP News*, Elise Kurkjian, editor.

Best Newsletter—State/Regional—First place, *The Keystone*, Lisa Carroll Belcastro, editor. Second place, *Virginia Optometric Association Newsletter*, Mr. Bruce B. Keeney, editor, and *Eureka!*, Carmine A. Guida, O.D., editor.

Best Newsletter—Local—First place, *Globe-Examiner*, Byron Y. Newman, O.D., editor.

Most Improved Publication—First place, *Optometric Council News*, Jeffrey L. Kraskin, O.D., editor. Second place, *Texas Optometry*, Beverly K. Wiatrek, O.D., editor, Ted Grosvenor, O.D., associate editor.

Best Editorial—National—First place, "Making Sense Out of Certification," by Richard H. Kendall, O.D., published in the Spring 1984 issue of the *Journal of Optometric Education*, Patricia C. O'Rourke, managing editor. Second place, "Behavioral Care: Stress the Benefits!" by Charles W. McQuarrie, O.D., published in the November 1984 *OEP News*, Elise Kurkjian, editor.

Best Editorial—State/Regional—First place, "Roots," by Roger R. Seelye, O.D., published in *The Michigan Optometrist*, August 1984, William D. Dansby, C.A.E., editor. Second place, "Drugs and Functional Optometry," by Nathan Flax, O.D., published in the *Journal of the New York State Optometric Association*, Spring 1984, Irving Shapiro, O.D., editor.

Best Editorial—Local—First place, "A Deal is a Deal is a Deal," by Byron Y. Newman, O.D., published in the June-July 1984 *Globe Examiner*.

Best Technical Article—National—First place, "Accommodative Response to Video Display Terminals," by Donald B. Apodaca and Thomas N. Johnson, published in *Curriculum II*, Charles B. Margach, O.D., technical editor,

Frances Gaul, managing editor. Second place, "Review Clinic: A Measure of Quality," by Samuel D. Hanlon, O.D., and Nina Jue, O.D., published in the Winter 1984 *Journal of Optometric Education*.

Best Technical Article—State/Regional—First place, "The Visual Status of Juvenile Offenders," by Maury M. Kessler, O.D., published in *The Michigan Optometrist*, William D. Dansby, C.A.E., editor. Second place, "Corneal Exhaustion Syndrome," by Sue Ludwig, O.D., published in *Texas Optometry*, Beverly K. Wiatrek, O.D., editor, and Ted Grosvenor, O.D., associate editor.

Best Non-Technical Article—National—First place, "Time, Money Make Investment Costly for O.D. Degree," by Lisa Braun, published in the Winter 1984 issue of *ICO Image*, Geri Verderber, editor. Second place, "ILAMO: Partner in Optometric Education," by Maria Dablemont, Librarian/Archivist, published in the Summer 1984 issue of the *Journal of Optometric Education*.

Best Non-Technical Article—State/Regional—First place, "The Business of Optometry . . . And Computers," by Louis E. Love, O.D., published in *Texas Optometry*, May 1984, Beverly K. Wiatrek, O.D., editor, Ted Grosvenor, O.D., associate editor. Second place, "O.D. Talks to Emergency Medical Technicians," by Robert A. Goodman, O.D., published in the Fall 1984 *Journal of the New York State Optometric Association*, Irving Shapiro, O.D., editor.

Best Non-Technical Article—Local—Second place, "Prevent Blindness by Eye Care," by C.J. Ian, D.Opt., published in the "Bulletin" Lions Club of Negombo, Negombo, Sri-Lanka.

IOOL 1985 General Delegates Meeting

The 1985 General Delegates Meeting of the International Optometric and Optical League was held May 7 to 11th in Stockholm, Sweden. The 47 Delegates from 23 member countries discussed the current status of the profession of optometry worldwide and approved an action plan of work for IOOL committees for the coming 12 months. The plan requires the IOOL to report on political, legislative and economic

(continued on page 31)



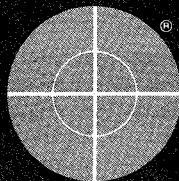
Pictured left to right are: Dr. Jack Von Bokern (AOA); Mr. Lee Smith (ASCO-Executive Director); Dr. Ed Marshall (NOA); IOOL President Professor David Pickwell; AOA President Al Bucar; Mrs. Linda McQuarrie (OEP-Executive Director); Dr. Charles McQuarrie (AOA); Dr. Burt Holmes (USA).



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Figure 1.

A novice second year clinician conducts her first eye examination on an actual patient in an exam room specially equipped for faculty observation and video recording.



Figure 2.

The faculty member observes the student's examination through a mirrored viewing window while video recording the student's performance along with a "voice-over" audio recording of his impressions of the student's strengths and weaknesses.



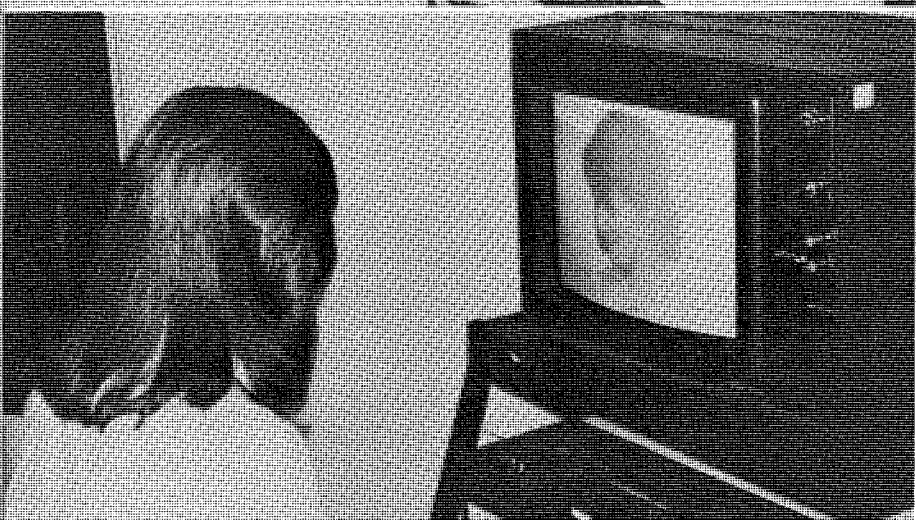
Figure 3.

The faculty member and the student review her performance immediately after the examination is finished. They use a standardized clinical skills inventory (table 2) for this oral review. The student is then given the video tape with running faculty commentary to review at a time convenient to her.



Figure 4.

The student reviews the tape, listening to the faculty comments, at a time and place separate from the clinical encounter. The student is encouraged to take notes for further discussion with the faculty member.



Videotaping Optometry Students

Felix M. Barker, O.D., M.S., F.A.A.O.

Introduction

Video taping of the patient care activity of health care students is a convenient and useful way to record the details of their clinical performance. Such a video record can be viewed by faculty to evaluate student performance (1-5) or it can be viewed by the students involved as a means of providing them with important feedback about their interpersonal skills and patient rapport. When this student review occurs jointly with faculty (2, 6-10) and/or patient (1, 11-14) viewing and discussion there can be significant growth of doctor/patient and case history skills.

One drawback to a joint faculty/student tape review process is that it is frequently difficult to provide sufficient faculty time or to coordinate faculty and student schedules well enough to allow such a one-to-one review session to occur (7, 9, 15). An alternate procedure has been suggested that addresses the issue of time for faculty feedback. In this technique, faculty input to the video taped student performance is audio recorded as a "voice-over" sound track on the tape as it is recorded in the clinical instructional setting (15-17). By simultaneously preserving faculty commentary on the tape, feedback is provided more easily, immediately and reliably. The student can subsequently

review the tape in private, still receiving key faculty input. The educational effectiveness of the faculty resource expended is maximized because the instructor's comments are recorded and they are heard by the student in direct relationship to the video image of the clinical performance. Used in this way, the tape can enhance feedback and can serve as a stimulus to foster meaningful faculty/

"The educational effectiveness of the faculty resource expended is maximized because the instructor's comments are recorded. . ."

student discussion outside of the normally busy clinical environment.

Such a video feedback program has been instituted during the early patient examinations of the second year optometry students at the Pennsylvania College of Optometry (PCO). As employed at PCO, the technique involves direct observation of a novice intern by the instructor through a mirrored window with concurrent video taping and audio recorded instructor commentary (Figures 1-5 depict this process).

Methods

After receiving their traditional classroom and laboratory training of approximately eighteen months duration, students are scheduled to examine their first actual patients in the usual clinical setting. While they examine each patient (Fig. 1), they are closely observed and supervised by a faculty member through a mirrored viewing window (Fig. 2). These experiences are video taped (with written patient consent) using a simultaneous "voice-over" audio recording technique which electronically combines faculty commentary with the ongoing student/patient dialogue (Fig. 2). Table 1 outlines the major components of the audio/video system that was used. Immediately following the patient encounter, a brief oral discussion of the student's performance takes place (Fig. 3) using a clinical skills inventory (Table 2). Students then review their performance on the video tape (Fig. 4) while receiving the instructor's audio recorded feedback. Student questions that are formulated on the basis of this audio/video feedback stimulus can then be discussed by student and faculty beyond the patient care encounter (Fig. 5).

For each student, the above described program consisted of four patient encounters spaced one month apart. At the conclusion of this training phase, students were entered into a regular third year internship (1½ days/week of clinical activity). Five months later, a questionnaire which used a Likert type scale of agreement/disagreement was given to both students and faculty regarding their impressions of the early patient examinations and

Felix M. Barker, II, O.D., M.S., F.A.A.O., is an associate professor of optometry at the Pennsylvania College of Optometry. Dr. Barker also contributes "Resource Reviews" to the Journal of Optometric Education.

TABLE 1

Listing of the major audio/video components* used in the video feedback system. These items were installed in permanent security mountings for use in the clinical setting at any time.

1. Video camera, Ultracon, B&W, low light and infra-red sensitive, (RCA, TC-2011/U8)
2. Camera lens, Auto-iris, (Cosmicar, ES-3-1:1:4)
3. Video tape recorder, table top, 1/2 in VHS format, (Magnavox, 8400)
4. Exam room microphone, pressure zone type (PZM), Radio Shack, #33-1090)
5. Faculty microphone, cardioid with on-off switch, (Radio Shack, #33-1071)
6. Sound mixer, stereo/mono (used in mono mode), (Radio Shack, #32-1105)
7. Television, B&W, (RCA, AJR-120W)
8. Dim red light bulb, 40-60 watt installed with dimmer overhead in exam room to enable good video imagery when lights are turned out for retinoscopy, etc.
9. Miscellaneous cables, connectors, etc.

*These items were purchased for under \$2000.00 per clinic set-up after much "shopping around." It is recommended that educators contemplating such a system employ a local consultant knowledgeable about audio/video technology and sources before purchasing or installing any component.

the video tape feedback program (Table 3). Respondents to the questionnaire were encouraged to make specific written comments regarding their impressions.

Results

The results of the questionnaire are presented in Figure 6. Not all students and faculty responded to questions about the video tape system because some video tape units had mechanical problems. Responses from those actually using the systems are summarized in the figure, along with responses from all participants about the early patient examination program in general. Interesting anecdotal comments concerning the early patient examinations and the video feedback program are also summarized in the discussion section of this report.

