

JOURNAL OF OPTOMETRIC EDUCATION

Volume 4, Number 2
Fall 1978

op•tom•e•try ap•pli•cant (äp tām' ə trē ap'li kənt) *n.* [<L. *applicans*, prp. of *applicare*, APPLY] primarily a college senior; single; undergraduate major in biology; GPA ranges from 2.5-3.5. **1:** family income going up; expects to receive loan or scholarship **2:** chose optometry because of its content **3a:** did not apply to other health professions **b.** influenced by a non-relative optometrist.

Characteristics of Optometry Applicants

1971-72 to 1977-78

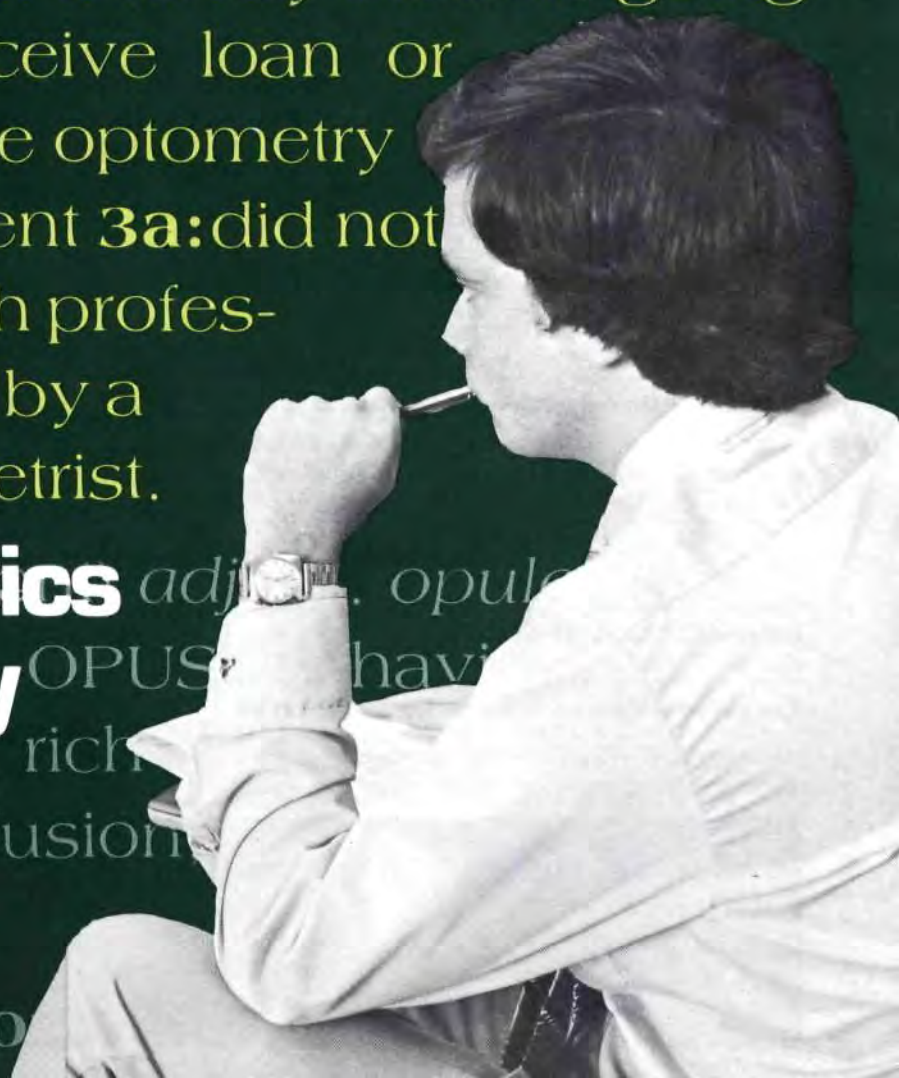


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Official Publication of the Association of Schools and Colleges of Optometry

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An Area of Vital Interest

The *Journal of Optometric Education* has several purposes. One of these is to inform optometric educators, practicing optometrists, as well as those leaders in such fields as government, business, law and other health professions about subjects relative to optometric education. As the *Journal* enters its fourth year of publication it remains a largely unknown quantity to a vast majority of the profession. It is my belief that because of the great impact and importance to the profession, optometric education should be an area of vital interest to all optometrists.

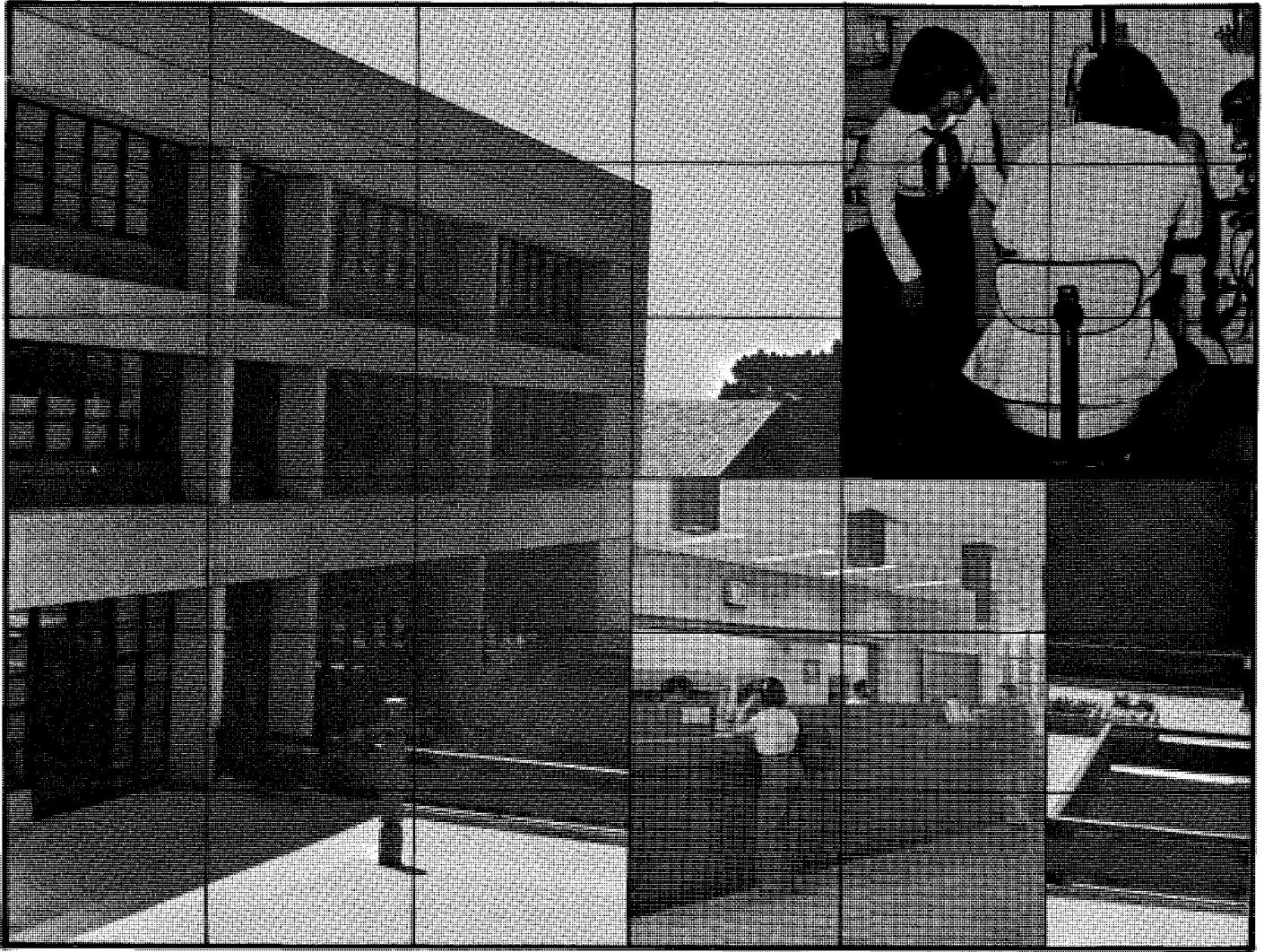
Optometric educational institutions serve as a window through which to view tomorrow's optometry and optometrist. The many complex issues facing education and the end result of this educational process determine the future direction and goals of the profession. As clinical management regimen, research, health care

delivery systems, laws and other factors which affect the practice of optometry change, so will optometric education and in a relatively short period of time, the entire profession. As with the process of self government it is important that each optometrist become interested in and better informed about the processes of optometric education.

In the interest of informing both those outside and especially those inside the profession, it is the goal of the *Journal* to discuss such areas of optometric education as student affairs, curriculum, teaching methodology, graduate programs, school clinical programs, independent clinical programs, continuing education, federal and state government influences, accreditation and many others.

To this end, I hope this *Journal* becomes as widely subscribed to and read as any journal in optometry.

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



PROFILE.

University of California, Berkeley, School of Optometry

by Sharon Godske and Janet Carter

The concept of an optometry curriculum at the University of California, Berkeley, was born in 1907 when the California Optometric Association (COA) formed a committee to study its feasibility. The University president, Dr. Benjamin Ide Wheeler, was concerned about the reaction of medicine to the

proposed course, and so the idea was temporarily put aside. In 1917 a statewide committee was again formed by the COA, and this group met with the University administration over the next seven years to lobby for the program. In June of 1923 final approval for the course in optometry was given by the University Board of Regents. Two students were enrolled originally, and the curriculum was administered under the Department of Physics.

In 1940 a separate Department of Optometry was established in the Col-

lege of Letters and Sciences. The following year a separate School of Optometry was formed. The school offered a two-year program to students who had completed two years of preprofessional education. The optometry curriculum led to a Bachelor of Science degree in Optometry. In 1946 the new school began a graduate program in physiological optics leading to the Master of Science and Doctor of Philosophy degrees.

In 1948 the School of Optometry at Berkeley moved into its own building. Funding for the move was obtained with

Sharon Godske is Secretary to the Dean at the University of California, Berkeley, School of Optometry (UCB); and Janet Carter is a fourth-year professional student at UCB.

the help of the state legislature and California optometrists. The building had been built during the war as a ROTC post. It was renamed Minor Hall in honor of Ralph S. Minor, who had been director of the optometry program from its founding into the 1940s. In this same year the curriculum was expanded into three years of professional studies by the addition of a graduate year. Students received a Master of Optometry degree upon completion of the program.

In 1966 the optometry program was extended another year. There are now two years of required preprofessional work. The four-year professional program leads to the Doctor of Optometry degree. Students may elect to receive a Bachelor of Science in Optometry at the end of the first two years of the professional curriculum. Students interested in a career in optometric education may elect to enter a joint OD/MS program.

The Berkeley campus of the University of California is centered in the heart of the city of Berkeley (population 125,000) at the foot of the rolling hills

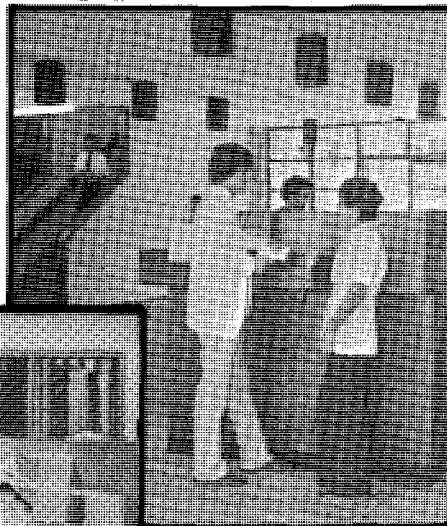
overlooking San Francisco Bay. The Bay Area is well known for its physical beauty and cultural diversions. The Berkeley campus is, in itself, very beautiful, with plenty of open space, wooded glens, and spacious plazas. Every attempt has been made to preserve the natural splendor of the area.

The School of Optometry building, Minor Hall, is situated near scenic Strawberry Creek on the eastern end of campus. It is next to the Physics/Chemistry complex, and some of the laboratory and classroom space in those buildings is used for basic optometric science courses. Minor Hall is across the street from the Student Health Center, Cowell Memorial Hospital, where the school

also maintains some laboratory and clinic space.

In June of 1978, a new era for the University of California School of Optometry began with the opening of the Minor Hall Addition. This was the first major change in the school's physical plant since the original Minor Hall was occupied in 1948. It is also the first major construction to take place on the Berkeley campus in over ten years. The new six-million-dollar addition is five stories high and contains 30,000 square feet of workable space. It houses clinics, administrative and faculty offices, research laboratories, a faculty/student commons, and animal quarter. The 14,000 square feet in "old Minor Hall" is currently being renovated to contain pre-clinic teaching areas, classroom space, shops, and an expanded library. An additional 6000 square feet in nearby Cowell Hospital will be retained for further research areas.