Discussion

The video recording of early patient examinations provides the student with a vivid and realistic impression of his/her performance. Simple observation of this video record by the student may be helpful by providing visual feedback about interpersonal and interviewing skills during the exam. The use of "voice-over" recorded faculty feedback on the video tape can enhance the effectiveness of this tape review process (15-17) because faculty comments are

recorded and because the commentary is synchronized on the tape, so that it is heard by the student at the same time that his/her video recorded performance is visualized on the TV screen. The recorded nature of the commentary also allows the student to listen to it at a more convenient time, in a more relaxed atmosphere.

The simultaneous recording of faculty commentary on a student's video tape record takes advantage of the time already scheduled for the faculty/student patient care encounter. It conserves faculty time (15-17) by allowing

TABLE 2

Clinical skills inventory excerpted from a clinical syllabus that was used in evaluating second year interns conducting their first few eye exams at PCO.

I. Attitudes and Values

1. Patient rapport
2. Punctuality
3. Preparation
4. Grooming
5. Conscientiousness
6. Ethics

II. Technical Skills

1. Case history
2. Interviewing and oral communication skill
3. Record legibility, POMR
4. Visual acuity
5. Rx neutralization
6. Cover test
7. Pursuits/saccades
8. NPC
9. PD
10. Pupil reflexes
11. Color vision
12. Stereopsis
13. Field screening
14. Blood Pressure
15. Keratometry
16. Objective refraction
17. Subjective refraction
18. Phorias
19. Ductions
20. Gradient
21. Amplitude of Accommodation
22. NRA/PRA
23. Near JCC
24. Trial frame
25. Add determination
26. Biomicroscopy
27. Goldmann tonometry
28. Direct Ophthalmoscopy
29. Indirect Ophthalmoscopy

TABLE 3

Selected questions (1-10) of the questionnaire administered to students (s) and faculty (f) about their impressions of the early clinical experience program and the video feedback system. Space for written comments was provided with each item of the questionnaire.

1. Oral critique after examination of patient was helpful to development of clinical skills. (N(s) = 104; N(f) = 10)
2. Oral critique after examination of patient was helpful to development of self confidence. (N(s) = 114; N(f) = 9)
3. Watching videotape was helpful to development of clinical skills. (N(s) = 82; N(f) = 9)
4. Watching videotape was helpful to development of self confidence. (N(s) = 81; N(f) = 7)
5. Listening to recorded instructor comments was helpful to development of clinical skills. (N(s) = 116; N(f) = 8)
6. Listening to recorded instructor comments was helpful to development of self confidence. (N(s) = 116; N(f) = 7)
7. Student was self conscious about being viewed through the mirror window. (N(s) = 109; N(f) = 10)
8. Student was self conscious about being videotaped. (N(s) = 100; N(f) = 10)
9. Early patient examination experience with observation is an effective learning program. (N(s) = 115; N(f) = 10)
10. Videotape with recorded feedback is an effective learning system. (N(s) = 111; N(f) = 10)

constructive comments about the student's performance to be preserved alongside the video recording. This process enhances the effectiveness of faculty/student feedback without requiring the additional, extensive, one-to-one contact time that would be necessary if student and faculty jointly review the tape in its entirety. After the student has viewed the tape, additional in-depth faculty/student discussion can occur on a problem oriented, more time-effective basis.

Setting up such an audio/video system (Table 1) is relatively simple and inexpensive. Since most of the components are commonly used in home video recording, the system is easy for faculty and students to operate. In the PCO program, students are required to purchase their own, inexpensive, 1/2" VHS video tapes. Supplying of tapes is handled by the bookstore and therefore constitutes no additional departmental administrative burden. The mirrored viewing windows are a resource which improves the viewing capability a great deal but which can be avoided as a construction expense by using the on-line video image produced by the system to observe the exam in progress.

The questionnaire impressions depicted in Figure 6 indicate a generally positive attitude on the part of students and faculty concerning their experiences with early patient examinations and with the video feedback system. These results are consistent with other reports (2, 6, 7, 9) that indicated a high level of acceptance by residents/students of clinical video taping programs which utilized a joint faculty/student tape reviewing process. Kirby conducted an opinion survey of students involved in a clinical video taping program. A report of Kirby's findings (15) indicated an acceptance of the joint faculty/student tape reviewing process, as well as an equivalent acceptance of the "voice-over" running commentary technique. Both of these methods were reported in Kirby's survey to be favored over simple student review of the tape without associated faculty feedback.

Although favorable in their response to the PCO program, students were less enthusiastic over certain areas of the program. By referring to Figure 6, it can be seen that there was approximately 50% agreement/disagreement by students concerning the issues of developing self confidence (item 4), of self consciousness at being observed (item 7) and of self consciousness at being video

taped (item 8). These results are not surprising, since it is normal for a novice intern to be nervous during the initiation of patient examinations. The addition of faculty observation and video taping can be expected to heighten a student's sense of anticipation.

It is important, therefore, that the early examination program and the video tape feedback technique be used in a true spirit of cooperation between the faculty and student. With a growth-oriented instructional relationship, the use of these teaching tools can serve as a significant focus of collaboration between student and faculty. With proper faculty/student rapport, the intern can even respond with a sense of relaxation in the knowledge that should a problem arise in the patient examination, there is a faculty member immediately available to back up the student. This concept of collaboration can even be more formalized by the addition of a hidden microphone ("bug-in-the-ear") that the faculty can use to provide direct feedback to the student, during the exam-in-progress without patient knowledge (18). Needless to say, if these tools are used in a situation of more negative faculty/student rapport, they are likely to merely heighten anxiety rather than

foster growth. The overall positive results of this report's questionnaire are probably attributable in large measure to a fundamentally positive clinical teaching rapport between faculty and student at PCO.

Consistent with the responses shown in Figure 6, comments made by faculty indicated strong acknowledgement of the benefits of the early patient examinations and the video feedback system for improved clinical education. However, some faculty did express concern about the length of time necessary to conduct these closely observed experiences. This seemed to be less of a concern among faculty members who were more interested in the use of these tools or who participated more actively in the curricular design process that led to their development. It is therefore prudent for other departments considering these tools to carefully weigh the resource outlay necessary for implementation and to conduct faculty training sessions in the use of these techniques. It is also very useful when the decision to add these types of teaching tools can be made in the context of faculty curriculum workshops that address the more general issues of clinical educational activity design.

Faculty comments also seemed to in-



Figure 5. The student and faculty may discuss the performance further in terms of specific issues raised in the student's review of the tape.

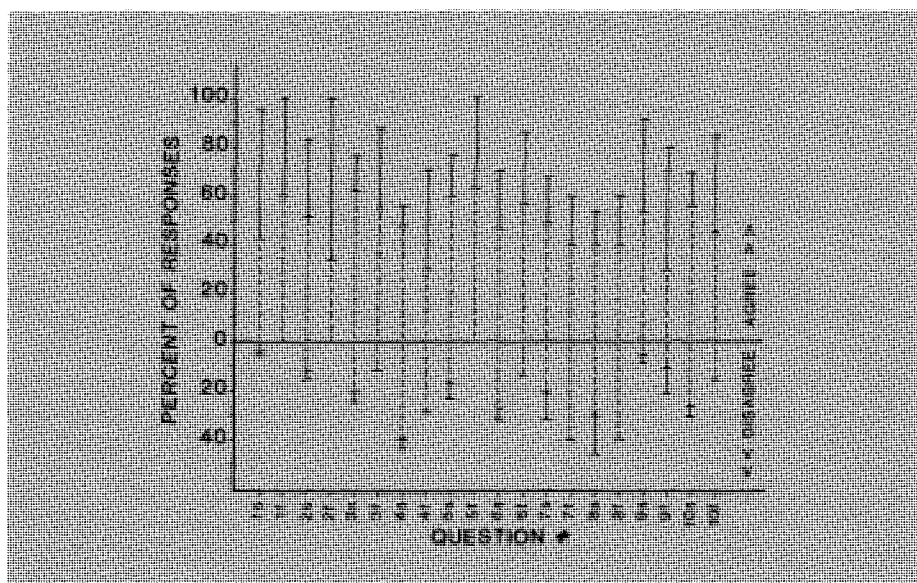


Figure 6. Graphic representation of responses to selected questions (1-10) of the questionnaire which was administered to students (s) and faculty (f) concerning their impressions of the early patient examination program and the video feedback system. (agree/disagree -----), (strongly agree/strongly agree _____).

indicate that at the present stage of development, the video feedback technique is most useful for training interpersonal skills rather than technical skills. This is consistent with the report of Jackson and Pinkerton (7) and may, in part, be related to the inherent limitations of the video technology employed. For example, procedures such as subjective refraction may be more difficult to observe because the video image is not sufficiently magnified. The addition of a zoom capability to the TV camera may help in this regard as would video attachments to the biomicroscope and the indirect ophthalmoscope.

Finally, there were comments indicating that some students did not view their tapes. This may be due to inadequate review facilities, inadequate time, lack of interest or genuine self consciousness at observing oneself on tape. One possible approach to ensure that this student review process occurs is to assign programmed activities for the student to perform while watching the tape. Specifically, it may be useful for the student to time each procedure and/or to write a brief self-analysis of his/her performance which is stimulated by provocative questions.

In the opinion of those involved in the PCO program, the observation and video taping of early patient examinations with feedback has proved to be a positive addition to the clinical educational process. It remains for educational research to scientifically validate the benefits of these techniques and to

stipulate their most effective applications to clinical training.

Summary

This report describes a newly developed clinical educational technique involving video taping of the early patient examinations of second year optometry students with simultaneous "voice-over" audio recording of instructor commentary. The impressions of students and faculty as exemplified by a questionnaire indicate that the technique is well accepted and is subjectively effective at enhancing the quality of clinical education when used in conjunction with the early patient examinations of novice clinicians. □

Acknowledgements

The author gratefully acknowledges the support of Ms. Jane Timmons Stein, Mr. Jerry Pearlman and Ms. Libby Pearlman for the artwork and photography. Thanks are given to Ms. Marita Krivda, Visual Science Librarian, for professional assistance with the references. Special thanks are extended to Mr. Ron Davidoff, Director of Instructional Media and Mr. Robert Ellis, Sr., Director of Technical Services, for their extensive work in designing and setting up the audio/video system used.

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SUSTAINING MEMBER NEWS

Sustaining Members support ASCO initiatives on behalf of the optometric education community. Sustaining members are listed on the inside front cover of each issue. Membership is open to manufacturers and distributors of ophthalmic equipment and supplies, and pharmaceutical companies.

CTL, Inc. Expands Product Line

CTL, Inc., the Raleigh, North Carolina contact lens firm first to manufacture and market cosmetically-tinted soft lenses in the U.S., has announced the addition of three new soft contact lens products to its best-selling line of CustomEyes™ COSMETIC tinted soft lenses. The first new product, the CustomEyes™-38L CLEAR, represents the introduction of a 100% CTL-manufactured polymacon soft contact lens to the marketplace. "Our new CustomEyes™-38L CLEAR combines state-of-the-art computerized lens designs and ultra-lathing manufacturing technologies to produce a lens which out-performs most other lenses in the industry," states Dr. Alan J. Touch, chairman and developer of many of the soft lens materials and designs in use today. "By minimizing the overall lens mass and incorporating some new design elements, we've made a lens with better overall handling, centering and comfort characteristics."

CTL, Inc.'s second new product, the CustomEyes™-38L LITE, is a "lightly" tinted version of CustomEyes™-38L CLEAR which enhances the user's ability to handle the lenses, particularly when dropped. Company officials state that the new LITE lens is the perfect alternative for patients who don't want to change their eye color with the Company's COSMETIC line of tinted lenses yet desire a lens with better visibility.

CTL, Inc.'s third new product entry, the CTL-M™ lens, is the industry's first FDA-approved tinted soft contact lens designed specifically for cosmetic masking of corneal disfigurements and other ocular prosthetic conditions. The lens features a semi-opaque black, tinted pupil/iris area with a tinted brown or blue iris option and is used primarily in specialty optometric contact lens and ophthalmological practices.

Scratch Resistant Coated Lens Now Available from Vision-Ease

The SRC™ lens, an in-mold, hard coated CR-39 lens with maximum lens clarity and superior scratch resistance is now available in both semi-finished single vision and multifocal lenses from Vision-Ease, a worldwide manufacturer of optical lenses.

An invisible, abrasion-resistant coating is applied to the lens front surface during the manufacturing

process, preventing seg-line build-up and run-off blur that can develop with traditional dip coatings.

The front surface cosmetic quality and lens clarity of the SRC lens is equal to that of an uncoated CR-39 lens. Surfacing and dyeing are completed on the back side of the lens.

Vision-Ease, a unit of BMC Industries, has manufacturing facilities in St. Cloud, Minneapolis, and Ft. Lauderdale, Florida, and 18 distribution centers throughout the United States and Canada.



International Hydron to Manufacture Lenses in China

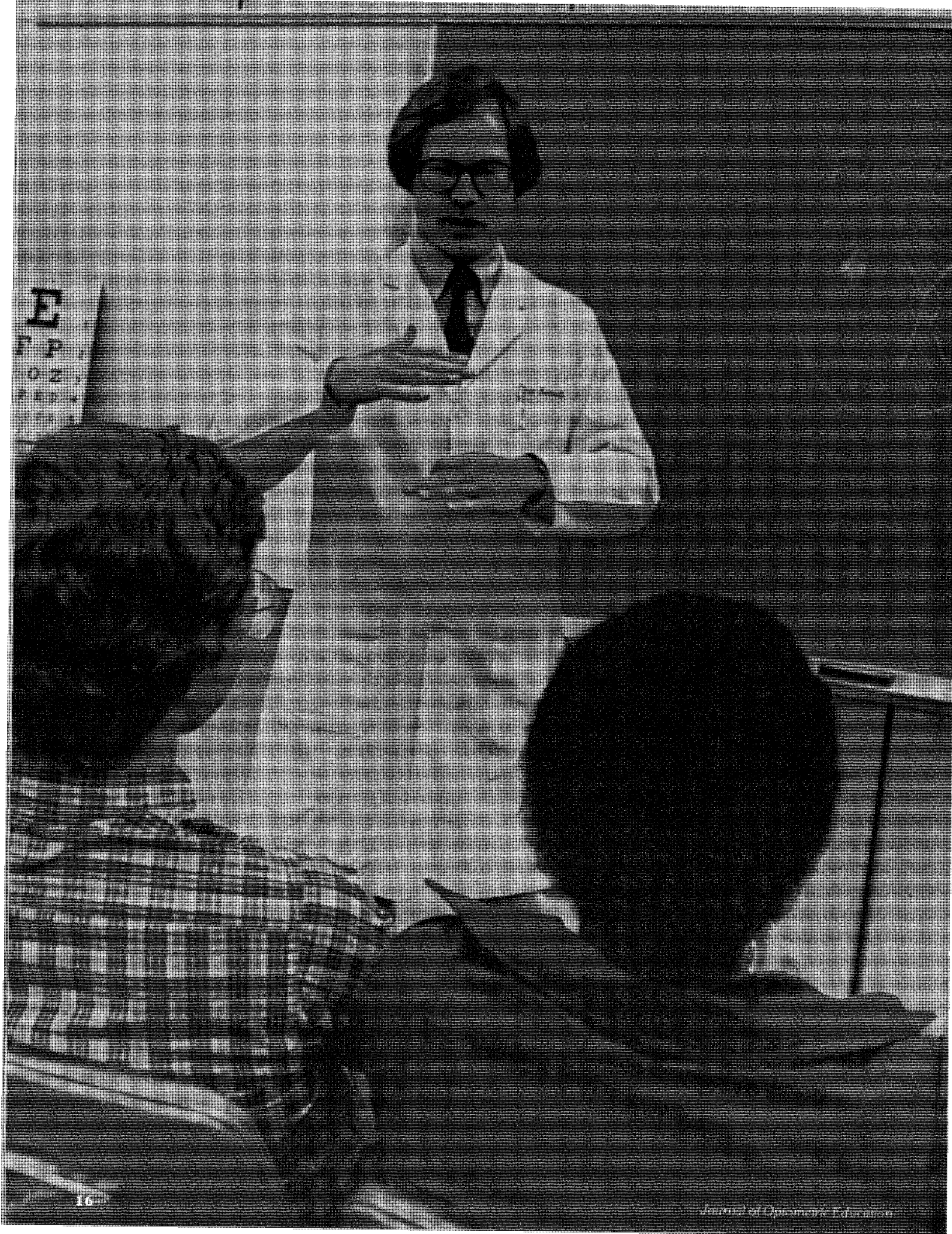
Pictured above are Jerome Feldman, president of National Patent Development Corporation, Dwight Akerman, O.D., of International Hydron, a subsidiary of National Patent, and Martin Pollak, president of International Hydron. The three were in China to set in motion Hydron's newly-signed joint venture to manufacture and market soft contact lenses.

Pollak announced that the company has finalized an agreement with Globe Biotechnology Development Corporation of Shanghai, China, for a 50/50 joint venture. The new joint-venture, Spin Cast Contact Lens Corporation, Ltd., will establish China's first facility for the manufacture of soft contact lenses. Martin Pollak also announced that International Hydron has signed a preliminary agreement to form a second

50/50 joint-venture with Peking Optical Company of Peking. This joint-venture company will be known as Peking Contact Lens Co., Ltd.

The contact lenses will be produced by cast molding and International Hydron's new, advanced spin-casting method which will assure enough product to meet the expected large demands of China's huge population. International Hydron will provide the joint-venture with technology and equipment, and will be responsible for the training of personnel. The Chinese will process and market the lenses in China and provide the manufacturing facilities and personnel. International Hydron will receive raw materials and/or finished products of Chinese origin in lieu of Chinese currency.

The China market for vision correction is estimated to be approximately 500 million. Currently 1-2% of those people wear contact lenses. It is also estimated that 60% of all contact lenses fit are now soft lenses.



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Academic Support Services

Effectiveness of Tutoring Evaluated

David A. Heath, O.D.

Introduction

The tutorial program at the New England College of Optometry, established in 1981, provides for both group reviews in select courses and individual assistance where necessary. Referral sources for personal counseling and study skills counseling are available as well.

During the first year of operation, the tutorial service received strong support by both students and faculty. Because the issue of supplying adequate academic support services was an important one, one that represented a growing need, an article describing the service was written. The article, appearing in the 1983 Spring issue of the *Journal of Optometric Education*, was written one year following program implementation.¹ The shortcoming of the 1983 article was that the measure of program success was largely anecdotal with no objective analysis performed.

During the 1983/84 academic year, careful records of student use and performance were kept. This paper will discuss both the need for and the effectiveness of the tutorial service. In particular, a comparison of group vs. individual assistance will be discussed.

Background

Before an educational institution implements or expands its academic support services, the institution must be convinced that the need exists. In 1980, the Carnegie Council on Higher Education published a report entitled, "Three Thousand Futures; The Next Twenty

Years for Higher Education."² The report indicates that as the baby boom generation passes into adulthood, a dramatic decline in the 18-24 year old age group (traditionally considered the primary college applicant pool), will occur, bottoming out in 1997. The effects of this decline are quite debatable and the significance largely depends on the ability of colleges to tap other sources of applicants. Also, it is important to differentiate the concerns of undergraduate and graduate or professional institutions. The Carnegie Coun-

"The drop in both mean G.P.A. and low range scores may indicate the acceptance of students with scores lower than in previous years."

cil predictions for graduate education seem less perilous than for the undergraduate with the success of a given institution or field largely depending upon recruitment and changes in the educational demands of competing fields.

Reports of the Psychological Corporation³ show that the number of individuals taking the OCAT's between 1972 and 1982 peaked at 4,173 in 1975 and has since declined to 2,168 in 1982. The Association of Schools and Colleges of Optometry's annual analysis of the grade point averages for entering classes (1977-1982), shows a relatively stable picture.⁴ There exists a slight peak in terms of mean G.P.A. at 3.295 in

1978 with a subsequent decrease to 3.169 in 1982. Of greater interest is that in the last couple of years reported, the low end of the G.P.A. range has dipped to an average of 2.439 from 2.591 in 1980. The drop in both mean G.P.A. and low range scores may indicate the acceptance of students with scores lower than in previous years. This is not to say they are unqualified, but it may indicate that there is an increased number of students at risk for experiencing academic difficulties.

The Carnegie Council provided the following observation:

"We expect that students will be more nearly the center of attention on campus during the next 20 years than in the past 10. They will be recruited more actively, admitted more readily, retained more assiduously, counseled more attentively, graded more considerably, financed more adequately, taught more conscientiously, placed in jobs more insistently, and the curriculum will be more tailored to their tastes."

This quote addresses several issues, two of which vitally concern colleges of optometry. One issue is recruitment. With the decreased number of students taking OCAT's, and presumably, an associated decrease in applicants, colleges must increase recruitment efforts to compete with other fields for students. The second issue is retention. Once students are matriculated, they must be retained, and in that process they must attain the skills and knowledge necessary for the practice of optometry. Tutoring is one way to insure that those abilities are acquired by the struggling student.

Tutoring 'per se' is by no means a recent phenomenon, although the reaction to it would suggest that to be the