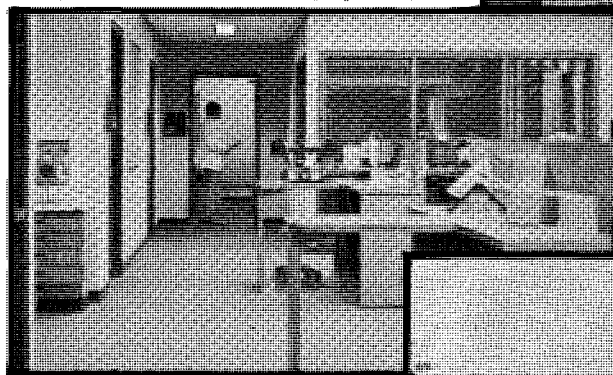
The patient reception area is only part of 30,000 square feet of workable space.



The children's play area provides imaginative recreation for young visitors.



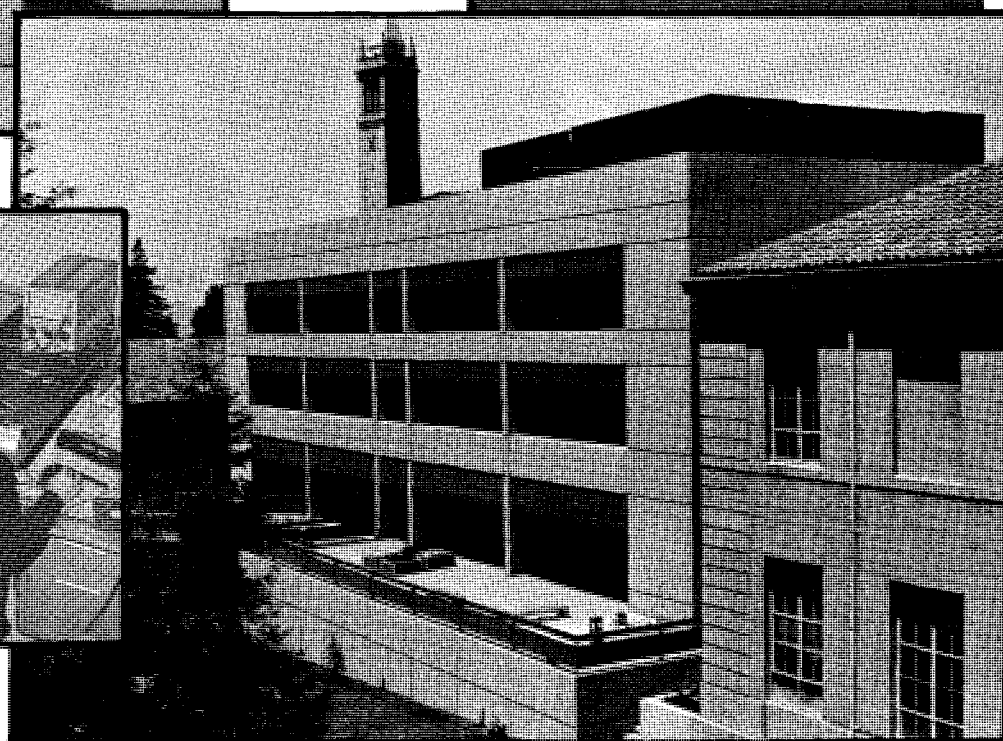
One of several specialty clinics operating on a modular basis is the Binocular Vision Clinic.



A major emphasis is placed on research at UCB.



The new Minor Hall Addition is five stories high and was completed in June, 1978.



Photos by Michael Schwartz

For the past sixteen years the optometry clinic has had to turn away patients because all appointments were filled. The immediate clinic population is the approximately 50,000 students, faculty, and staff of the Berkeley campus. But the clinic also serves a combined population of well over a million residents of communities in the immediate vicinity of the campus. It is hoped that the new facilities will allow the school to serve more of this community. The new clinic promises to be a major health care facility of the Bay Area.

The Berkeley optometry clinics operate on a modular basis. Each module in the new building has eight examination rooms, a dispensary, an instructors' office, and a conference area. Seven students, two instructors, and one or more teaching assistants are assigned to each module; there are five modules in the clinic. In addition, the new building houses several specialty clinics: pathology/low vision, contact lenses, binocular vision, neuro-optometry, visual functions, and special services (dispensary and emergency drop-in). Every attempt is made to duplicate the situation the student will encounter in practice. Each module acts like a separate group practice. Students are responsible for the follow-up care and dispensing of each patient. Whenever possible, patients referred to specialty clinics are assigned to their original clinicians. This allows for a continuity of care similar to that given in actual practice.

The present enrollment (1977-78) of the School of Optometry is 230 professional degree students and 19 academic graduate students. The full-time faculty numbers 23, and there are some 70 part-time and clinical instructors associated with the school.

Building upon a foundation of fundamental concepts in the physical and biological sciences received in the three-year pre-optometry curriculum, the training in the School of Optometry is designed to provide preparation for the practice of optometry. The curriculum provides a proper balance between clinical training and didactic preparation designed to develop independent scientific and professional judgment. It also provides basic preparation for those who wish to do research in physiological and applied optics. The aim of the graduate program in physiological optics is to prepare graduate students for careers in teaching and/or research in visual science and optometry.

The first two years of the optometric curriculum are devoted to basic opto-

metric and clinical sciences. Students begin their clinical training in the first year by working as observers and optometric assistants to advanced students. This helps to familiarize them with the concept of vision care teams working together to provide higher quality care more economically. In the third year, students begin their formal clinical training. Third-year students see patients in general clinic, work in the emergency drop-in and dispensary clinics, and participate in vision screenings through the "Mobile Clinic." This latter activity is made possible by a grant from the United States Department of Health, Education, and Welfare. The Mobile Clinic is a large trailer equipped with two complete examination rooms. Students perform screenings one day a week at local junior colleges, schools and pre-schools, health clinics, senior citizen centers, etc. The Mobile Clinic also takes three-to-four-day field trips to underserved areas around the state and in Mexico during vacation periods.

In the fourth year, the student's training is almost entirely clinical. In addition to the general and specialty clinics required of all interns, the student may participate in a growing number of outreach programs. These are located all around the Bay Area. They include an optometry/ophthalmology rotation at Letterman Army Hospital in San Francisco, contact lens work at Pacific Medical Center in San Francisco, the Palo Alto Low Vision Center, and one-day-a-week externships at various community health centers around the Bay.

A major change in the school's curriculum has been approved effective September, 1979. Human anatomy, physiology, and bacteriology will become prerequisite courses for entry into optometry school. This will require the student to have at least three years of pre-professional preparation (although, in reality, most students entering the School of Optometry today have a bachelor's degree, and many have completed graduate work of some sort).

The proposed curriculum change will mean that all of the student's basic science training will be completed upon entry into the school. Basic optometric studies will be able to begin immediately. The ocular anatomy course will be expanded into two separate courses: Anatomy of the Eye and Orbit, and Neuro-anatomy. Several new courses are to be added to the first and second years; among them pediatric management, geriatric optometry, epidemiology of refractive error, embryology of the

eye, etc. The student will have an opportunity to select from an increased number of optometry and physiological optics courses as electives.

At the University of California, Berkeley, stress is placed on both research and teaching, and this is reflected in the emphasis on research in the Ph.D. program. Graduate students doing research are directed by a distinguished resident and visiting faculty. The School of Optometry does not maintain a separate research institute, but rather supports individual faculty members and students. Fourth-year optometry students are required to do an original research project and to report their findings in thesis form.

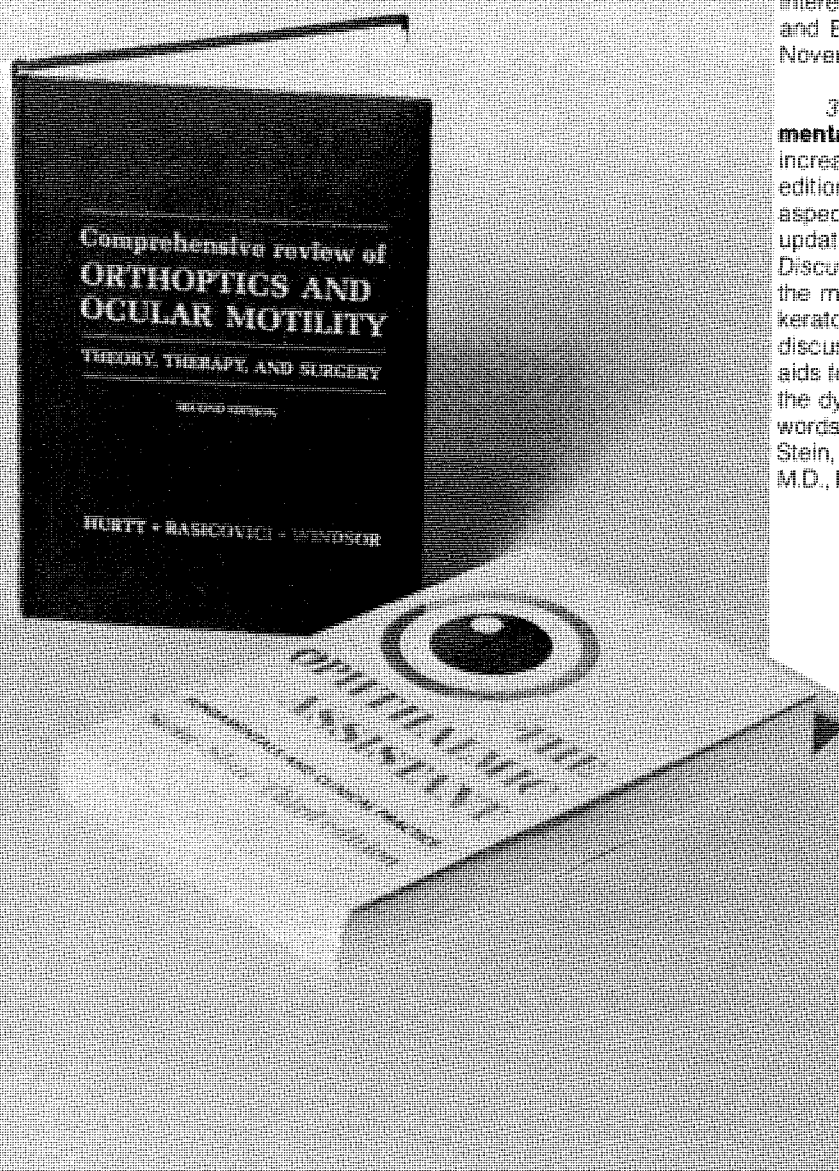
The increased space provided by the new optometry building will allow the development of a number of new programs to improve on the community and educational benefits offered by the school. Some of these may include: allowing regional planning and coordination to permit the School of Optometry to become part of larger programs of comprehensive health care in connection with state welfare programs; providing increased admission and enrollment opportunity to students who are likely to practice optometry in rural and underserved areas; and the establishment of a program of continuing education.

Two new postgraduate programs are also in the planning stages. One would be a residency course leading to the Doctor of Optometry degree for optometrists who hold Certificates of Completion or Master of Optometry degrees from other schools and colleges of optometry (in particular, those from other countries). The second is a program of specialized advanced training leading to a certificate or other appropriate certification (such as the Master of Optometry degree) in pediatric optometry (orthoptics, developmental vision and learning disabilities), geriatric optometry (low vision, visual rehabilitation) and public health optometry (delivery systems of vision care, administration of vision care services, etc.).

The primary goal of the School of Optometry at the University of California continues to be the production of outstanding practicing optometrists. We also hope to continue to be a major source of researchers and educators in optometry and visual science. With the completion of the Minor Hall Addition, the future of the University of California School of Optometry looks bright indeed. □

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Characteristics of Applicants to Schools and Colleges of Optometry—1971-72 to 1977-78

Changes, Lack of Changes, Trends

By Nira R. Levine



The Optometry College Admission Test (OCAT) was first introduced for use with applicants to schools and colleges of optometry in the fall of 1971. With the large increase in qualified applicants to optometry schools,¹ it had become necessary to employ additional methods for selection of students beyond the traditional grade point average and letter of recommendation. The OCAT was designed to help in this regard by providing a quantitative, standardized national measure of achievement, aptitude, and science reading ability.

The foregoing nature and role of the OCAT is by now well known. Less commonly understood however, is the fact that some demographic information was gathered in connection with the OCAT to provide a statistical resume of the applicant pool. Initially, background information was obtained on only six applicant characteristics: sex, age, "repeater" status, college level, major, and geographic region. In 1973 an expanded biographical questionnaire was added to the OCAT consisting of 28 questions. This OCAT biographical questionnaire was designed to provide a census of statistically important information concerning the applicant pool.