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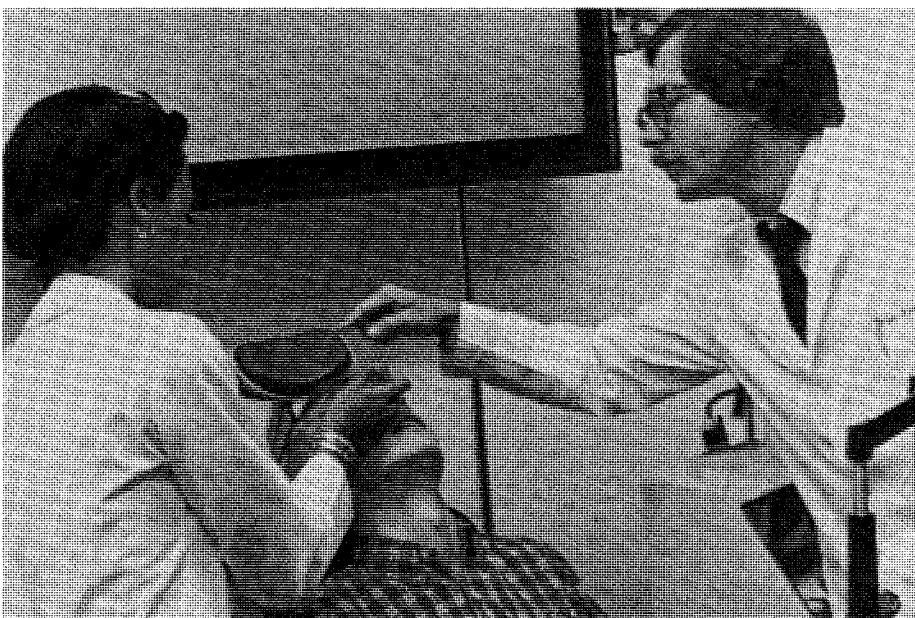
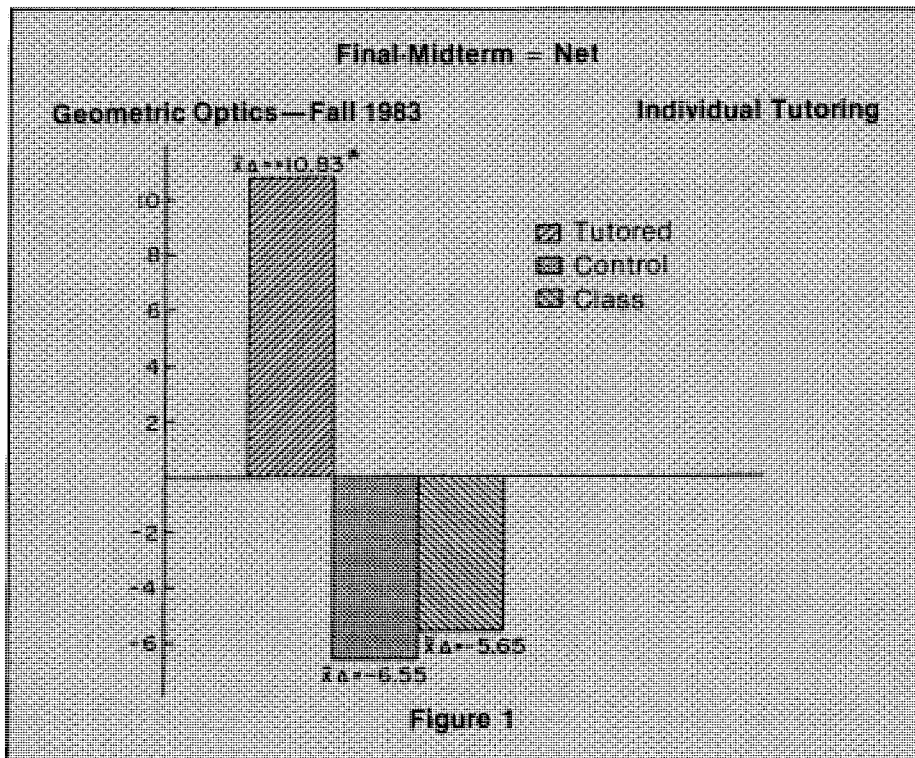
TABLE 1
Tutoring Services

Utilization; 1983-1984

Individual Sessions—O.D. I				
Quarter	Student Hrs.	#Students	# v 5	# v 10
Fall	52½	7	4	1
Winter	133½	17	7	4
Spring	147½	19	8	6

Total # of student hrs. = 133½

Total # of students using individual tutoring = 22



case. The use of tutoring, although preparatory or remedial in nature, has historically reflected environmental pressures and has been largely contained within undergraduate institutions. A review of the literature reveals few articles dealing with either the need for tutoring or tutoring models in the professional school setting much less its effectiveness.

The tutoring model developed at the New England College of Optometry provides four services within its concept of academic support. These include individual peer-tutoring, peer-run group reviews, study skills counseling via specialists in the external community and personal counseling with either our school psychologist or community agencies. The internal services are provided at no cost to the students.

The individual tutoring arrangement is available to all students upon request. The way in which a student enters into the tutoring program is quite varied. For some it is self-referral after students have tried the group reviews and found them insufficient for their needs, or after failing a midterm. A few, being aware of their limitations in a particular subject area, seek tutoring at the beginning of the instructional program. And others are referred by faculty, students or administration.

Each student seeking an individual tutor meets with the director of the tutoring service. The student's areas of concern, weaknesses, strengths, study behavior and personal preferences are discussed and a tutor is assigned in accordance with the student's needs. It is then up to the student and his or her tutor to arrange a tutoring schedule. The amount of time spent in tutoring is flexible although a certain amount of regularity is recommended. For some, a couple of hours may be all that is necessary to clarify areas of confusion. Others may require several hours per week. Flexibility in meeting the individual needs of students is essential.

Analysis

In the 1983/84 academic year, individual tutoring was provided to first year optometry students for a total of 333½ hours (see Table 1). Twenty-two first year optometry students used the service. Student use of individual assistance increased throughout the year with the greatest increase occurring in the winter quarter. The area in which assistance was requested most frequently

was optics. As a result, student performance in this area was singled out for an analysis of the effectiveness of individual peer-tutoring. Specifically, tutoring for geometric optics (offered in the fall quarter) and visual optics (offered in the winter quarter) will be evaluated. These two courses were selected because they are taught by the same faculty member, indicating a constancy in teaching style, a similar course content and a consistent exam format. With these elements common to both courses, the courses can be analyzed individually and in a combined fashion.

"The student's areas of concern, weaknesses, strengths, study behavior and personal preferences are discussed and a tutor is assigned in accordance with the student's needs."

For the individual courses and the courses combined, an "experimental" group and a "control" group were established. The experimental group was composed of students who received 3 or more hours of individual tutoring prior to a given exam. There were six students in geometric optics and five in visual optics with a combined group of eleven students. (It should be noted that tutors do not have access to the exams prior to the examination date.)

Deciding on the criteria which defined a "control" or comparison group was difficult. For comparison purposes, it was necessary to isolate a group of students with academic skills similar to those seeking tutoring but who for various reasons had not chosen to do so themselves. The criteria established were that the group would consist of students who had received two or more grades below the C level out of 4 exams administered in optics over the two

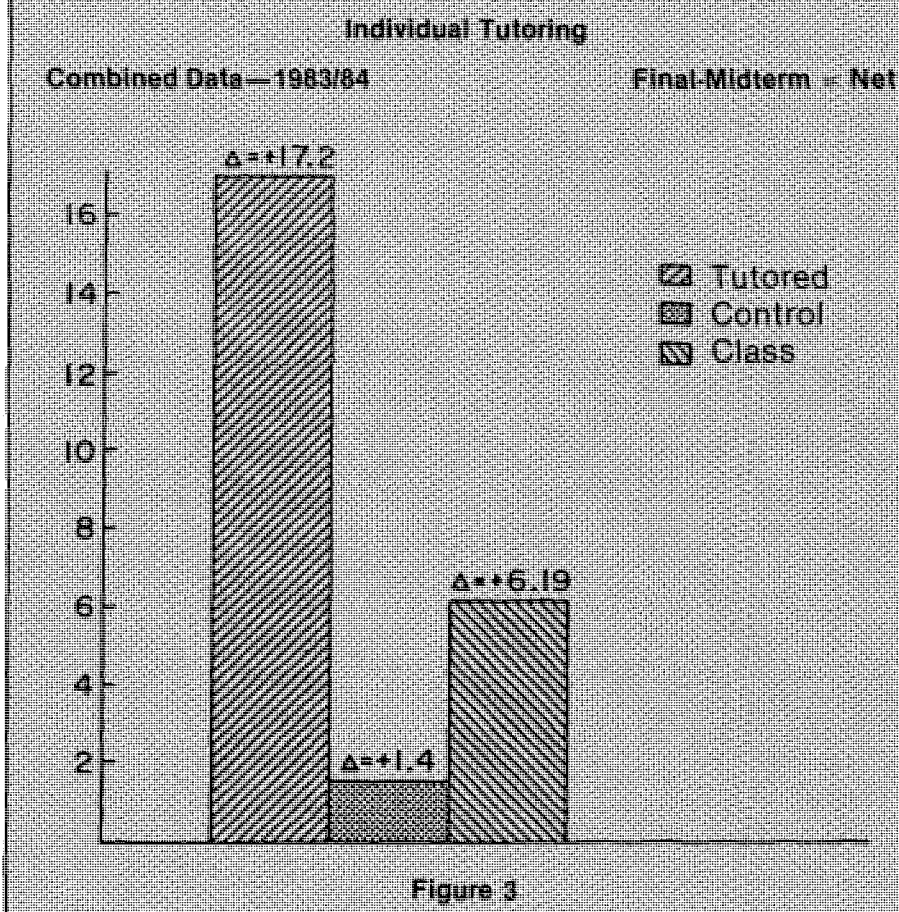
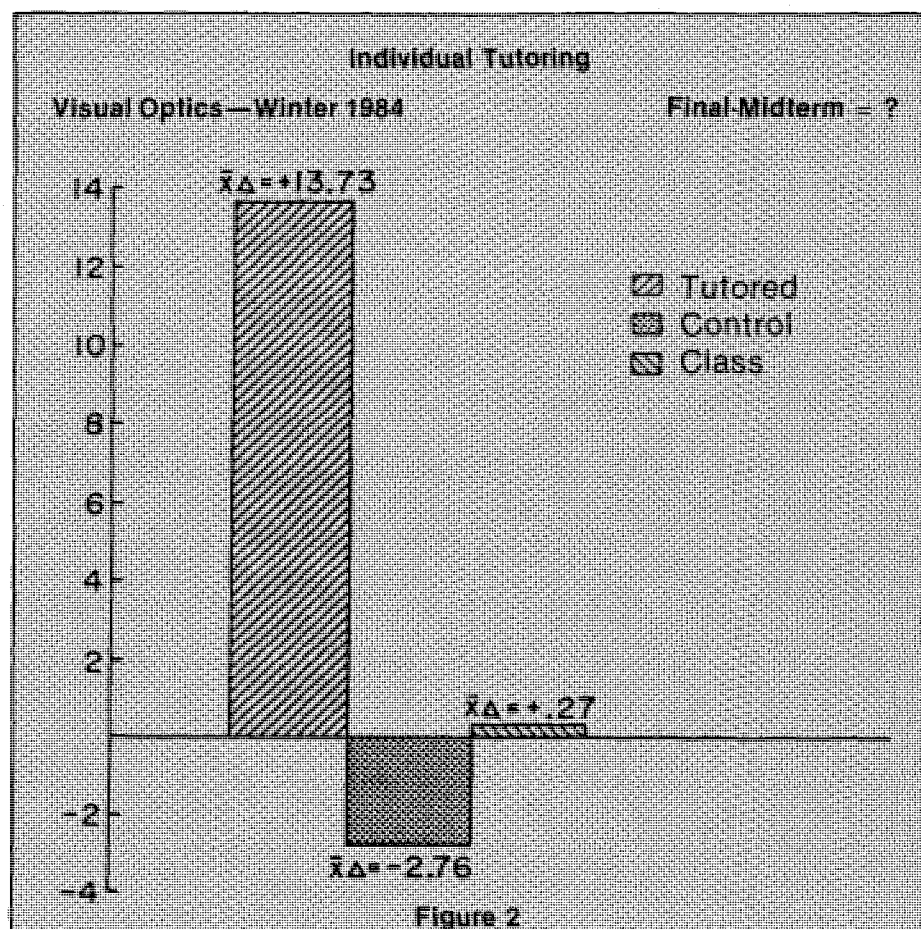
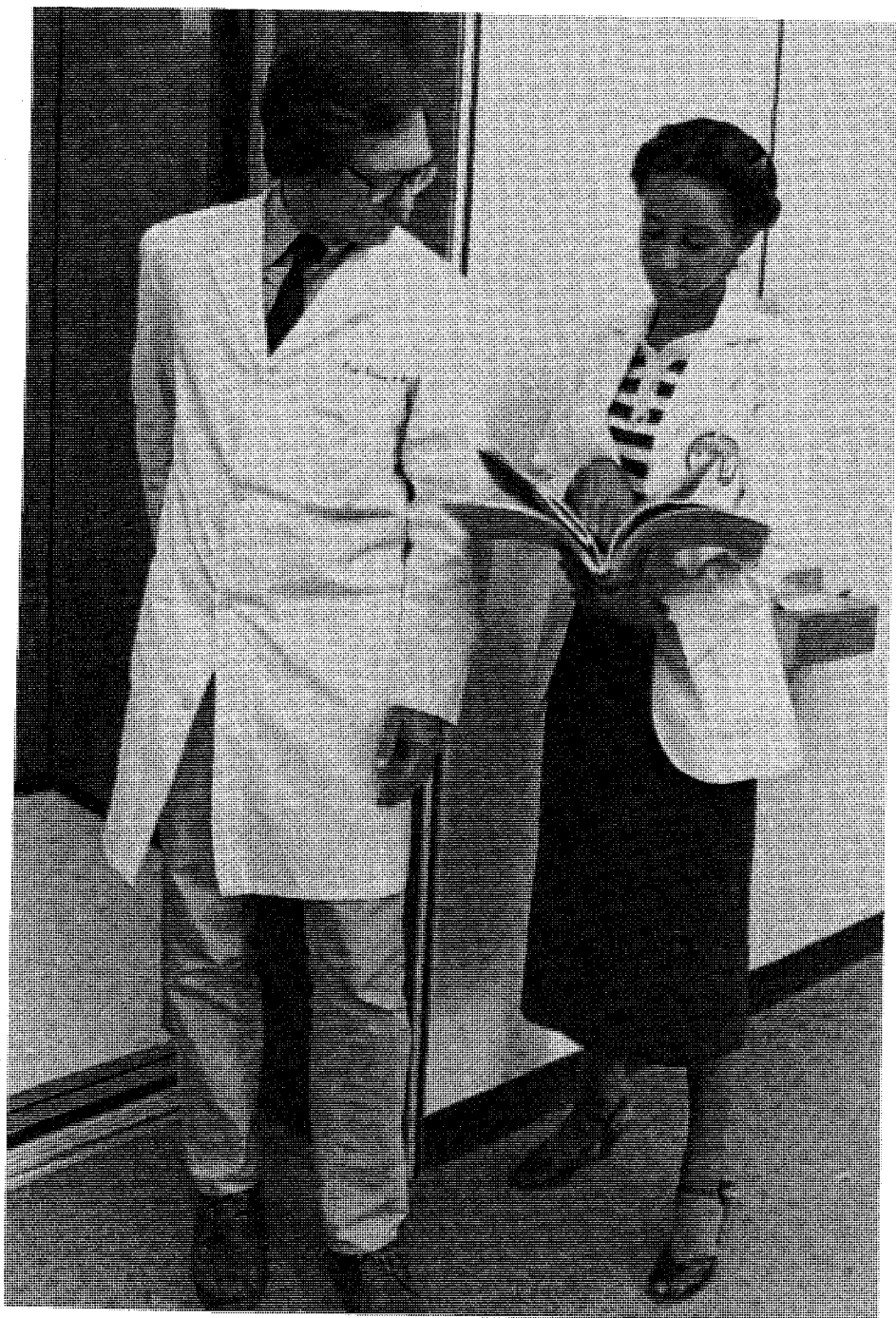