The purpose of this report is to examine the stability and/or changes in the polled characteristics of applicants to schools and colleges of optometry over the period 1971-72 to 1977-78. The data summarized here are derived from the annual reports submitted by The Psychological Corporation to the Association of Schools and Colleges of Optometry (ASCO).²⁻⁹ It is important to keep in mind that the data are based on

Nira R. Levine, Ed.D., is Chairman of the OCAT Committee of the ASCO Council on Student Affairs and Director of Student Services at Pacific University College of Optometry in Forest Grove, Oregon.

all applicants, not just on admitted students. Obviously, however, it is from this pool of applicants that optometry students, and future optometrists, are drawn.

Applicant Characteristics

Original Six Traits

Table 1 shows the distribution of applicants by sex, repeater status, major, college status, age, and geographical region. For comparative purposes both the number of applicants in each category and its corresponding percent are shown for the seven-year period since the OCAT was introduced in 1971.

For the first five years of OCAT administration, the number of applicants taking the OCAT had shown progressive increases. However, a "leveling off" of applicants occurred in 1976-77, followed by an 11% decline in 1977-78. Similar declines have been reported by medicine (10%)¹⁰ and dentistry (10%).¹¹ It is obvious that the reduction in the undergraduate college population has begun to affect the number of applicants to professional schools.

The percent of female applicants showed a marked increase over the seven-year period, increasing from an initial 5% to 19% of the total applicant group. However, the actual number of women applicants declined to 693 in 1977-78 from 723 in 1976-77, suggesting that the trend of the last six years for more women to seek careers in optometry may have ended.

A significant change in the applicant's college status developed over the seven years. A progressively smaller proportion of those taking the OCAT were college sophomores, 21% in 1971-72, only 10% in the 1977-78 year. The largest group of applicants taking the OCAT, college seniors, increased from 27% to 37% over the seven-year span. It is interesting to note that the percent of other groups, college juniors and graduates, changed very little, the juniors being $24 \pm 2\%$ and the graduates $27 \pm 3\%$ over the seven-year period. Consistent with this, the percent of applicants above age 22 remained stable, $30 \pm 2\%$, while those aged 19 dropped from 15% to 8%.

Biology continued as the most common undergraduate major, actually increasing from 45% in the 1971-72 applicant pool to 62% for the 1977-78 group. Physical science and math, the second most popular major, remained relatively unchanged, constituting only $16 \pm 1\%$ of the total group. Humanities majors remained stable at 2%, as did

social science majors at $9 \pm 2\%$. Social sciences and humanities majors combined represent less than 15% of the applicant pool. The miscellaneous "Other" majors dropped from 22% to 11%. Increasingly, the great majority of the total applicant pool have majors in one of the traditional sciences or mathematics.

The geographical distribution of the applicants among the various regions of the country continued fairly stable. In addition, the percentage of applicants from each region matched quite closely the percentage of the general population in their respective regions. Thus candidates for the profession of optometry do not come disproportionately from any region of the U.S.

Expanded Biodata Census

In 1973 an expanded biographical questionnaire was included with the OCAT and the five-year experience with this form is summarized in this section. In most ways the applicant pool for schools and colleges of optometry in 1977-78 was remarkably similar to that of the previous four years. Table 2 shows the distribution of the percentage of OCAT applicants on the expanded biographical questionnaire.

Over three-fourths of the applicants were not married (77%-84%)* at the time they completed the OCAT questionnaire, nor did they expect to be married upon admission (71%-78%). Fewer than 5% had one child, and only 2% had two or more dependent children.

The highest level of education completed by the plurality of fathers or the applicants was professional or graduate school (23%-25%); more than half of the applicants had fathers with some college education. In contrast, the highest level of education attained by the plurality of mothers of applicants was high school (37%-34%). Less than 10% of the mothers of applicants had graduate or professional training and only a third had some college training.

The primary occupation of the parents of applicants remained remarkably stable over the five years. The most frequent occupations listed for fathers were proprietor of a small business, skilled crafts, professional other than optometrist or health-related, and executive in business or government. Only six or 7% of the fathers of applicants were optometrists. The mothers of half of the applicants were home-

makers; the second largest category was in clerical or sales positions. A significant drop of 7% in the homemaker category over the five-year period suggests that mothers are returning or entering the work force.

More than a third of the applicants' parents had a combined annual income of \$20,000 or more. The 10% increase in this category more reflects adjustment to the continuing inflationary trend than increase in wealth. Only 2% of the applicants said that their parents' income was less than \$5,000. Clearly, the more affluent and higher educated parents must be supporting their children to pursue a career in optometry. Interestingly, between 20% and 30% of the applicants either did not know or preferred not to respond to the question of parental income.

About half the applicants spent their youth in what was labeled as suburban communities. The remainder were almost evenly divided between rural and urban communities. In a parallel question, a quarter of the applicants stated that their youth was spent in communities with a population of less than 10,000 inhabitants, and another quarter of the applicants spent their youth in communities of over 100,000 population. Not surprisingly, almost all of the applicants (97%) were American citizens, with only 1% from Canada and 2% from other countries.

"Caucasian or White" applicants represented 87% of the applicant pool in 1973-74, but fell to 79% in 1977-78. These were followed in percent by "Oriental or Asian-Americans" (4%-7%), and then by "Afro-American or Blacks" (3%). Those who "Preferred Not to Respond" increased from 2% to 5% in the five-year span under consideration.

In terms of religious affiliation, slightly more than a third were Protestant, about a quarter were Catholic, and a declining 16% to 12% were Jewish. Other religions summed to between 7% and 10%. An increasing percent (17%-20%) said that they had no religious preference or preferred not to respond.

Three-fourths of the applicants did not expect to serve in the military. An increase was noted (10%-15%) in those who were undecided about military service. In contrast a 5% decline was noted in applicants who had served on active duty (9%-4%).

In terms of the applicants' educational background, almost half of the applicants had attended large undergraduate institutions of more than 10,000 students, and one-fifth had attended insti-

*Percentages indicating the range over the five-year period.

Table 1
DISTRIBUTION OF OPTOMETRY APPLICANTS BY SEX, REPEATER STATUS, COLLEGE LEVEL,
MAJOR, AGE AND GEOGRAPHIC REGION - 1971-72 to 1977-78

	1971-72		1972-73		1973-74		1974-75		1975-76		1976-77		1977-78	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
TOTAL	2202	100	2714	100	3279	100	4047	100	4173	100	4087	100	3639	100
SEX														
Male	2087	95	2523	93	2980	91	3527	87	3571	86	3364	82	2946	81
Female	115	5	191	7	299	9	520	13	602	14	723	18	693	19
REPEATER STATUS														
Nonrepeater	---	---	2511	93	2877	88	3303	82	3154	76	2966	73	2640	73
Repeater	---	---	203	7	402	12	744	18	1019	24	1121	27	999	27
COLLEGE STATUS														
Freshman	4	0	24	1	13	---	---	---	15	---	10	---	9	---
Sophomore	461	21	576	21	620	19	609	15	497	12	478	12	368	10
Junior	488	22	617	23	782	24	1033	26	1000	24	998	24	907	25
Senior	596	27	746	27	1009	31	1394	34	1566	38	1501	37	1358	37
Graduate	653	30	751	28	855	26	1011	25	1095	26	1100	27	997	27
MAJOR														
Biology	989	45	1278	47	1615	49	2317	57	2553	61	2485	61	2253	62
Humanities	68	3	65	2	98	3	89	2	91	2	85	2	90	2
Math, Science	431	19	463	17	554	17	583	15	647	16	652	16	615	17
Social Science	235	11	302	11	370	11	377	9	394	9	352	9	293	8
Other	479	22	606	23	642	20	681	17	488	12	513	12	388	11
AGE														
18 or below	26	1	33	1	45	1	36	1	24	1	18	---	18	---
19	342	15	388	14	426	13	440	11	389	9	360	9	278	8
20	429	20	525	19	651	20	826	21	797	19	820	20	715	20
21	430	20	565	21	722	22	946	23	1067	26	1023	25	911	25
22	975*	44*	1203*	45*	427	13	627	16	651	16	627	15	548	15
23					256	8	328	8	382	9	357	9	353	10
24					188	6	206	5	217	5	240	6	198	5
25					143	4	160	4	177	4	153	4	164	5
26 or over					391	12	442	11	438	10	454	11	424	12
REGION														
Northeast	109	5	147	5	191	6	260	6	289	7	271	7	227	6
Mid-Atlantic	576	26	751	28	906	28	1019	25	1118	27	1006	25	900	25
Southeast	312	14	360	13	400	12	510	13	543	13	533	13	490	13
South Central	245	11	324	12	347	11	432	11	392	9	380	9	369	10
North Central	92	4	88	3	95	3	130	3	155	4	148	4	135	4
Midwest	506	23	583	22	769	23	898	22	919	22	929	23	788	22
Far West	322	15	422	16	514	16	738	18	705	17	775	19	683	19
Other	40	2	39	1	57	2	60	2	52	1	45	1	47	1

Sources: The Psychological Corporation Annual Report to Deans and Admissions Officers of Colleges of Optometry, 1973-1978; and Supplement to Optometry College Admission Test Handbook, December 1975 and April 1977. (See references 2-9.)

* Ages 22-26 for the years 1971-72 and 1972-73 were not available.

Table 2
SUMMARY OF YEARLY CENSUSES OF APPLICANTS TO
SCHOOLS AND COLLEGES OF OPTOMETRY, 1973-74 to 1977-78

	1973-74	1974-75	1975-76	1976-77	1977-78		1973-74	1974-75	1975-76	1976-77	1977-78
	Percent	Percent	Percent	Percent	Percent		Percent	Percent	Percent	Percent	Percent
Married	23	21	18	16	16	Executive—Busi-					
Not Married	77	79	82	84	84	ness, Govern-	13	14	13	15	14
Expect to be Married	29	26	25	24	22	ment					
Marriage Not						Optometrist	7	6	7	6	6
Expected	71	74	75	76	78	Other Health					
Dependent Children						Profession	6	6	7	7	8
None	92	93	94	95	94	Other Profession	16	17	16	17	19
1	5	5	4	3	4	Mother's Primary					
2 or 3	2	2	2	2	2	Occupation					
4 or 5	*	*	*	*	*	Unskilled	3	3	2	2	3
More than 5	*	0	0	0	0	Farmer	*	*	*	*	*
Brothers						Semiskilled	4	4	4	4	4
None	32	31	28	26	29	Service	1	1	1	1	1
1	36	37	37	38	36	Homemaker	51	49	49	45	44
2	20	20	21	21	21	Skilled/Crafts	4	4	5	5	5
3	7	8	8	10	8	Clerical/Sales	16	16	16	17	17
4 or more	4	5	5	5	5	Military Officer	*	*	*	0	*
Sisters						Proprietor Small					
None	32	31	28	26	29	Business	4	4	5	5	5
1	40	39	41	41	38	Executive—Busi-					
2	18	19	19	21	21	ness, Govern-	2	1	1	1	2
3	6	7	8	7	7	ment	*	*	*	*	*
4 or more	3	4	4	6	4	Optometrist					
Father's Highest						Other Health					
Education						Profession	6	6	5	6	6
8th Grade or Less	7	7	6	7	6	Other Profession	12	13	12	13	12
Some High School	8	8	9	8	7	Parents' Combined					
Completed High						Income					
School	22	21	20	18	19	Unknown	13	14	16	18	18
Business/Tech-						Less than \$5,000	2	3	2	2	2
nical	8	9	10	10	9	\$5,000-\$9,999	10	8	7	6	6
Some College	16	16	15	15	15	\$10,000-\$14,999	22	20	17	14	12
Completed						\$15,000-\$19,999	18	19	17	16	16
College	15	16	16	18	18	\$20,000 or more	27	30	31	33	37
Graduate/						Prefer Not to					
Professional	23	23	24	25	26	Respond	7	7	9	10	10
Mother's Highest						Type Community					
Education						of Youth					
8th Grade or Less	5	5	4	5	4	Rural	25	25	26	26	25
Some High School	7	7	8	7	6	Suburban	50	51	51	54	54
Completed High						Urban	25	24	23	21	21
School	37	37	36	34	34	Size Community					
Business/Tech-						of Youth					
nical	12	11	13	13	14	Under 10,000	27	26	27	27	25
Some College	17	18	18	18	17	10,000-50,000	34	36	34	35	36
Completed						50,000-100,000	14	13	15	16	16
College	14	15	15	15	16	Over 100,000	25	25	24	23	24
Graduate/						Citizenship					
Professional	7	8	7	9	9	United States	97	97	97	97	96
Father's Primary						Canada	1	1	1	1	1
Occupation						Other	2	2	2	2	3
Unskilled	3	3	3	3	3	Self-Description					
Farmer	3	2	2	3	2	Afro-American					
Semiskilled	6	7	6	6	6	or Black	3	3	3	3	3
Service	3	2	2	3	3	American Indian					
Homemaker	0	0	*	*	*	or Native					
Skilled/Crafts	15	14	15	15	13	American	1	1	1	1	1
Clerical/Sales	8	8	7	6	7	Caucasian or					
Military Officer	1	1	1	1	1	White	87	83	81	80	79
Proprietor Small						Mexican-American					
Business	19	18	20	17	17	or Chicano	1	1	1	1	2

Sources: The Psychological Corporation Annual Report to Deans and Admissions Officers, 1973-1978; and Supplement to Optometry College Admission Test Handbook, December 1975 and April 1977. (See references 2-9.)

Note: Figures may be converted from percentages to actual numbers of applicants by using sizes of total applicant pool given in Table 1.

*Responses were less than half of 1%; therefore, not entered in the table.

Table 2—Continued

	1973-74	1974-75	1975-76	1976-77	1977-78		1973-74	1974-75	1975-76	1976-77	1977-78
	Percent	Percent	Percent	Percent	Percent		Percent	Percent	Percent	Percent	Percent
Oriental or Asian-American	4	6	5	6	7	Primary Reason for Choice					
Puerto Rican (Mainland)	•	•	1	1	1	Work with People	48	49	46	44	43
Other	2	2	3	3	3	Interest in Content	37	38	40	42	43
Prefer Not to Respond	2	3	5	5	5	Be Own Boss	4	4	4	4	4
Religious Preference						Prestige	1	1	1	1	1
None	11	11	12	13	13	Monetary	1	1	1	1	1
Catholicism	24	24	21	24	24	Poor Vision	1	1	1	2	1
Judaism	16	15	14	12	12	Better Chance of Admission	1	2	1	1	1
Protestantism	37	36	35	34	35	Literature	2	2	2	2	2
Other	7	9	10	9	10	Other	3	4	4	4	4
Prefer Not to Respond	6	5	8	7	7	Type Community for Practice					
Military Service						Rural	18	20	21	21	21
Served—Active Duty	9	7	6	5	4	Suburban	31	32	30	32	32
Served—Reserves	1	1	1	1	1	Urban	15	14	14	12	12
Serving—Active Duty	1	1	1	1	1	Undecided	37	34	35	35	34
Serving—Reserves	2	2	1	1	1	Size Community for Practice					
Expect to Serve — Active Duty	3	2	2	2	2	Under 10,000	14	16	15	16	15
Expect to Serve — Reserves	1	1	2	2	1	10,000-50,000	31	33	32	33	33
Do Not Expect to Serve	73	73	73	74	75	50,000-100,000	13	12	12	13	12
Undecided	10	13	14	16	15	Over 100,000	12	11	10	9	10
Undergraduate Institution Size						Undecided	30	28	30	30	30
Less than 500	1	1	1	1	1	Expect Loan or Scholarship					
500 to 999	4	4	4	4	4	Yes	55	57	60	63	65
1,000 to 1,999	12	10	11	11	13	No	45	43	40	37	35
2,000 to 4,999	15	15	16	15	16	Application to Others					
5,000 to 10,000	20	20	19	20	19	Medicine — Yes	15	12	11	5	9
More than 10,000	47	48	48	49	46	— No	76	78	78	83	81
Undergraduate Average						— ?	9	10	12	12	11
A (4.0)	1	1	1	1	1	Dentistry — Yes	14	14	11	8	6
B+ (3.5-3.9)	11	13	17	19	22	— No	75	76	78	80	83
B (3.0-3.4)	37	42	45	49	48	— ?	11	10	11	12	10
C+ (2.5-2.9)	42	37	33	27	25	Osteopathy — Yes	4	3	4	3	2
C (2.0-2.4)	9	6	5	4	4	— No	90	90	90	92	92
D or below (less than 2.0)	•	•	•	0	•	— ?	6	6	6	6	6
Highest Earned Academic Degree						Pharmacy — Yes	4	5	4	4	3
High School Diploma	58	59	56	56	58	— No	86	85	86	86	87
Associate Degree	9	8	10	9	8	— ?	10	10	11	10	9
Bachelor's	30	29	30	31	31	Podiatry — Yes	4	4	3	2	1
Master's	2	2	2	3	2	— No	91	90	90	92	94
Doctorate	1	•	1	1	1	— ?	6	6	7	6	5
Other	1	1	1	1	1	Veterinary — Yes	2	2	1	1	1
Optometrist Relative (Non-parent)						— No	93	93	94	94	95
Yes	14	14	14	14	15	— ?	5	5	5	5	4
No	86	86	86	87	85	Entrance Examinations					
Most Influence in Career Choice						Medical College Admission Test					
Relative Non-Optometrist	6	6	7	8	7	— Yes	16	15	17	15	14
Relative Optometrist	11	12	11	10	10	— No	84	85	83	85	86
Non-Relative Optometrist	39	39	41	41	42	Dental Admission Testing Program					
Person in Health Field	12	11	10	11	10	— Yes	15	15	14	12	10
Teacher	2	2	2	2	2	— No	85	85	86	88	90
Counselor	3	4	3	3	3	Pharmacy College Admission Test					
Personal Friend	9	10	8	7	7	— Yes	•	•	1	2	2
Other	17	18	18	18	18	— No	100	100	99	98	98
						Veterinary Aptitude Test					
						— Yes	1	•	1	1	1
						— No	99	100	99	99	99
						College of Podiatry Admission Test					
						— Yes	3	3	3	2	1
						— No	97	97	97	98	99

tutions of between 5,000 and 10,000. Less than 5% had attended small colleges of under 1,000 students. Three-fourths of the applicants reported grade point averages ranging between C+ and B (2.5 to 3.4). However, a significant increase from 11% to 22% was noted in those reporting a B+ average (3.5 to 3.9). Equally significant, a 17% decrease was noted in the C+ student (2.5-2.9). More than half of the applicants indicated that a high school diploma was the highest academic degree earned, corresponding to the college status reported in Table 1 which indicated that most of the applicants were juniors or seniors in college when they responded to the questionnaire. About 30% of the applicants had completed a bachelor's degree, 2% a master's degree and 1% a doctoral degree. These figures have remained very stable over the five years of data collection.

Approximately 20% of the applicants were related to an optometrist. Six percent of the applicants had fathers who were optometrists; another 14% to 15% had a non-parent relative who was an optometrist. Thus a nearly constant one-fifth of the applicant pool are relatives of optometrists.

In reply to the question of who most influenced their career choice, the plurality of applicants responded that an optometrist unrelated to them was the major influence in choosing optometry (39%-42%); this was followed by a relative optometrist (10%-12%), and persons in health occupations (10%-12%). The importance of the practicing optometrist in influencing future optometrists is obvious. With a decline in the number of applicants to schools and colleges of optometry, the practicing optometrist may well play an even more, significant role in guiding future applicants to the profession.

Nearly 85% of the applicants stated that their chief reason for choosing a career in optometry was either a desire to work with people or an interest in the content of the profession. Reasons such as monetary, prestige, poor vision, and better chance of admission each accounted for only a 1% response. One cannot tell the extent to which this question was answered by applicants in ways that they felt might improve their chances for admission. This could, indeed, equally apply to a number of other questions contained in the questionnaire.

A third of the applicants indicated a preference for a suburban community with a population between 10,000 and 50,000 for their practice location;

another third of the applicants were undecided as to type and size of community preference. Interestingly, only 10% to 15% were interested in an urban environment with a population of 100,000 or more. None of these preferences showed significant change over the five years.

Two-thirds of the 1977-78 applicants indicated that they expect to receive financial aid through a loan or scholarship. This represents an increase of 10% over those who applied in 1973-74. Clearly, this is a problem for applicants, and will become greater with the increasing cost of education.

The question is often asked, "How many of the applicants regard optometry as their first choice career?" In 1973-74, 15% of the applicants had applied or planned to apply for admission to medical school. By 1977-78 this number had declined to 9%. Similar reductions occurred for the other named health professions: dentistry, 14% to 6%; osteopathy, 4% to 2%; pharmacy, 4% to 3%; podiatry, 4% to 1%; and veterinary medicine, 2% to 1%. By 1977-78 more than four-fifths of the applicants responded that they did not plan to apply to any other health profession. From this it seems clear that for the large majority of the applicants, the profession of optometry was not only their first choice, it was their only choice within the health profession.

In general, the applicant pools for the five-year period from 1973-74 to 1977-78 were remarkably similar. However, a small number of questions showed progressive changes of 5% to 10% or more. When dealing with applicant pools of 3,000 to 4,000 persons, a change of 5% or 10% represents a large number of individuals and can indicate a significant trend.

DECLINES of 10% or more were noted in the following areas, usually with an associated increase in one or more other choices.

- (-17%) undergraduate average C+ (42% - 37% - 33% - 27% - 25%)*
- (-10%) parents combined income was \$10,000-\$14,999 (22% - 20% - 17% - 14% - 12%)
- (-10%) did not expect loan or scholarship (45% - 43% - 40% - 37% - 35%)

DECLINES of 5% to 9% were noted over the five-year span in the following.

*Numbers shown in parentheses are percentages of applicants indicating the response in the five years, 1973-74 to 1977-78.

- (-8%) Caucasian or white race (87% - 83% - 81% - 80% - 79%)
- (-8%) applied to dentistry (14% - 14% - 11% - 8% - 6%)
- (-7%) married (23% - 21% - 18% - 16% - 16%)
- (-7%) expect to be married (29% - 26% - 25% - 24% - 22%)
- (-7%) mother's primary occupation was homemaker (51% - 49% - 49% - 45% - 44%)
- (-6%) applied to medicine (15% - 12% - 11% - 5% - 9%)
- (-5%) primary reason for choosing optometry was to work with people (48% - 49% - 46% - 44% - 43%)
- (-5%) served on active duty (9% - 7% - 6% - 5% - 4%)

Continuing INCREASES of 10% or more were noted as follows in the five-year period.

- (+11%) undergraduate grade point average was B+ or 3.5 to 3.9 (11% - 13% - 17% - 19% - 22%)
- (+11%) undergraduate grade point average was B or 3.0 to 3.4 (37% - 42% - 45% - 49% - 48%)
- (+10%) parents combined income was \$20,000 or more (27% - 30% - 31% - 33% - 37%)
- (+10%) expect to receive loan or scholarship (55% - 57% - 60% - 65%)

Continuing INCREASES of 5% to 9% were noted in the following.

- (+8%) did not apply to dentistry (75% - 76% - 78% - 80% - 83%)
- (+7%) not married (77% - 79% - 82% - 84% - 84%)
- (+7%) marriage not expected (71% - 74% - 75% - 76% - 78%)
- (+6%) chose optometry because of interest in its content (37% - 38% - 40% - 42% - 43%)
- (+5%) parents combined income unknown (13% - 14% - 16% - 18% - 18%)
- (+5%) undecided as to military service (10% - 13% - 14% - 16% - 15%)
- (+5%) did not apply to medicine (76% - 78% - 78% - 83% - 81%)

Conclusions

The stability and changes noted in the census characteristics of applicants have been identified and permit conclusions regarding increasing or decreasing trends or continuing levels in the applicant populations. In the near future, The Psychological Corporation will be analyzing the same biographical characteristics for enrolled students and for each individual school for further comparison. Such analyses will be of considerable value to the profession and educational institutions.

Four major concerns emerge from the analysis of the OCAT census that should be recognized and addressed by the profession of optometry.

1. An increasing number of applicants, up to two-thirds of the applicant pool for 1977-1978, require financial assistance. Progressively mounting educational costs, particularly in the private schools, threaten to eliminate the low or average income student. Optometry needs to consider how less-than-affluent students may finance an optometric education. At one extreme, the profession may become largely restricted to the affluent with little input from the majority of the people. At the other extreme, students will increasingly graduate with such large financial debts that they will be forced into a mode of practice in which the primary concern is financial gain.

2. Optometrists continue to play a crucial role in encouraging young people to select optometry as their career. In each of the past five years, optometrists were the major influence in approximately 60% of the applicants' career choice. With a declining college

student population, which in turn has resulted in a declining optometry applicant pool, the practicing O.D.'s must continue, and perhaps expand, their active encouragement of future optometrists. Optometrists need to be informed of the important role they play in the recruitment process.

3. The percent of minority applicants has remained constant over the past five years. The percent of female applicants, after increasing for four years, has begun to level off. Minority students and females are greatly underrepresented in the applicant pool, constituting 19% female, 3% black, 1% Puerto Rican, 1% American Indian, and 1% Mexican-American in 1977-1978. Greater effort to improve on these statistics and generate greater minority and female representation needs to be undertaken if the profession is to become representative of the diversity within the population.