TABLE 2
Tutoring Service
Utilization; 1983-1984

Group Sessions—O.D. I			
Quarter	Course	# Sessions	X Attendance
Fall	Geometric Optics	10	4.6
	Ocular Anatomy	6	14.0
	Psychophysics	5	26.0
Winter	Visual Optics	8	5.4
	Neuroanatomy	8	8.0
	Visual Perception	6	14.5
Spring	Ophthalmic Optics	8	6.25

Total 1st year use: Courses = 7; Sessions = 51; Attendance = 505; X Attendance = 9.90



quarters. All students in both the experimental and control group met this criteria.

The control group in the study is by no means perfect. Ideally experimental and control groups would be defined prior to the course and tutoring applied in a controlled fashion. However, the study, by necessity, is retrospective and given that limitation the established criterion is as good as can be expected. One variable that may be significant and was not controlled for was the class attendance record for each student.

In the fall geometric optics course (Figure 1), there were six students in the "experimental" group and eleven in the control group. All six "tutorial" students received tutoring prior to the final only. The students receiving individual assistance increased their performance on the final by 10.83 points. The control group final test scores decreased by 6.55 points. The class as a whole went down from midterm to final by 5.65 points.

Visual optics (Figure 2), offered in the winter quarter, had 5 students in the experimental group and 10 controls. Of the 5 tutored students, 3 received tutoring throughout the quarter while 2 had assistance prior to the final only. The experimental group again increased their test scores on the final with a mean increase of 17.20 points. The control group increased as well, though only 1.40 points, while the class increased its test performance 6.19 points.

A combined analysis was initiated (Figure 3), resulting in an experimental group of eleven students with twenty-one controls. Overall, students receiving tutoring demonstrated a mean increase in test performance associated with tutoring of 13.73 points. The combined control group had a mean decrease in test scores from midterm to final of 2.76 points. The class scores increased .27 points.

While the graphical representation appears impressive, the question must be asked whether the changes from midterm to final are significant for either the experimental or control group. To measure statistical significance, a T-test was performed on each group. For the individual course and hence smaller group sizes, no group was significant at the .05 level although the experimental group fell just short of this mark. When the combined figures are analyzed, which provide a larger pool for analysis and thus greater statistical reliability, the experimental group experienced a significant increase in test performance to

the .01 level associated with the individual peer-tutoring.

The group sessions, modeled in many aspects upon graduate teaching assistantships, were established for courses in which students had traditionally encountered difficulties and for which there was a higher than average failure rate. Group reviews were conducted approximately once per week for two hours. The way in which reviews were conducted depends largely upon the nature of the material, attendance and the individual tutor in terms of the teaching style with which both are comfortable. For example, if the course content was conceptual in nature and the session had a high turnout, a lecturing format would be appropriate. On the other hand, if the attending group was small and the material to be covered was mathematical, a problem solving session may be more appropriate. During the 1983/84 academic year group reviews were conducted for eight courses, seven of which were a part of the first year curriculum. These seven were:

Fall:

1. Geometric Optics
2. Ocular Anatomy
3. Psychophysics

Winter:

1. Visual Optics
2. Neuroanatomy
3. Visual Perception

Spring:

1. Ophthalmic Optics

For the first year class, there was a total of 51 review sessions distributed among the seven courses (Table 2). The mean attendance per session was 9.90 students with the year's total attendance 505. If these numbers are analyzed by course, it becomes obvious that attendance at a given session varied with the course and within a course, depending upon the proximity of exams.

The optics courses which have the greatest number of people seeking individual assistance have the lowest group review attendance. Those attending the optics group reviews also were often receiving individual tutoring and used the groups as a supplement. Courses such as psychophysics and visual perception, on the other hand, had a large attendance reflecting a wide variety of students in terms of abilities. Few students, if any, attending these sessions participated in the individual tutoring service.

If the use of group reviews is analyzed in terms of the year end grade point average of participants, a relatively even

distribution of GPA's appears with a range of 4.0 on the high end to 1.39 on the low. While it is evident that the group reviews are widely attended, reflecting a variety of needs and abilities, the effect of this service must be evaluated as well.

Psychophysics and visual perception were selected as the courses to be analyzed for effectiveness. The reviews for these courses are well attended and the courses are similar in the nature of the material taught if not continuous with one another. They also are taught by the same faculty member; thus the material for the two courses was taught and tested for in the same style. For the analysis of effectiveness, data from the two courses were combined to insure an adequate sample size.

In each course a midterm and a final were given. Prior to each exam three reviews were conducted. Each student's group review attendance pattern was evaluated and included in the analysis if he or she had attended the group reviews prior to one exam but not the other. "Students Attended" test scores were then compared to their "Not Attended" scores, thereby serving as their own control.

This produced a sample of 25 students. Of the 25, 13 (52%) improved their scores when attending review sessions by 3.3%. Ten students (40%) went down when attending the sessions by 3.95% and 8% remained the same. There was, therefore, no significant change in test scores as a result of attending group review sessions.

Discussion

As a result of this program evaluation, certain conclusions can be made. The first is that through the use of individual peer-tutoring, test performance may be significantly increased. This statement may be interpreted either conservatively or liberally. The conservative view would state that the student seeking tutorial assistance is a different breed than the one who does not. Weigand's study of "High Risk" students, as noted in the Carnegie report, found the following attributes among those who succeed:

High Risk Students—Successful

1. Goal Oriented
2. Goal Aspiration
3. Willingness for hard work
4. Ability to solve personal problems
5. Strong support system
6. Favorable attitude toward school
7. Sense of self-determination

Pitcher-Blauschild, also cited in the Carnegie report, found that attributes of unsuccessful high risk students include:

High Risk Students—Unsuccessful

1. Undertain goals
2. Studies are secondary
3. Failure to accept responsibility for one's own learning
4. Lack of understanding of standards and expectations
5. Inhibition of language function

A case could be made that it was those "successful" high risk students that sought tutorial assistance. On the other hand, it may be that anyone in a professional college, by virtue of their presence, is of the successful caliber. There is a lot of room here for philosophical discussion of educational theory and the interpretation of these data. The results of this study, however, demonstrate that there was a large increase in test performance associated with individual peer-tutoring. Of those students who found themselves in academic trouble and pursued tutoring, only one was dismissed as a result of grades. This is in comparison to five dismissals of students who did not seek help. The predominant factor in the dismissals was grade point average.

As a result of this analysis, the frequency of group reviews provided at NECO has been reduced. Group review sessions are now given every other week rather than every week. While they seem to have little effect upon test performance, the group reviews are used by a wide variety of students. Apparently, as evidenced by continued attendance, the students feel that their questions are being answered.

Optometric educators would be advised to review the "retention" programs offered within their own institutions, reconsider their importance and move toward more effective academic support services. □

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ANNUAL REPORT

President's Message

Annual Meeting
June 21-23, 1985
Las Vegas, Nevada

As we approach our annual meeting I have taken the opportunity to review all of my ASCO files, reports, minutes and correspondence of the various officers, councils, committees and staff members that have taken place over the past two years. In conducting this type of review I was not only very impressed but also pleasantly surprised by the amount of activity that occurred over these past two years. While some people, including myself, did not follow through on all the details and assignments that they had, I was impressed with the exceptional dedication and continued support shown by so many people. ASCO and I are both indebted and very appreciative of the support that each of you has given to optometric education.

It was a treat for ASCO and its members to be able to visit four institutions for their board meetings this year and to meet students and faculty on each campus. I believe that rotating the meetings to the various sister institutions was very well received by the Board and did indeed generate greater fellowship and camaraderie within ASCO and its membership. Our small fraternity must enjoy mutual respect, trust and individual pride. I hope our meetings can continue to be held on the various campuses.

The membership within ASCO is indeed unique and quite varied. While the leadership of some of our institutions is in a process of change, I sense that the complexity of institutional matters and the pace have accelerated. In many instances the institutional representatives to ASCO seem to have great demands being placed on their time with less time to participate and carry out outside challenges and opportunities. In some cases this has affected the contributions that some were able to make to ASCO. Our dependency on staff seems to be steadily increasing.

I am very pleased with the Board's support of strategic planning. Ed Johnston and his committee have done an excellent job in moving ASCO into a much needed area. I wish him well in leading this new and exciting phase for ASCO and optometric education. The association and optometric education may well be entering a new era.