4. As applicants, only 10% of the pool now wish to practice in an urban environment with a population of 100,000 or more. Will eye care in metropolitan centers come to be ren-

dered more and more by large commercial establishments? Will readiness to practice in a large city become a priority selection criterion in the admission process? The problem of how to provide highest quality eye care to urban residents in the future must be addressed at the national level.

Census data which have not changed over the last five to seven years may alter in the future, just as those which show a clear trend now may reverse direction at some later time. Because the OCAT biographical questionnaire anticipates by some four to five years the features of newly graduated optometrists, it provides the profession with a cushion of time within which to become informed and to develop appropriate reactions. In this sense it constitutes a valuable resource for data which will affect the practice of optometry. □

References

1. Levine, N.R. and Levine, L. A Study of Applicants to Colleges of Optometry in the U.S. *J. Am. Opt. Assoc.* 47:616-623, 1976.
2. The Psychological Corporation Annual Report to Deans and Admissions Officers of Colleges of Optometry. New York, June 1973.
3. The Psychological Corporation Annual Report to Deans and Admissions Officers of Colleges of Optometry. New York, May 1974.
4. The Psychological Corporation Annual Report to Deans and Admissions Officers of Colleges of Optometry. New York, May 1975.
5. The Psychological Corporation Annual Report to Deans and Admissions Officers of Colleges of Optometry. New York, May 1976.
6. The Psychological Corporation Annual Report to Deans and Admissions Officers of Colleges of Optometry. New York, July 1977.
7. The Psychological Corporation Annual Report to Deans and Admissions Officers of Colleges of Optometry. New York, May 1978.
8. The Psychological Corporation. Supplement to Optometry College Admission Test Handbook. OCAT Results and Applicant Characteristics. New York, December 1975.
9. The Psychological Corporation. Supplement to Optometry College Admission Test Handbook. OCAT Results and Applicant Characteristics 1975-76. New York, April 1977.
10. Dulcan, S. Competition for Medical School: The Stork Revisited. *The Advisor* 14:1, 1978.
11. Graham, J.W. and Kinsey, R. An Analysis of the Decline in Dental School Applicants. *Handbook for Pre-Dental Advisors, Fall, 1978.* Chicago: American Dental Association, 1978.

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Optometric Shortage Areas

Changes in Federal Policy

by Michael Heiberger and Mort Soroka

Introduction

A major shift in public policy on the part of the federal government occurred in 1963 with the passage of the first Health Professions Educational Assistance Act (HPEA). This marked the first instance of direct federal support to institutions expressly for the purpose of teaching activities in the health professions.¹ The impetus for this support was a perceived shortage of physicians and other health care professionals as well as a geographic maldistribution of health manpower. Included in the legislation was an incentive for graduates to practice in shortage areas. The incentive took the form of loan repayment provisions.

The latest Health Professions Educational Assistance Act, that of 1976, was enacted amidst Congressional concern that there was no longer an overall shortage of physicians and other health professionals but there remained a geographic maldistribution. This latest act provides for alternative bases for the determination of specific shortage areas for each health profession as well as for continuation and expansion of loan repayment provisions.

While major changes in emphasis are exhibited by the 1976 HPEA legislation, the principle of loan repayment for practice in a designated shortage area has been continued. Ironically, prior to this new legislation, loan repayment provisions applied to *all* educational loans. Under the new law, only loans under the Health Professions Student Loan Program are subject to repayment

for shortage area practice. This program makes students of optometry eligible for loans of up to "\$2,500 plus the cost of tuition" per year, albeit at a 7 percent rate of interest; the rate under previous legislation being 3 percent.

A sharply increasing cost of education (tuition, books, instruments and living expenses) with a resultant increasing financial need of students, coupled with a decline in the funding of scholarship and grant programs, will greatly affect student debt. Thus, the provisions for loan repayment for shortage area practice become increasingly important.

Although the HPEA of 1976 somewhat alters the conditions required for areas to be designated as shortage areas, there remain two specific parameters which are essential in this process. They are: (1) the number of full-time practicing optometrists, and (2) the geographic boundary of the specific area which in turn defines the population served. The 1976 act actually broadens the bases on which shortage areas may be determined. For example, in addition to specific geographic areas such as counties, a population group or even a private or nonprofit health facility may be considered to have a shortage of practitioners in a particular discipline.

This paper will describe, in part, a particular situation in New York City whereby, through careful documentation, it was possible to convince the appropriate authorities that their original shortage area designations for portions of the city were both inaccurate and irrational. Similar flexibility will continue to exist under the new legislation because the basic parameters have not changed.

The final authority for shortage area designation is the Secretary of Health, Education and Welfare. This authority, in practice, has been delegated to individual state agencies, usually state

health departments. In New York State, the State Health Department recommends the designation of shortage areas to HEW. Prior to the study described here, optometric shortage areas were based solely on the number of registered optometrists in a particular county and the population of that county. A ratio of less than one optometrist per 15,000 population qualified the county as a shortage area.

The law does not mandate that geographic areas be defined on a county basis nor does it require equating the number of registered optometrists with the number of full-time practicing optometrists. Like state agencies most everywhere, the New York State Department of Health claimed that it had insufficient personnel to do anything more than take the number of registered optometrists and apply it to population on a county basis. However, the Department was willing to receive a well-documented argument for an alternative method of shortage area designation for any specific health profession. The study described here provided that documentation and eventually won designation of specific areas of New York City as optometric manpower shortage areas.

Methodology

A computer printout listing all registered optometrists in New York City was obtained from the Division of Licensing Services of the State Education Department of New York. Additions to the list were made to insure the inclusion of all optometrists who may not have been listed by virtue of the address reported in their license. *The Blue Book of Optometrists* and the *Yellow Pages* listings for optometrists were used for this purpose. Letters explaining the nature of the survey and accompanying

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questionnaires were mailed to a total of 743 optometrists.

Six weeks later, follow-up questionnaires were sent to all nonrespondents. A telephone survey was initiated in an attempt to reach those optometrists who failed to respond to either questionnaire. Questionnaire responses and telephone interviews were received from 646 optometrists, providing an overall response rate of 87 percent.

New York City is composed of five counties including Manhattan, Brooklyn, Queens, Staten Island and the Bronx. The City Planning Commission and the Comprehensive Health Planning Agency of New York City had established community planning districts and comprehensive health planning districts for each county. These boundaries were used to determine whether areas within these counties should be designated as shortage areas based upon the federal guidelines of one optometrist per 15,000 population. Ratios of optometrists per population for each district were calculated prior to the mailing of questionnaires. Responses received from optometrists either substantiated the existence of a practice within a particular district or provided documentation that the optometrist was no longer in practice at that location. A total of 102 optometrists were removed from the original list because they had moved out of the county, were no longer in practice, or were deceased or retired. (See Table 1.) More than three-quarters of all those identified were in full-time practice with an additional 8 percent in part-time practice. Ratios of all active optometrists

were recalculated for all districts within each county. As a result, a number of districts in Brooklyn (Kings County) and Manhattan (New York County) were found to be shortage areas based on federal guidelines.

Eleven of the eighteen community planning districts in Brooklyn (with populations of 2,593,219) had fewer than one optometrist per 15,000 population. The disparity among optometrists within each planning district was striking. Flatbush and Sheepshead Bay (both middle income areas) had one optometrist per 7,500 persons as compared to Bedford Stuyvesant (an economically depressed neighborhood) with a ratio of one optometrist per 54,000 population. Similarly, a maldistribution of optometrists was found among the districts in Manhattan (population 1,538,362). As a whole, New York County had one optometrist per 9,000 population. However, three of its 12 districts had a shortage of optometrists. Nonresidential areas which were mainly commercial and business centers (such as Wall Street and Times Square districts) were overpopulated with optometrists who were practicing predominantly in commercial optical houses and storefronts. Similar maldistribution trends have been documented in Queens and the Bronx.

Discussion

In a city that has more optometrists than any other in the country, a number of neighborhoods in poverty-stricken areas have been located that have acute health problems and few health professionals to deal with them.

This survey has demonstrated that areas in New York City are shortage areas as defined by the federal standards of one optometrist per 15,000 population. The data was submitted to the Health Department of New York State and the Bureau of Health Manpower of the Department of Health, Education and Welfare. Based upon this data, HEW has designated those districts in Brooklyn and Manhattan as optometric shortage areas.²

This study has also shown that registry figures are misleading. The lists obtained from the Division of Professional Licensing Services of the State Education Department were found to be inaccurate, incomplete and could not be considered a true representation of the locations of practicing optometrists. These lists do not distinguish between practicing optometrists and persons who are licensed but do not practice their profession. Optometrists engaged in teaching, research, administration, and law should not be counted as providing patient care when considering manpower shortage areas. Moreover, many names recorded in the official registry listed the optometrist's home address rather than the site of his practice. A number of optometrists registered in a county may, in fact, be practicing in another county. Some optometrists in this study were found to be living in other states. An optometrist may continually renew a New York license and maintain a dual registration throughout a professional career. Manpower figures derived from registration lists may be inflated as a result of retired optometrists who maintain their license and reregister each

Table 1
ACTIVITY STATUS BY AGE
NEW YORK CITY 1976 (N = 646)

Activity Status	Age						Unk	Total	Percent Distribution
	>30	31-39	40-49	50-59	60-69	70+			
Full time	35	44	102	157	68	72	77	495	76.6
Part time	1	4	2	7	10	14	11	49	7.6
Retired	0	0	1	1	6	9	25	42	6.5
Moved	3	0	2	0	1	1	27	34	5.3
Deceased	0	0	0	0	0	0	5	5	0.8
*Other	0	1	0	8	1	0	11	21	3.2
Total	39	49	107	173	86	36	156	646	100.0

*"Other" includes those nonpracticing optometrists engaged in research, teaching, administration or other activities.

Table 2
ANNUAL NUMBER OF OPTOMETRIC VISITS REQUIRED PER PERSON, BY AGE

Age	Under 20	20-29	30-39	40-49	50-64	65 and over
Number of Visits	0.11	0.20	0.24	0.35	0.41	0.48

year. Unless provisions for such corrections are made, the use of registration lists for determining shortage areas may be a misrepresentation of the actual manpower pool.

The designation of health manpower shortage areas should not be based on a county by county basis when such subdivision does not reflect logical areas for the planning and delivery of health services. In this study, community planning districts and comprehensive health planning districts were used. The National Health Planning and Resource Development Act of 1974 has made it mandatory for health planners to designate regional and statewide health areas. It may be necessary to subdivide such areas so that problems relating to local and community areas would be highlighted.

On January 10, 1978, HEW published interim-final regulations detailing the criteria for designation of health manpower shortage areas including vision care.³ These criteria replaced the previously applied federal standard of one optometrist per 15,000 population. The newly proposed regulations use the estimated requirement for optometric visits by population as a basis for determining manpower shortage areas. The need for optometric care or the number of optometric visits required by an area's population will be based on Table 2.

As can be seen from this table, only two-fifths of those between the ages of 50-64 years and less than one out of every two persons over 65 years of age are presumed to be in need of optometric services. According to the proposed regulations, only every tenth individual under the age of 20 years requires optometric care.

The supply of optometric services is based upon the following assumptions:

1. All optometrists under the age of 65 are assumed to supply 3,000 optometric visits.

2. Optometrists over 65 years are estimated to provide 2,000 optometric visits.

3. Ophthalmologists are also added to the formula that determines the supply of optometric services. Each ophthalmologist, according to HEW's formula, supplies 1,500 optometric visits.

Priority ratings are then assigned to all

counties that qualify as shortage areas as determined by these criteria. Areas that have no optometric visits supplied (i.e., no optometrists or ophthalmologists) are assigned a rating to group I. Those areas that have 50 percent or less of the number of visits required fall into group II. All other areas that have between 50 percent to 100 percent of the required number of visits are assigned to group III. Unless a county has a shortage of less than 1,500 optometric visits, it is unlikely that it will be designated as a shortage area. Furthermore, those areas that are within forty minutes travel time from a center which has adequate vision care will also not be designated as shortage areas.

In an attempt to improve health care delivery, federal legislation enacted in 1974 (the National Health Planning and Resource Development Act) provided for the creation of Health Systems Agencies (HSA), replacing the Comprehensive Health Planning Agencies. Included within their mandate, Health Systems Agencies have been given the responsibility to address "the unique needs of the community." They must identify those discrete geographical areas which lack adequate health care resources. HSA plays a major role in the designation of shortage areas. The HSA is expected to review and obtain manpower data for the communities it represents and to provide recommendations to HEW for the formal designation of specific areas.

Although the newly proposed HEW criteria have not been fully approved, HEW nonetheless has been using these guidelines. On July 17, 1978, HEW published the first list of health manpower shortage areas using the new criteria. It contains almost 3,000 areas and include facilities and population groups. Of the 2,985 areas that were designated, 2,393 were rural and 593 urban. Four facilities and 29 population groups, mainly Indians and migrant workers, were included.

Prior to this, HEW sent each HSA copies of the criteria plus a list of those counties that would qualify as shortage areas. Some 199 areas have been designated dental shortage areas and 1,400 areas are short of podiatrists. Almost 100 areas lack pharmacists and

some 682 areas are in need of veterinarians. Unfortunately, only 91 areas were designated as optometric shortage areas by the Bureau of Health Manpower's Manpower Analysis Branch (MAB), although hundreds of other counties were considered shortage areas under the old system. HSAs have been lax in reviewing and requesting that counties be designated as shortage areas. Organized optometry, including optometric institutions and practitioners, have the responsibility to make formal requests to HSAs to review and designate those areas that have an acute shortage of optometric manpower.

Conclusion

The importance of securing the designation of areas as manpower shortage areas should not be overlooked. Students practicing in these areas qualify for the federal loan repayment program. Moreover, those areas that have been so designated will be given priority in assigning National Health Service Corps personnel. With the expansion of the National Health Service Corps, certain areas, populations and facilities have already applied for health personnel through this program. Entities in the areas are also eligible to apply for and receive preference for certain grant programs under the Public Health Service Act.

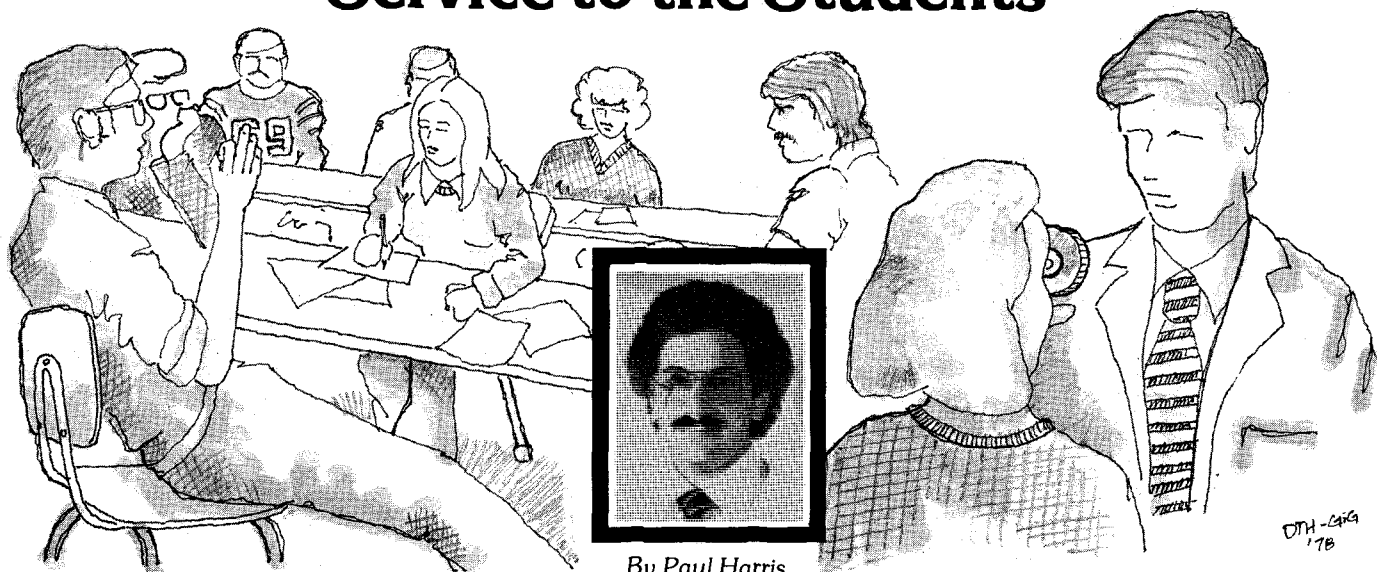
Under the newly proposed shortage area regulations, the criteria for shortage area designation are far more restrictive. Moreover, a precedent is being established whereby the number of ophthalmologists is now a factor in determining optometric shortage areas. It is interesting to note that the HEW formula assumes that one-half of an ophthalmologist's time is spent in optometric activities. □

References

1. Reinhardt, U.E. Health Manpower Policy in the United States: Past and Prospective. Unpublished paper presented at the Bicentennial Conference on Health Policy, University of Pennsylvania, November 11-12, 1976.
2. Soroka, M. Shortage Areas for Optometrists Redefined: New York City, A Case Study. *American Journal of Optometry and Physiological Optics* 54(2):125, February, 1977.
3. Designation of Health Manpower Shortage Areas. *Federal Register* 43:6, January 10, 1978.

AOSA . . .

"Health Care to the People, Service to the Students"



By Paul Harris

The American Optometric Student Association (AOSA) is a nonprofit corporation of the students at all thirteen schools and colleges of optometry in the United States with the two optometry schools in Canada being associate members. AOSA is a young association but has grown into its own as a major force within the optometric community. Over the past four years, the annual budget has doubled, giving the needed capital to carry on many programs and benefits for the members.

To help accomplish AOSA's many tasks, a central office has just been established in the new American Optometric Association building in St. Louis, Missouri. Mary Richter, the new AOSA Executive Secretary, will handle most of the Association's communications along with the day-to-day administration of the many projects initiated by volunteer members of the Association.

Presently 85 percent of all students in optometric studies are members of AOSA, which totals approximately 4,000. This number constitutes a large percentage of the optometric community. With this representation of 15 to 20 percent of optometry and with the forecast that within the next ten years one-half of the practicing O.D.'s will no

longer be in practice, it is obvious that AOSA is a major factor in the future and present structure of optometry.

The American Optometric Association (AOA) has recognized the important contributions that AOSA can and is making to optometry. Each year one of the AOA trustees is appointed by the president of AOA to serve as AOSA liaison. Presently, there are six AOSA liaisons directly to AOA committees covering all five divisions of AOA. These liaisons serve well to let the concerns of the students be heard at the level where decisions are being made.

One of the most fruitful liaisonships that an AOSA student volunteer holds is that to the National Board of Examiners in Optometry (NBEO). Over the years, NBEO has been very receptive to the student input supplied by the AOSA liaison. Through this person, student concerns about the composition of National Board Examinations, subjects tested, exam dates, confidentiality of scores, and use of calculators have been discussed. This input has resulted in some major changes in the National Board Examination within a very short period of time. This year, to enhance AOSA's relationship with NBEO and to establish a direct conduit of information between AOSA membership and the NBEO, a regular feature is being initiated for the American Optometric Student Review (AOSR) entitled, "Ques-

tion the National Boards." This forum will allow student-generated questions from each and every AOSA member to be discussed by a qualified official of the NBEO. It is hoped that through increased communication, many of the differences and goals of the National Board and students can be understood more clearly.

Over the past few years, input into the Association of Schools and Colleges of Optometry (ASCO) has been increasing. This association, consisting of the head administrator of each of the optometric institutions, provides a forum that the students are learning has tremendous significance in the determination of directions that optometric education shall take in the years to come. ASCO, as of this year, will provide regular input into the AOSR from its Council on Student Affairs and National Office in Washington, D.C. In turn, AOSA, through its president, will provide ASCO with student concerns that may help to guide the important decisions concerning optometric education.

Other liaisonships exist to many of the allied associations in optometry. Some of these include: Armed Forces Optometric Society (AFOS), International Association of Boards of Examiners in Optometry (IAB), National Optometric Association (NOA), American Optometric Foundation (AOF), and

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College of Optometrists in Vision Development (COVD), among others. Each of these associations is served by a volunteer of AOSA who acts as a pipeline for communications between the two associations. From this list, one can see that AOSA has indeed come into its own as a major factor within optometry.

AOSA is governed by a Board of Trustees that determines policy and establishes programs and an Executive Council that serves the Board of Trustees. Each school elects a trustee who then has one vote on all matters coming before the Board of Trustees at each of the two meetings per year. The Executive Council consists of the usual President, Vice-President, Secretary and Treasurer. Representation in these positions is elected by the Board of Trustees at the National Congress held in January of each year at one of the optometric institutions. All of these positions are held by volunteers who have taken on responsibilities above and beyond their academic work. It is a tribute to these individuals who have taken an active role in the determination of the course optometry shall take in the years to come while attending rigorous classes and clinical assignments at their respective optometric institutions.

AOSA is an association of students and, as such, has many programs that serve students. The student newspaper, AOSR, is published six times a year. With the work of many dedicated students, the quality of this year's publication is expected to surpass all that came before and all that anyone ever expected. Important contacts have been made with allied organizations and associations to become regular contributors to the AOSR for the first time. It is hoped that through these initial contacts, further associations will be strengthened leading to better content in the *Review* that concerns all optometry.

In conjunction with the AOA Committee on Assistance to Graduates and Undergraduates, AOSA has begun a very important service—the placement service. The AOSA Committee on Assistance to Graduates and Undergraduates attempts to match O.D.'s who are looking for specific attributes to new graduates who are looking for specific situations in different areas of the country. This is a new service and one that I believe will become the major placement service in optometry as more O.D.'s learn of it and the pool of both O.D.'s and graduates becomes larger.

Within AOSA, many committees have been established to carry out spe-

cific tasks. These committees include: Interprofessional, Paraoptometric, Education, Student Services, Minority Affairs, Assistance to Graduates and Undergraduates, Legislative, Public Health, Intraprofessional and Women in Optometry. These committees are one of the main reasons AOSA exists along with policy making and endorsement of positions on issues in optometry and health care. Many of the programs undertaken by AOSA are ones that if undertaken by each local chapter, would cost much more and not be as comprehensive. This is one of the main reasons for any national structure to exist—economy of work, time and money.

In addition to all that is done by the committees, they are charged with the production of tangible benefits and membership services. This year's priority programs include: a legislative guidebook, NBEO guidebook, practice management text, placement guide, residency guide, anatomy review, and a literature package. With a central office established and increased membership dues this year, it is hoped to deliver on all programs budgeted for. These programs will provide important information to each member on anatomy terminology, opportunities available for recent graduates, answers to student questions about the National Board Examinations, how to contact a congressman and how the legislative process works, as well as information on services and equipment from each of the optical companies.

For many years AOSA has been concerned simply with running itself as all new associations must. With the creation of a central office and the hiring of an Executive Secretary, however, we will now be able to begin deliberations that will determine the positions AOSA will take on major issues facing optometry. These areas include the wave of commercialism, consumer education, continuing education and continuing competency as just a few examples. AOSA will attempt to grapple with these issues and work toward their resolution in the coming years.

At the recent National Congress held in July, 1978, the AOSA Board of Trustees, upon conducting surveys at the schools among students and faculty, came out unanimously in support of the AOA National Consumer Communications Program (NCCP). This action helped establish AOSA favorably in the eyes of all who participated in the NCCP debate.

Also at this meeting the issue of residents and residencies was addressed. Approached by a group of residents and former residents concerned with the quality of education and the overall quality of residencies across the country, the AOSA Board of Trustees unanimously endorsed the creation of a Residents Committee as part of AOSA. This committee will be composed of residents and former residents who are special members of AOSA and will communicate through the AOSR and the Residency Guidebook information about each of the residencies now available to O.D.'s.

Not all the work that AOSA does is limited to the practice of optometry or the delivery of vision care. AOSA is a member of the National Student Health Alliance which represents students in all fields of health care including medicine, dentistry, podiatry, pharmacy, osteopathic medicine and allied health. Thus, directly at the student level, possibly where it can best be accomplished, the students of optometry are working hard to raise the level of awareness concerning optometry among all the health professions. This is a task that must be done for optometry to be a respected profession.

The AOSA national convention is the highlight of the year for our members. Each year one of the optometry schools' local AOSA chapters hosts the convention. A multitude of educational lectures, panel discussions on important issues, and Board of Trustees meeting take place. A special treat is the exhibits which have grown over the last few years from only five exhibitors in Boston to an expected thirty-five in Columbus, Ohio, January 11-14, 1979.