The fiscal integrity of the association has continued to be strengthened thanks to a number of people, especially Lee Smith, for his good management and business skills. I am pleased that the Board changed the ASCO dues structure. With prudent management ASCO should be able to become even more viable in the near future.

The efforts and accomplishments of the Council on Student Affairs and the Council on Academic Affairs in the last two years have been quite remarkable. The leadership and dedication of Jim Noe, David Davidson and Doug Poorman has been outstanding. They have maintained a tremendous pace and workload on behalf of ASCO. Congratulations also to Larry Clausen and the Council on Institutional Affairs for the final report on the clinical data base project.

Hopefully the ASCO Policy Manual that has been developed will be maintained in the future. ASCO should give further study to some of our current policies and ascertain whether changes in posture need to occur.

I am appreciative of the work of the Council on Academic Affairs and the committee chaired by Siret Jaanus in developing a new curriculum model for Pharmacology. The committee's revisions of the systemic and ocular components will be studied by the ASCO Board.

As chairman of the AOA Professional Enhancement Program, I will make a presentation on the subject at our annual meeting. Our schools and colleges have been criticized for years about what we do and do not teach in the area of the practice management. Actually, the professions have been in a continual transition and are finally beginning to realize that one can be a professional person as well as a business person and that success in both of these arenas is dependent upon interpersonal communication skills. The AOA PEP program has much to offer the schools and the schools have much to offer the profession. It is my belief and hope that all schools will take steps toward expanding their curriculum in professional enhancement that would extend over the entire four years of the curriculum.

Considerable concern is also being expressed throughout the nation on the erosion of professionalism and ethics in the health care professions. Much of this has been created by the Bates case, the actions of the FTC, the aggressiveness of the corporate sector and the inability of many individual practitioners to cope with the many changes that are occurring. I believe our students and graduates need guidance in understanding and appreciating our professional standards.

I would like to suggest that each school and ASCO itself give consideration to developing an optometric oath. Some years ago I attempted to survey the schools to see what was being done in this area. Only a few schools reported utilizing such an oath. At SCCO we borrowed from those that were available and have developed an oath. We continued to modify our oath and have it administered at the time of graduation. I would urge that every school give consideration to developing a similar type oath. Possibly ASCO could agree upon an oath that would be adopted and utilized by each of our institutions.

I am very pleased that Dr. Davidson and the Council on Student Affairs have embarked on a project to study student indebtedness and to develop strategies for the debt management of our students. I believe this aspect is very important to the future of the profession of optometry and the welfare of all graduates. It also can become a cornerstone for students in developing a better understanding of business and the management of their entire fiscal affairs. It is my belief that optometric education and ASCO need to give more study to the schools' responsibilities to our graduates beyond graduation.

It is my belief that ASCO must become more assertive in informing the profession of some of the facts about education and optometric manpower. While part of our role is educational in nature, we also need to become more involved in molding the opinions of the profession about optometric education and our schools and colleges. Often the AOA Journal column "Listening Post" and AOA NEWS print responses and comments about optometric education that need a response but seem to always go unanswered. I believe ASCO has a significant role to play in molding opinions within the profession.

Recent activities within the national and world insurance industry have already had, and from all appearances will continue to have, a significant impact upon the professions as well as many of our institutions. The growing problem of liability coverage needs to be addressed.

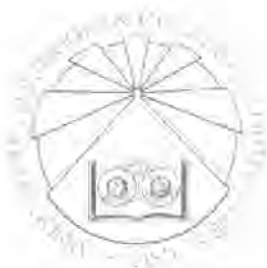
In concluding, I would like to express my sincere appreciation to Dr. David Sullins who has been an outstanding Liaison Trustee from the AOA. He has been supportive, concerned, informed and attentive for which we are very appreciative.

I appreciate the opportunity to have served as the President of ASCO for these past two years. Your support, dedication and concern about the importance of optometric education has been very much needed and appreciated.

Respectfully,



Richard L. Hopping, O.D.
President
June 1, 1985



National Activities

Study of Educational Financing and Health Award

Under a purchase order from the Division of Associated and Dental Health Professions, Bureau of Health Professions, DHHS, the Association conducted a study entitled "Changing Trends in the Financing of Optometric Education." This study utilized data from the COE annual survey of optometric education from the years 1979-80 through 1983-84 and analyzed the trends with respect to educational costs, sources of student support and sources of revenue for thirteen schools and colleges of optometry. Comparisons were provided between both public and independent institutions and resident and non-resident students. The information provided has been used by the department in the Annual Report to the President and the Congress on Health Manpower.

ASCO again participated in the Secretary's Award for Innovations in Health Promotion and Disease Prevention. This program encour-

ages original submissions from health professions students. This year four optometry students submitted papers for the competition. Three of these were recommended by ASCO review for further consideration and one was selected in the final 20 submitted to the Secretary of DHHS for the ultimate choice of first, second, or third place winner. The optometry paper, "Public Vision Screening," by Mr. A. Jerry Zelada, a fourth year student at Pacific University College of Optometry, received honorable mention and a \$250 prize.

Sustaining Member Section

Eleven additional companies from the ophthalmic industry were approved by ASCO's Board of Directors as sustaining members, bringing the total in this section to nineteen.

Current sustaining members are: Reichert Scientific Instruments, Bausch & Lomb, Corning Glass Works, Marco Equipment, Inc.,

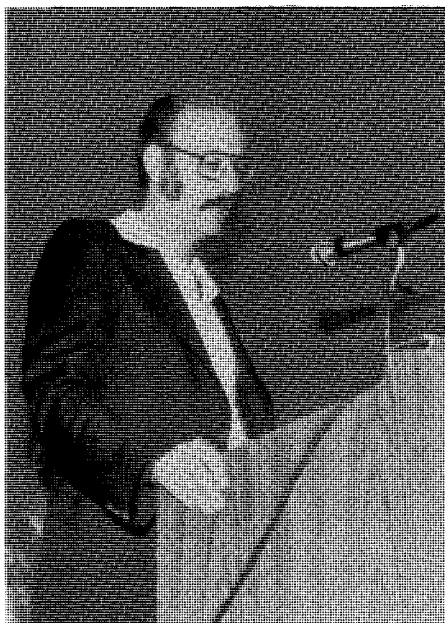
Barnes-Hind/Hydrocurve, Inc., Multi-Optics Corporation, Logo Paris, Inc., CooperVision Optics, CIBA Vision Care, Allergan Pharmaceuticals, American Hydron, John Hancock Insurance Co., BMC Industries, Inc., Alcon Laboratories, Inc., Marchon Eyewear, Inc., Humphrey Instruments, Inc., CTL, Inc., Avant-Garde Optics, Inc. and BerDel International Optics, Inc.

The support of the sustaining members has made possible a number of ASCO activities during the past year: distribution of the *Journal of Optometric Education* to all senior optometry students, planning for a faculty directory and a symposium on credentialing. Sustaining Members receive address labels of senior optometry students twice each year, a discount on advertising in the *Journal of Optometric Education*, a listing on the inside cover of JOE and in its "Sustaining Member News" page, and an invitation to a reception with the deans and presidents of ASCO member schools at ASCO's annual meeting.

ASCO extends sincere appreciation for the contributions of its sustaining members to the advancement of optometric education.

Student Endowment Fund

The ASCO Student Endowment Fund continues to earn interest. Its distribution to the schools and colleges aids students who need financial assistance. This year we distributed nearly \$14,000 to the 16 U.S. schools. Reports indicate that individual scholarships and emergency loan funding are the most frequent form of student assistance while other schools have utilized the contribution in expanding their college work-study programs. As federal assistance declines, this endowment becomes even more significant in student support.



Dr. Henry Peters, dean of the UAB School of Optometry, and Dr. Thomas Stelmack of the VA clinic in Chicago discuss the VA matching program in optometry.

National Activities

Migrant Worker Vision Care

During the year ASCO continued to work closely with the Migrant Health Program of the Health Resources and Services Administration in developing proposals for the provision of optometric vision care to migrant workers and their families.

In addition to the two completed projects in California and Oregon, two new demonstrations were approved. One, at the Franklin C. Fetter Clinic in Charleston, South Carolina, is being sponsored by the Southern College of Optometry. The other project is being conducted by the Pennsylvania College of Optometry at the Tri-County Community Health Center in Newton Grove, North Carolina.

Preliminary data received as part of periodic reports to the Migrant Health Program indicate an initial screening failure rate of 55-56%. Negotiations have been initiated in the community to provide lenses and frames to those referred for primary and secondary services.

An article describing the migrant worker demonstration projects appeared in the *AOA News* and has received many favorable comments.

ASCO Policy Manual

Following multiple reviews, the policies established by the Association from 1972 through 1984 have been compiled and published as a manual. This effort, headed by Dr. Richard Hopping, categorizes the positions taken by the Association on a wide variety of topics and will be maintained with annual updates.

Board Meetings

In an attempt to have a closer liaison with faculty and students, ASCO held its regular board meetings at its member schools. The September 1985 meeting was hosted by the University of Missouri

School of Optometry in St. Louis, Missouri, and the spring meeting was held at the State University of New York State College of Optometry in New York, New York.

A highlight of the spring meeting was the presentation of two proposals for the development of a strategic planning process. Proposals were presented by the Academy for Educational Development and McManis Associates, Inc. (See ASCO Strategic Plan for further details.)

The association's board was well received by the host institutions and had opportunities to meet and discuss common issues with the faculty and students.

As in previous years an Executive Committee session was held in conjunction with the meeting of the American Academy of Optometry in December. A joint AOA/ASCO Executive Committee meeting was also held at this time to discuss a number of topics of mutual interest.

ASCO Strategic Plan

ASCO's Board of Directors, recognizing the need for a positive and directed future course, undertook the development of a Strategic Planning Process. A committee, under the chairmanship of Dr. Edward Johnston, incoming ASCO president, announced a request for proposals. Three responses were received; of these, two associations made presentations to the ASCO Board in May 1985. Subsequently, the Academy for Educational Development was selected to lead ASCO through a strategic planning process during the coming year. The process will focus on those circumstances affecting optometric education as an industry and iden-

tify the priority issues to be addressed by ASCO. Completion of the draft plan and presentation to the Board of Directors is scheduled for March 1986.

Legislation and Appropriations

The reauthorization of the Health Professions Educational Assistance Act was a priority activity during the year. The 98th Congress undertook to develop legislation to reauthorize the expiring health manpower legislation. Following extensive hearings in both the House and Senate, at which ASCO, through the Federation of Associations of Schools of the Health Professions testified and legislation acceptable to the health professions schools was agreed upon. This, in the form of S2754, was referred to President Reagan who promptly vetoed the legislation. By continuing resolution these programs were, however, funded for FY85.

We are again in the process of hearings to develop a three year reauthorization with the hope of obtaining presidential approval even though the administration has requested no funding for health professions for FY86. The issue will not be resolved before late 1985. The major focuses of the health professions are student financial assistance programs and special projects such as faculty development and geriatrics.

Public Study of Optometry

The AOA/ASCO Committee on a Public Study has continued its efforts. A revised proposal was developed and is under final evaluation for professional writing. If this is accomplished by the end of June we will again seek foundation funding. The American Council on Education has reaffirmed its support and sponsorship for the undertaking.

Interprofessional Activities

The Association has been active with other groups over the last year. These interprofessional activities have included:

- Close working involvement with the Federation of Associations of Schools of the Health Professions (FASHP), with particular emphasis on the issue of delinquency and default in HPSL loans, the HEAL loan problem, and the abortive attempt to get presidential approval of legislation to reauthorize the Health Professions Educational Assistance Act. The latter activity is now before the 99th Congress and occupies a major portion of national staff activity. FASHP also developed and conducted a program on commercialism in the health professions in conjunction with the Association of Academic Health Centers program.

- The Association was represented at the 1984 meeting of the International Optometric and Optical League in London by the ASCO President, Dr. Richard Hopping, and Mr. Lee Smith, Executive Director. The Optometric Education Section had a full agenda which included approval of a continuing

education program concept, the development of an international directory of optometric education and an entry level program of education in optometry for developing countries.

- The annual tripartite meeting of representatives of ASCO, IAB, and NEBO to discuss topics of mutual interest and concern was held in December 1984 in St. Louis.

- Working in cooperation with the AOA, ASCO representatives continued their activity in student recruitment and in the development of an effective graduate placement program.

- The Association, with the American Association of Colleges of Podiatric Medicine, cosponsored the annual meeting of the National Association of Advisors for the Health Professions, Inc., in June 1984. Over 350 health advisors were given an orientation to optometry and optometric education through the cooperation of the Pennsylvania College of Optometry. This organization has been a most effective liaison for optometry and is credited in part with increasing the applicant pool.

Council Activities

Council on Student Affairs

The Council on Student Affairs, under the chairmanship of Dr. David Davidson of the University of Missouri School of Optometry in St. Louis, had a busy year. A new recruitment poster was designed with assistance from Nikon, Inc. The poster was included in the annual fall mailing sent by ASCO to members of the National Association of Advisors for the Health Professions. Posters also were sent to admissions officers at all schools and colleges of optometry.

A committee was formed to study the computerization of national inquirer data. The committee is considering the feasibility of providing institutions with data on potential applicants in a more efficient manner that would avoid unnecessary duplication of effort.

A committee is studying the feasibility of a centralized admissions process, or a centralized transcript verification process.

The council sponsored an exhibit at the annual meeting of the American Association for Counseling and Development, April 2-5 in New York.

The council also sponsored an exhibit and made a presentation at the annual meeting of the Minority Biomedical Research Services, March 31-April 3, 1985 in Miami.

A number of other committees were formed to (1) study optometric student indebtedness and strategies for debt management; (2) study loan options and prepare a set of recommendations to AOA to make more efficient use of existing revenues for student loans; (3) solicit proposals from suitable agencies for the development and implementation of a new admissions test; and (4) cooperate with AOA and AOSA in the development and operation of an effective placement service for new graduates.



Dr. Willard Bleything discusses ASCO's strategic plan with Kurt Moses of AED.

New Appointments

Council on Academic Affairs

The Council on Academic Affairs, under the chairmanship of Dr. Douglas Poorman of the Southern College of Optometry, continued its outstanding work.

A committee is at work developing a curriculum model in the therapeutic aspects of pharmacology.

An update of the *Handbook for Teachers in Schools and Colleges of Optometry* is also being conducted by the council. Two of the three original authors of the handbook agreed to participate in the revision.

A survey instrument was developed to gather information regarding all currently available computer programs in optometric education.

The council also provided assistance to the ASCO national office in developing a faculty directory questionnaire.

A committee was appointed to study student performance on the theoretical optics section of the NBEO in response to what appear to be high-failure rates in this section. Letters were sent to chief executive officers of the schools and colleges of optometry to identify those faculty members who teach theoretical optics and to nominate appropriate individuals for the committee.

Council on Institutional Affairs

The Council completed its major project on data collection and reporting of student clinical encounters. This pilot program, directed by Dr. Paulette Schmidt, of The Ohio State University College of Optometry, included eight participating schools and provided a variety of data on the patients, diagnoses and services provided. The standardized data system is now available to the schools for their use.

Sylvio Dupuis, O.D., of Manchester, New Hampshire, was selected by the Board of Trustees of the New England College of Optometry to become its next president. He will succeed F. Dow Smith, Ph.D., who is scheduled to retire in December 1985.

Douglas H. Poorman, Ph.D., was named dean of faculty at Southern College of Optometry. Dr. Poorman also is chairman of the Council on Academic Affairs of the Association of Schools and Colleges of Optometry.

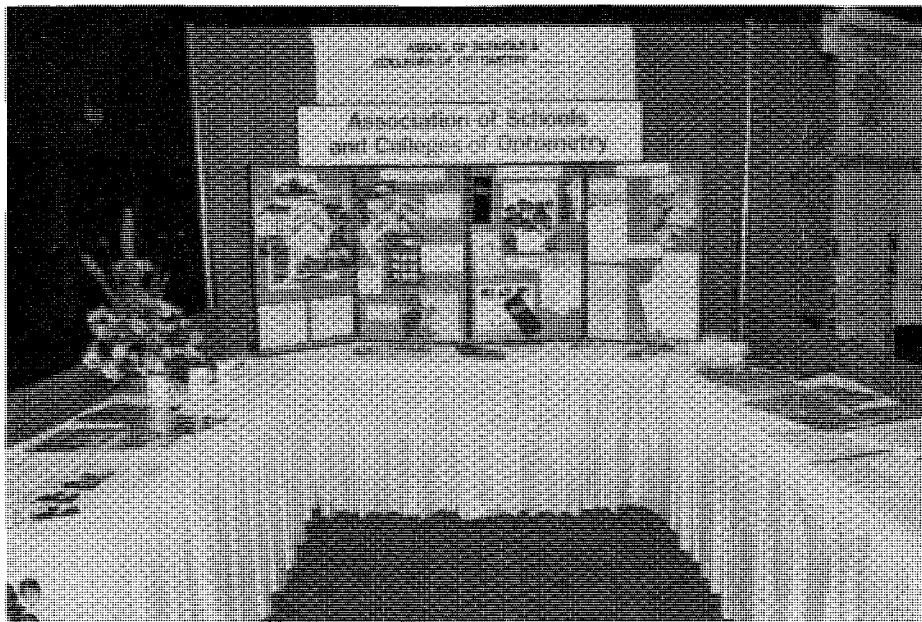
David A. Greenberg, O.D., M.P.H., has been named vice president for academic affairs and dean of Illinois College of Optometry.

Mr. James Noe was appointed vice president for student affairs at the State University of New York State College of Optometry.

John W. Potter, O.D., chief, optometry service at the Veterans Administration Outpatient Clinic in Las Vegas, was appointed to a 3 year term as editor of the *Journal of Optometric Education*.

Jerry L. Christensen, O.D., Ph.D., was appointed to a four-year term on the Council on Optometric Education. Other members of ASCO who will be working closely with AOA are: Edward R. Johnston, O.D., M.P.A., a member of the Council on Continuing Optometric Education, and Arol Augsburg, O.D., M.S., a member of the Council on Clinical Optometric Care. Completing his service as chairman of the Council on Optometric Education is Bradford W. Wild, O.D., assistant dean, University of Alabama School of Optometry.

A major effort in the area of continuing education by the ASCO Committee resulted in the appointment of a joint task group of ASCO, AOA, and IAB to develop a continuing education curriculum and a delivery system. The ASCO members are Drs. William Baldwin, Chairman, Edward Johnston, Gerald Frenzel and Irving Borish. A committee on curriculum development is chaired by Dr. J. Boyd Eskridge.



ASCO's new exhibit was displayed at the American Optometric Association's annual meeting.

1985 Annual Meeting

Election of Officers

At its annual meeting held at the Las Vegas Hilton Hotel June 21-23, 1985, the Association of Schools and Colleges of Optometry (ASCO) elected new officers for the next two years. They are: president—Edward R. Johnston, O.D., M.P.A., president, State College of Optometry, State University of New York; president-elect Jack W. Bennett, O.D., dean, College of Optometry, Ferris State College, Big Rapids, Michigan; vice-president Jerry L. Christensen, O.D., Ph.D., dean, University of Missouri-St. Louis School of Optometry, St. Louis, Missouri; and secretary-treasurer William E. Cochran, O.D., president, Southern College of Optometry, Memphis, Tennessee.

Resolutions Passed

At the meeting, recognition by resolution was accorded to Dr. Richard L. Hopping, who completed two years as president of ASCO; to Dr. F. Dow Smith, who

completed two years as secretary/treasurer of ASCO; to Dr. Bradford W. Wild who completed two terms on the Council of Optometric Education; to Dr. Douglas H. Poorman for service as chairman of the Council on Academic Affairs; and to Dr. Larry R. Clausen for service as chairman of the Council on Institutional Affairs.

By means of resolution, ASCO also endorsed the concept of a western hemisphere conference on optometric practice and optometric education; reaffirmed its support for and commitment to optometric research and development; and expressed its appreciation to the NBEO for developing and distributing to ASCO institutions its diagnostic performance report.

Symposium on Ocular Disease

Representatives of the sixteen U.S. member institutions of ASCO attended the annual meeting. A highlight of the session was a symposium entitled, "Diagnosis and

Treatment of Ocular Disease," sponsored in part by the Sustaining Member Section of ASCO. The symposium was moderated by Richard L. Hopping, O.D., ASCO president and president of the Southern California College of Optometry. Panelists discussed the topic from the perspective of the various optometric organizations they represented with particular emphasis on educational aspects.

Panelists for the symposium included: Frank B. Day, O.D., president of the International Association of Boards of Examiners in Optometry; Bradford W. Wild, O.D., Ph.D., chairman, Council on Optometric Education; David W. Sullins, Jr., O.D., trustee, American Optometric Association and Edward R. Johnston, O.D., M.P.A., president-elect, Association of Schools and Colleges of Optometry.

In other meeting activities, ASCO sustaining members met with member school deans, presidents and faculty at both an evening reception and a luncheon preceding the symposium. Personal contacts were made, information exchanged and beneficial feedback received on the sustaining member program.

1985-1986 Program

Among ASCO's programs for the coming year are staff support and participation in the ASCO strategic planning process; a faculty directory for optometric education; active involvement with FASHP to reauthorize the Health Professions Educational Assistance Act and appropriations; administration of four demonstration projects in the provision of eye/vision care to migrant workers and their families; and the establishment of a computer capability for the association to provide financial management services and a beginning level of data management ability with emphasis on COE annual survey data.



Outgoing ASCO President Richard L. Hopping introduces luncheon symposium.

Journal Report

The *Journal of Optometric Education* (JOE) continues on a solid foundation under the new management team of John W. Potter, O.D., editor, and Patricia Coe O'Rourke, managing editor.

Editorial

Four issues were published during 1984-85 containing a total of 17 papers and reports. Fourteen of these were original papers, two were staff prepared reports, and one was an annual index. A major study coauthored by Lee W. Smith, M.P.H., ASCO executive director, and Robert L. Bleimann, Ph.D., entitled "A Survey of Optometry Graduates to Determine Practice Patterns," was featured in two issues. In addition, papers dealing with a variety of other topics were published: an analysis of pharmacology training in schools of optometry, medicine and dentistry, demographic characteristics of UHCO graduates, practice characteristics of recent optometry graduates, the optical parameters of thin prisms, measurement and evaluation, the computer controlled videodisk, the pediatric optometry program at the University of Houston, the role of education in the evolution of a profession and the AOA/AOSA placement service.

Profiles of the University of Montreal School of Optometry and the Southern California College of Optometry were presented as well as an in-depth look at ILAMO by AOA's librarian/archivist, Maria Dablemont.