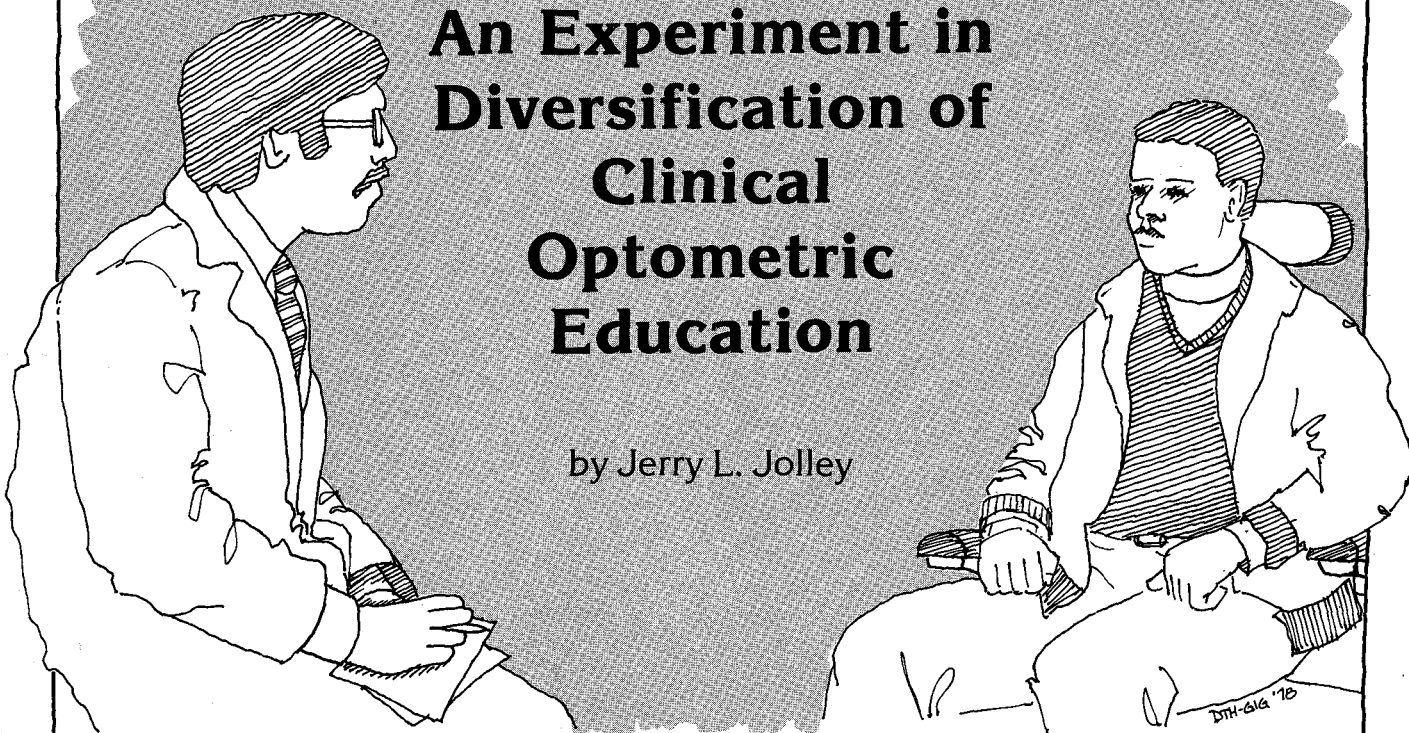
The convention always closes with the traditional banquet and awards dinner. Many successful conferences have resulted from top speakers in the profession having waived their honorariums. This has allowed the students to hear from the leaders of the profession and to use the majority of the money from the Congress budget to get students to fill the lecture hall and exhibits.

All in all, AOSA represents communication with the profession, students, other health care professions and the public. AOSA is doing a tremendous job representing its membership through communication. I am very proud to be involved in one of the leading associations within the profession—an association that stands for, "Health Care to the People, Service to the Students." □

Outreach Clinical Programs:

An Experiment in Diversification of Clinical Optometric Education

by Jerry L. Jolley



In 1973 the Southern California College of Optometry (SCCO) central campus facilities were moved to Fullerton, California, from a previous location in central-city Los Angeles. The move to spacious new facilities in Fullerton entailed development of a new clinic, the Optometric Center of Fullerton, as well as relocation and improvement of the Optometric Center of Los Angeles which continued to serve the College's central-city patients. The Department of Health, Education, and Welfare assisted SCCO in construction of the new Fullerton campus and, in turn, required the College to expand its student enrollment. In 1974 SCCO's graduating class was 61 students. With the realization that by 1978 the graduating class would be more than one hundred students, the office of Outreach Clinical Programs was established in September, 1975. A Director was appointed with specific responsibility to develop affiliations with external agencies which would provide additional clinical educational opportunities for the College's expanding

number of clinicians, as well as to allow more patients to be seen by each clinician.

In addition, the College desired, through development of outreach affiliations, to diversify the types of clinical experiences of its clinicians. Six goals established in 1975 have guided the development of outreach clinical programs during the past three years (See Table 1). Clearly, the College has attempted to utilize its institutional status to expand optometry's involvement with other health professions and to secure the profession's role as a primary care provider in several organized health care delivery systems.

Growth of Outreach Clinical Programs

By June 30, 1976, the end of the first year of development of outreach clinical programs, SCCO had five operational programs which accounted for 10,618 patient service visits, 70 percent of which were school vision screenings. Two years later, during the fiscal year ending June 30, 1978, student clinicians in 23 outreach clinical programs had a total of 35,418 patient service visits, of which less than 26 percent were school screenings. The number of

outreach primary eye examinations (initial visits excluding screenings) grew tenfold during the same period from 1,324 in FY 1975-76 to 13,529 in FY 1977-78 (See Table 2).

In December, 1975, the SCCO Clinic Council developed institutional goals for the minimum number of primary care patients required to meet the College's growing need for clinical education. As seen in Table 3, these original projections found the College in need of increasing its primary care patients from 11,218 in FY 1975-76 to a total of 20,428 in FY 1977-78. The College has far exceeded these goals. As an example, the 1978 graduates of SCCO cumulatively completed more than 28,119 primary eye examinations, an average of 273 per student. An average of 131 or 48 percent of these primary eye examinations were completed in outreach clinical programs, and the mean number of patient service visits made to each student during his/her outreach rotation was 343.9. This is a significant increase over the 168.5 patient visits per student during the 1976-76 outreach year (See Table 4).

As compared with the College's 1975 institutional objective (Table 3), the outreach clinical programs in FY 1977-78 provided 66 percent of the institution's

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patient needs even though this program was originally projected to supply only 30 percent of the College's total patient needs (Table 5). The FY 1977-78 total of 13,529 primary eye examinations completed by clinicians in outreach programs exceeded the original Clinic Council goal of 13,250 established for the entire fourth-year program. During the fourth year, clinicians also see numerous patients at the Optometric Centers of Fullerton and Los Angeles.

Scheduling of Outreach Clinicians

It is impossible from the standpoint of patient care or educational continuity to have each student participate in each of the 23 outreach programs. Thus, in conjunction with student class officers, a lottery system has been developed to allow students to exercise their preferences in selection of assignments.

In developing the outreach schedule for each trimester, an effort is made to keep the clinician/faculty ratios small in order to optimize the educational benefits of each program. A ratio of four clinicians per faculty member is achieved in most SCCO outreach programs. Under no circumstances is a six-to-one ratio exceeded; and in many outreach programs utilizing adjunct faculty, a one-to-one clinician/faculty ratio is achieved.

Early in the development of outreach programs, it became apparent that the academic quarter system was inappropriate in that it created problems in continuity of patient care and clinical education. The quarter system resulted in student and faculty schedules changing every ten to eleven weeks. Clinicians were often changing assignment just as they had begun to understand the

Table 1
GOALS OF OUTREACH CLINICAL PROGRAMS

1. Increase the number of primary patient care experiences for fourth-year clinicians
2. Diversify composition of patient groups being served:
 - Socioeconomic
 - Racial
 - Cultural
 - All Ages
3. Provide optometric education in a variety of delivery systems
4. Develop interdisciplinary educational experiences:
 - Primary providers
 - Ophthalmology
 - Allied Health and Social Service Personnel
 - Ancillary Optometry Personnel
5. Provide optometric care to underserved communities
6. Secure optometry's place as a primary provider in organized health care delivery systems

Table 2
GROWTH OF SCCO OUTREACH CLINICAL PROGRAMS

	1975-76	1976-77	1977-78
Number of outreach programs operational	5	17	23
Number of outreach patient visits including screenings	10,618	24,987	35,418
Number of outreach primary eye examinations	1,324	5,581	13,529

Note: Statistics represent encounters in which clinicians provide service to patients. Data does not include observation by students of cases presented solely for educational purposes.

Table 3
CLINICAL NEEDS FOR PRIMARY PATIENTS
(SCCO Clinic Council - December, 1975)

Class	1975-76			1976-77			1977-78		
	N	K	NxK	N	K	NxK	N	K	NxK
4th year	66	100	6,600	86	110	9,460	106	125	13,250
3rd year	86	50	4,300	106	60	6,360	106	65	6,890
2nd year	106	3	318	106	3	318	96	3	228
Total Primary Patients Needed			11,218			16,138			20,428

N = number of student clinicians

K = number of required primary patient examinations

operational details of the specific clinic to which they were assigned. To structure a more optimum length of time for clinicians in outreach programs, the fourth-year schedule in the 1976-77 academic year was organized on a trimester basis with one-third of the fourth-year class being assigned to outreach programs each sixteen-week trimester. During the other two trimesters, clinicians are assigned vacation and research periods and clinical rotations in the Optometric Centers of Fullerton and Los Angeles.

The previous requirement that fourth-year students return to the SCCO campus during certain periods each week was another impediment in the placement of clinicians at distant outreach clinics. This hurdle was overcome by developing a block lecture schedule which consolidated lectures into five or seven consecutive days at the end of each seven-week clinical rotation. Few, if any, problems have been noted since the 1976 initiation of this type of scheduling which allows students to spend several weeks in off-campus outreach programs, uninterrupted by lectures.

Outreach Clinical Locations

The majority of the 23 outreach programs are located in the southern Cali-

fornia area within driving distance of the Fullerton campus. However, throughout the three-year development of the program, students have been placed in outreach rotations in Nevada, Arizona, New Mexico, Washington, Washington, D.C., and northern as well as southern California (See Table 6).

In addition, student clinicians also have an opportunity, as part of their outreach schedules, to visit various private practitioners' offices. This externship program is operated through the College's Alumni Affairs Office and provides an opportunity for fourth-year students to gain firsthand exposure to practice management techniques in several offices.

Overview of Outreach Programs

The following overview of the SCCO Outreach Clinical Program provides instructive information for development of similar programs by other schools and colleges of optometry.

Baldwin Park Health Center Optometry Service

SCCO was contacted by the San Gabriel Valley Health Services Region

(SGVHSR) of the Los Angeles County Department of Health Services in 1975 because visual care had been identified as a primary unmet area of health care in the region. Working closely with the Department of Health Services, the Regional Advisory Council, and the Baldwin Park Health Council, SCCO submitted a Special Project Grant application to HEW for health manpower training. In July, 1975, a three-year award was made in the amount of \$269,830 for faculty, support personnel, equipment, supplies, and travel costs incurred in the development of a multidisciplinary optometric clinical training program in the Baldwin Park Health Center. SGVHSR contributed to this program by providing clerical supplies, office furniture, and support personnel. After several months' operation of the clinic, the Los Angeles County Board of Supervisors approved use of General Revenue Sharing funds to help compensate the College for expenses incurred in staffing and leasing space for the clinic.

With one year of experience at the Baldwin Park Optometry Service (BPOS) the need for various specialized services became evident; and in 1976 HEW approved a supplementary health manpower training grant in the amount of \$29,188 to expand the services, faculty, and equipment available at the Baldwin Park Health Center. In development of this clinical program by the College, careful attempts were made to involve local optometric society and auxiliary members in program planning. Reflective of the good will established is the fact that the society and auxiliary subsequently contributed time and money to the BPOS.

As of June 30, 1978, 3,505 individual patients had received optometric services at the Clinic and 7,184 patient service visits had been completed. In addition to primary eye care, BPOS offers a full spectrum of optometric care including vision therapy, contact lenses, low vision services, fundus and anterior segment photography, ocular prosthesis services, and electrodiagnostic services (VER/ERG). Screening programs for other health centers within SGVHSR are conducted by the Baldwin Park optometric faculty and clinicians. In addition to making optometric services available to this underserved community, the College has made ophthalmological services available through the placement of one of the College's staff ophthalmologists at BPOS on a weekly consulting basis.