Editorials this year were "The Changing Philosophy of Federal Student Assistance," by Robert Graham, M.D.; "Commencement to What?" by Lee W. Smith, M.P.H.; "ASCO Serves Students," by David W. Davidson, O.D.; and "JOE—Looking Forward," by John W. Potter, O.D.

The *Journal* is on a regular publication schedule with nearly a one-year's lead time on manuscripts

available for publication. In an attempt to improve both the quality and quantity of the papers submitted, the *Journal's* "Instructions to Authors" is being revised and will be published annually in JOE. The JOE editorial review board continued to perform an excellent job of reviewing and critiquing manuscripts.

Distribution and Subscriptions

As a result of support from the sustaining member program, the *Journal* is now being sent to all senior optometry students, bringing the total distribution of each issue to about 2800 copies.

Four schools are currently taking advantage of the special bulk purchase price of \$75 per hundred copies. An average of 100 additional copies of each issue are being purchased by those schools.

In response to rising mailing and production costs, the subscription rate for the *Journal* was raised this year to \$15 per year for a domestic and \$20 per year for a foreign subscription. This was the first price increase since the *Journal's* beginning in 1975.

Production and Advertising

A renewed effort was made this year to build a broader base of

advertisers in the *Journal*. A special introductory year of discounted advertising for sustaining members has resulted in a number of new advertisers. Many potential advertisers are now attracted by the *Journal's* circulation which, although small, gives advertisers access to future optometrists. These efforts will continue to be pursued during the coming year in order to defray more of the *Journal's* costs.

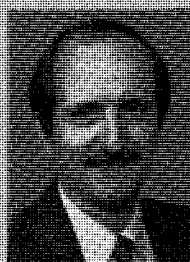
OEA Awards

The *Journal* has been honored again with several awards in the 1985 Optometric Editors Association's annual journalism awards contest. The *Journal* won the first place award for "Best Journal-National." The *Journal* also was awarded first place in the "Best Editorial-National" category for the editorial, "Making Sense Out of Certification," by Richard H. Kendall, O.D. Second place awards were received in the "Best Technical Article-National" category for the article, "Review Clinic: A Measure of Quality," by Samuel Hanlon, O.D., and Nina Jue, O.D., and in the "Best Non-Technical Article-National" category for the article, "ILAMO: Partner in Optometric Education," by Maria Dablemont. ■



Dr. Charles Brownlow, president of the Optometric Editors' Assn., presents the award for "Best Journal National" (for published year 1984) to managing editor, Patricia Coe O'Rourke.

NEW OFFICERS



Edward R. Johnston, O.D., M.P.A., President

Dr. Johnston is president of the State University of New York, State College of Optometry, in New York City. Dr. Johnston holds various appointments and offices within the profession, including ex-officio member of the Executive Board of the New York State Optometric Association, member of American Academy of Optometry, member of the Optometry Advisory Committee to the Veterans Administration Nationally and Executive Director of the Optometric Center of New York Foundation.

Dr. Johnston has been recognized with numerous awards and honors, among them the 1983 Leadership Award from the New York State Optometric Association, the "Alumni Award" for academic achievement from the Pennsylvania College of Optometry, the "Beta Sigma Kappa Award" for leadership and "Honorable Mention for clinical proficiency from the Pennsylvania College of Optometry, and the American Optometric Foundation Fellowship to study public administration.



Jack W. Bennett, O.D., President-Elect

Dr. Bennett is dean of the College of Optometry at Ferris State College, Big Rapids, Michigan. Dr. Bennett's professional career has included appointment to the Michigan Optometry Association—Michigan Ophthalmological Society Joint Interprofessional Task Force, service as associate professor of optometry at Indiana University, membership on the Indiana State Department of Welfare Medicaid Peer Review Committee, and conducting private practice for over a decade.

Dr. Bennett has had a distinguished record of holding various administrative appointments. He currently is president of the Michigan Association of the Professions, served for five years as a trustee of the American Optometric Association, and was

trustee and then president of the Indiana Optometric Association.

Dr. Bennett has authored numerous papers on various aspects of optometric manpower, curriculum developments and vision care practice, and has co-authored numerous accreditation and consultation reports. He received the Distinguished Service of Optometry Award from the Indiana Optometric Association in 1974 and was named Indiana Optometrist of the Year in 1975, and was named Professional Man of the Year by the Michigan Association of the Professions in 1984.



Jerry L. Christensen, O.D., Ph.D., Vice-President

Dr. Christensen is dean of the University of Missouri St. Louis School of Optometry, St. Louis, Missouri. He was appointed as the first dean when the school opened in June, 1980.

Dr. Christensen received his bachelors, masters, and doctoral degrees from the Ohio State University in Columbus, Ohio. After completing his doctorate, Dr. Christensen became a faculty member at the New England College of Optometry in Boston, Massachusetts. He served as an assistant professor and track coordinator of Physiological Optics. In 1974, he joined the faculty of the University of Alabama in Birmingham School of Optometry, The Medical Center. He served as assistant dean of student affairs from 1974 to 1976, and as chairman of the Department of Physiological Optics and director of the graduate program from 1976 to 1980. While chairman of the Physiological Optics department he directed the development of a Vision Science Research Center in conjunction with the National Eye Institute, the only one funded in a school of optometry.

Dr. Christensen has participated as a member of the National Advisory Eye Council—the advisory council to the National Eye Institute, the Scientific Advisory Board of the Friends of Eye Research and Therapy, the American Academy of Optometry and the Association for Research in Vision and Ophthalmology. In 1975 he received an American Council of Education Fellowship in Academic Administration. He has recently been appointed to a four-year term on the Council of Optometric Education.



William E. Cochran, O.D., Secretary-Treasurer

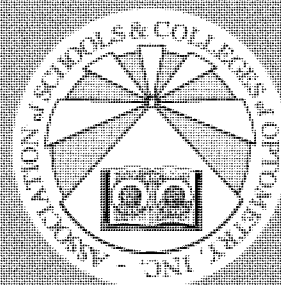
Dr. Cochran is president of the Southern College of Optometry, Memphis, Tennessee. Dr. Cochran has held many administrative positions in civic and professional organizations. His American Optometric Association activities have included Leadership Development, Nominating Committee, NOW Chairman, Response, and Communications Division Executive Committee. He served through the chairs of the Mississippi Optometric Association including president in 1978.

Dr. Cochran has been active in the Southern Council of Optometrists by chairing the Long Range Planning Committee in 1982 and the Economic Affairs Forum in 1981. He served on the Board of Directors of the Better Vision Institute, Inc. and as vice-president in 1984.

As a student at Southern College of Optometry, Dr. Cochran served as the Student Government Association President, was named Outstanding Senior in 1968 and was elected to the Gold Key Honor Society. He served as an officer in the United States Army from 1968-70.

While practicing in Mississippi, he was active in civic organizations and was awarded the Outstanding Citizen Award and the Jaycee Distinguished Service Award of his community. He was a member of his community's Board of Directors of the Chamber of Commerce and served as president of the Jaycees and Lions Club.

After moving to Memphis to become Southern College of Optometry's fifth president, Dr. Cochran has become active in the Tennessee Optometric Association and the Memphis Rotary Club.



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trends affecting the profession in member countries. The IOOL also will be: increasing communications with individual optometrists or national associations in non-member countries and schools and colleges of optometry around the world. Special efforts will be made to mount continuing education programs in optometrically developing countries, and to support the work of voluntary organizations which bring optometric care to underserved countries of the world.

Ohio State's Optometry Museum Expands Collection

Dr. Arol Augsburg, Curator of the optometry museum at the Ohio State University College of Optometry, recently received a new donation for the Celebrity Eyewear Collection. PM Magazine host Lee Jordan contributed her previously worn spectacles to the collection. The Celebrity Eyewear Collection emphasizes the important role that good vision plays in the lives of very successful people. The collection currently contains the previous worn spectacles of over 40 nationally and internationally known persons.

Ohio's Hebbard Receives Honorary Commission

Frederick W. Hebbard, O.D., Ph.D., Dean, OSU College of Optometry, was recently presented an honorary commission in the Ohio State Highway Patrol for his years of support for the enhancement of good vision for Ohio drivers and Ohio State Highway Patrol troopers. Presenting the commission to Dean Hebbard is Colonel Jack Walsh, Superintendent of the Ohio State Highway Patrol. Colonel Walsh also presented Dean Hebbard with a badge personally inscribed with his name and indicating his status as honorary patrol officer. During the 19 years that Dean Hebbard has served as Director and Dean of The Ohio State University College of Optometry, the College has served as special consultant to the State Highway Patrol on matters regarding vision.

Pacific and SUNY Receive HCOP Grants

Two Health Careers Opportunity Program (HCOP) grants from the Department of Health and Human Services were recently awarded—one to the State University of New York's State College of Optometry for \$317,000, and one to the Pacific University College of Optometry for \$155,000.

The grant to Pacific will be used for an "Underserved in Sight" program Pacific has designed to assist disadvantaged students from visually underserved areas in studying optometry and earning the doctor of optometry degree, according to Dr. Robert F. Duvall, Pacific president and Dr. Willard B. Bleything, dean of the school of optometry.

Dr. A. Richard Reinke, assistant dean of the College of Optometry and author of the grant proposal, explained that it is a program to assist disadvantaged students in completing the doctor of optometry degree. The graduates of this program will then provide vision care service to the underserved populations they represent.

The target populations to be served are Pacific Islanders, Native Americans and Hispanics. These population groups are underserved in optometry and the geographic areas they represent are underserved for vision care.

The grant to SUNY, according to James Noe, Vice President for Student Affairs, will support a three-year project to prepare students from disadvantaged backgrounds for admission into the professional optometry program. It will also include intensive retention efforts once the students are at SUNY.

The grant to SUNY will be directed toward salaries for a counselor, study skills specialist and tutors as well as such activities as a preadmissions preparatory program for college sophomores and juniors, formal review sessions for licensing examinations and academic tutoring.

Center for Vision Care Policy Begun at SUNY

The State College of Optometry has recently designated an innovative research unit of the college to study vision care policy and public health optometry. The Center for Vision Care Policy, the only one of its kind in the country, will conduct regional and national policy studies in the organization, manpower issues, major trends and economics of vision care services.

"Any learned profession depends upon its academic institutions to serve as a source for investigations and research which will help the profession better serve the public. With the establishment of the Center for Vision Care Policy at SUNY College of Optometry, we hope to be a resource which will contribute to the dialogue between the public and the optometric profession," said Edward R. Johnston, College president.

According to Dr. Barry J. Barresi, associate professor and director of the Center, the College's public health faculty will serve as the core group of research associates.

"Ours is the first academically-based policy center in the country to address the vision care needs of the public. Today's challenges in vision policy and public health optometry demand a more focused and coordinated research and advocacy effort," said Dr. Barresi.

Third International Symposium on Presbyopia

All schools and colleges of optometry were represented at the Third International Symposium on Presbyopia held in March 1985. The conference, held every four years, was sponsored by Essilor International and Multi-Optics Corporation. The meeting brought together 700 researchers from 31 countries to share new developments and research findings on presbyopia. The research presented was divided into three categories: the human aspect of presbyopia (including geographical factors); the mechanism of presbyopia (including the evolution of the crystalline lens); and the correction of the presbyope's vision. For further information, contact Multi-Optics Corporation, 1153-D Triton Drive, Foster City, California 94404.



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