Table 4

CLINICAL ACTIVITIES IN OUTREACH CLINICAL PROGRAMS

	1975-76	1976-77	1977-78
Number of students involved in outreach	63	84	103
Mean outreach patient visits per student	168.5	297.5	343.9
Mean outreach primary eye exams per student	21.0	111.8	131.3

Table 5

OUTREACH CONTRIBUTIONS TO SCCO'S CLINICAL REQUIREMENTS

Clinic Council Projected Need for Primary Patients (12 / 75)	1975-76	1976-77	1977-78
(A) 4th year minimum requirement	6,660	9,460	13,250
Percent met by outreach	20%	59%	102%
(B) Total College Patients Needed	11,218	16,138	20,428
Percent met by outreach	12%	35%	66%

Sherman Indian Health Center Optometry Service

Sherman Indian Health Center (SIHC) is located in Riverside, California, approximately 35 miles from SCCO's Fullerton campus. It is a residential high school with an enrollment of approximately 750 American Indians from the western and midwestern states. In 1974 SCCO signed a contract with the U.S. Public Health Service to provide primary eye care including screening, examination, and follow-up services at Sherman Indian Health Center. In 1975 SCCO was also awarded a three-year, \$60,136 Health Manpower Education Initiative Award for expansion of the SIHC optometric training and service program. During the grant period, College and USPHS officials worked closely together to design the optometric space for a new health center which has recently been completed.

Since the program's inception, 3,843 patient service visits have been completed by SCCO's faculty-student teams which provide primary eye care, contact lenses, vision therapy, and ophthalmic dispensing services.

A unique component of the Sherman Indian Health Center program has been the opportunity for senior optometric clinicians to organize and present vision health education programs to the school's students and faculty members. Many clinicians have requested assignment to both the Baldwin Park Clinic, which primarily serves a Mexican-American population, and the Sherman Indian Health Center in order to be exposed to patients of widely different cultural backgrounds and diverse visual needs.

Screening Programs

SCCO operates two types of outreach screening programs. The largest is

the *School Screening Program*, originally started by the College in 1949, which utilizes the Modified Clinical Technique (MCT) to survey the visual needs of more than 9,000 youngsters in 45-50 schools each year. These schools are primarily located in low socioeconomic areas. Fourteen percent of the youngsters failed the MCT screening in FY 1977-78, with an additional six percent being classified as borderline and, therefore, in need of further monitoring of visual performance. SCCO provides school screenings on a per capita contractual basis with large districts as well as individual schools throughout the southern California area.

The College also operates a *Special Screening Program* to accommodate special requests by various groups. In the past two years, visual and ocular health screenings have been conducted at the health evaluation center of the

Table 6
1977-78 OUTREACH PATIENT SERVICE VISITS BY CLINIC

Outreach Programs	Months Operational	Student/Patient Service Encounters
Baldwin Park Health Center, Optometry Service	12	2,561
Sherman Indian Health Center, Optometry Service	8	804
School Screening Program	9	9,046
Special Screening Program	9	1,053
Tuba City IHS Hospital, Arizona	9	1,753
Crownpoint Indian Health Center, New Mexico	2	77
Phoenix Indian Medical Center, Arizona	3	205
Santa Fe Indian Medical Center, New Mexico	6	471
Gallup Indian Medical Center, New Mexico	2	105
Whiteriver/San Carlos Indian Health Centers, Arizona	5	561
March Air Force Regional Hospital, Riverside	12	612
Norton Air Force Base Clinic, San Bernardino	8	307
Naval Regional Medical Center, San Diego	12	1,452
Naval Regional Medical Center, Long Beach	10	446
Marine Corps Air Station, El Toro	12	192
Silas B. Hays Army Medical Center, Fort Ord	7	546
Madigan Army Medical Center, Tacoma, Washington	5	381
Pacific State Hospital, Pomona	12	1,225
Children's Hospital, San Diego	12	207
Las Vegas Low Vision Clinic, Nevada	11	244
Convalescent Hospital Program, Fullerton	1/2	13
Veterans Administration Outpatient Clinic, Los Angeles	12	5,036
Terminal Island Occupational Health Center	10	8,121
Total		35,418

California Dental Association's annual congress, at health centers of the Los Angeles County Department of Health Services, and at the Sherman Indian Health Center. SCCO has also joined the University of Southern California School of Dentistry Interdisciplinary Health Team (involving optometry, pharmacy, dentistry, dental hygiene, and health education students) to screen dental outpatients.

USPHS Indian Hospital Rotations

In 1976 the College began developing affiliation agreements with various Indian Health Service hospitals throughout the southwestern United States. Senior optometric clinicians travel to these various locations for seven-week clinical rotations under the supervision of PHS Commissioned Corps Optometrists who serve as SCCO adjunct faculty members. During the past two years, SCCO clinicians completed 4,837 patient service visits in eight Indian Health Service facilities.

Military Outreach Affiliations

Through memoranda of understanding between SCCO and the United States Air Force, senior optometric clinicians may elect rotations at the March Air Force Regional Hospital in Riverside, California, or the Norton Air Force Base Clinic in San Bernardino, California. Clinicians are supervised by USAF optometry officers and provide services for active duty personnel, military dependents, and armed services retirees.

Affiliation agreements with the Army have been signed for the Silas B. Hays Army Medical Center in Ford Ord, California, and the Madigan Army Medical

Center in Tacoma, Washington. Students selecting rotations in remote locations are responsible for their own living and travel expenses in most instances. Students with military scholarships may opt to complete their outreach rotations at military facilities, thereby qualifying to receive compensation from the Department of Defense. Under military scholarship programs, SCCO students have participated at the Silas B. Hays Army Medical Center and the Walter Reed Army Medical Center in Washington, D.C.

SCCO outreach affiliations have been extended to three programs operated by the U.S. Navy including the Naval Regional Medical Center, San Diego; the Naval Regional Medical Center, Long Beach; and the Marine Corps Air Station, El Toro. Under supervision of optometry naval officers, students provide services and participate in educational activities under signed memoranda of understanding. Such affiliations give students an opportunity to pursue special areas of interest. For example, students at the Naval Regional Medical Center, Long Beach, have an opportunity to work with optometric and ophthalmological officers in aphakic contact lens fitting.

Pacific State Hospital for Mentally Retarded

Certain highly specialized outreach programs provide clinicians with unique educational opportunities. Pacific State Hospital, operated under the California State Department of Mental Hygiene, has developed a flexible contact lens research program with the College. The objective of the program, funded by a grant from Bausch & Lomb, is to determine whether flexible contact lenses offer a useful alternative to spectacle

lenses for institutionalized, retarded individuals. Such populations have a high prevalence of large refractive errors and suffer a chronic problem of loss and breakage of spectacle lenses. The Pacific State Hospital program has provided students with the unique opportunity of working with retarded persons in the very demanding area of contact lens fitting.

Convalescent Hospital Program

With the assistance of the Fullerton Jaycees Service Club, SCCO in 1975 developed programs which provided optometric services in two local convalescent hospitals. The program operated periodically during a two-year period and was funded on a fee-for-service basis. Written agreements for delivery of services were developed between SCCO and these convalescent hospitals which previously had experienced considerable difficulty in obtaining visual care for their residents.

Las Vegas Low Vision Clinic

In February, 1976, SCCO began its first out-of-state outreach program. Under a grant from the Bureau of Services to the Blind, Nevada Department of Rehabilitation, SCCO sent a team consisting of one faculty member and two student clinicians to the Las Vegas Low Vision Clinic three days each month. Equipment, supplies, space, and ophthalmic materials are provided by the Nevada Department of Rehabilitation. After one year of operation in a single examination room, the Department equipped a second room and made additional space available to allow SCCO to send three clinicians with one faculty supervisor each month. The Las Vegas Low Vision program provides

The Sherman Indian Health Center in Riverside, California.



Screening for the California Dental Association's annual congress.



senior clinicians an opportunity to receive a concentrated educational experience in the specialty area of low vision.

Children's Hospital, San Diego

Another highly specialized outreach rotation is the San Diego Children's Hospital program. Working in the Speech, Hearing, and Neurosensory Center with the hospital's optometrist, senior clinicians work exclusively in the area of electrodiagnosis. Students assigned to the Naval Regional Medical Center, San Diego, have joint assignments at Children's Hospital, San Diego. In addition, other clinicians with special interests in electrodiagnostic testing can select this rotation on a one-to-two-day per week basis.

Terminal Island Occupational Health Center

Beginning in September, 1977, SCCO assigned faculty and students to provide daily primary eye care in the Terminal Island Occupational Health Center. Operating under a memorandum of understanding and a contract with the U.S. Navy, 8,280 patient service visits have been conducted by SCCO outreach clinicians. Working with the Regional Occupational Optometrist, the SCCO student-faculty team provides on-site occupational vision screenings throughout the shipyard's many work areas. In addition, the Navy has equipped five optometric examination rooms, a dispensing area, and an entrance testing area for delivery of primary care services and contact lens service for active duty military personnel and civilian shipyard workers.

Veterans Administration Optometry Service

SCCO currently has one very active Veterans Administration education program with two others scheduled to begin in the fall of 1978. Under a memorandum of understanding between SCCO and the Veterans Administration Outpatient Clinic (VAOC) located in central Los Angeles, the College began providing primary eye care services on a full-time basis in September, 1976. Initially, funding for SCCO faculty in this program came via contract for professional services with VAOC. In mid 1976, the VA Central Office of Academic Affairs provided \$45,000 to equip a new optometry service program. Within a year, SCCO was awarded a seven-year manpower training grant under Public Law 92-541,

the Veterans Administration Medical School Assistance and Health Manpower Training Grant. This manpower development grant, in the amount of \$936,506, funded the education of SCCO students including costs of personnel, equipment, travel, supplies indirect costs and space as applicable for the education of students.¹ Whereas the initial space available to the optometry program was approximately 610 square feet, under this grant it has recently been expanded to more than 2,200 square feet. Eight primary eye examination rooms and a preliminary testing area are fully equipped to perform comprehensive optometric services for eligible veterans. In addition to primary care and ophthalmic dispensing services, the grant allows for education of students in the areas of contact lenses, low vision, ocular photography, and specialized testing services such as electroretinography and visual evoked response.

The Veterans Administration Outpatient Clinic offers SCCO clinicians a unique opportunity to work in a multidisciplinary setting serving an elderly population with a high prevalence of visual and ocular as well as systemic health disorders. During the first 22 months of operation of the College's program at VAOC, more than 8,130 patient service visits were completed. In addition to exposing student clinicians to a large number of patients in need of care, the VAOC outreach rotation allows participation in clinical rounds, seminars, and lectures with VAOC professional staff members and trainees from other disciplines stationed at VAOC.

Funding of Outreach Clinical Programs

Development of off-campus clinical training programs has generated both direct and indirect sources of funding for educational activities.

Indirect funding has included many hundreds of hours contributed by Adjunct Clinical Faculty members to education of senior clinicians. The time and energy expended by these individuals, as well as the provision of facilities and equipment by sponsoring agencies, are enormously appreciated by the College.

Direct funding of outreach clinical programs between 1975 and 1978 has included \$782,949 in grants, fees, donations, and contracts (See Table 7). During this period, nine separate grants and eight specific contracts helped defray program operating expenses. Had

Table 7
OUTREACH CLINICAL PROGRAM FUNDING

1975-76	\$162,571
1976-77	252,096
1977-78	368,282
Total	\$782,949

the College not actively sought external clinical programs, the funds necessary from the College's general operating budget for the education of fourth-year students would have been substantially greater.

Expansion Brings Unique Opportunities

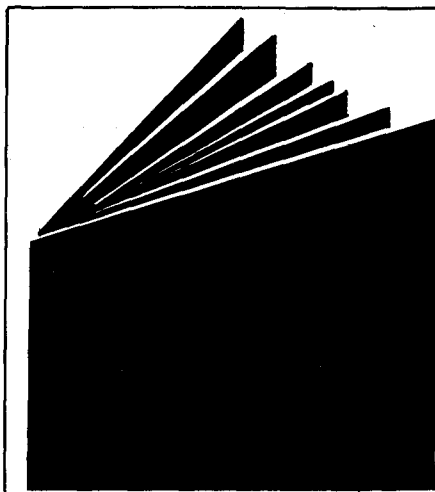
Efforts by the Southern California College of Optometry between 1975 and 1978 to expand outreach clinical programs have resulted in many unique educational opportunities for senior clinicians. Through outreach programs, clinicians have had the opportunity to participate in various health care delivery systems, many of which provide interdisciplinary educational experiences. Student evaluations of their outreach experiences repeatedly mention the educational value of being exposed to patient populations of diverse socioeconomic, cultural, and racial backgrounds.

The College's expansionary efforts have not only provided students with educationally rewarding experiences, but have also created opportunities for the profession to expand into delivery systems heretofore inaccessible to the profession of optometry. It has been SCCO's experience that developing external affiliations has become easier as the institution's reputation for providing high-quality, cost-effective services has become known. Each school and college of optometry should consider the potential impact it can have in using its institutional status as a springboard for the profession into various organized health care delivery systems.

Most importantly, the impressive growth of SCCO's Outreach Clinical Program has been due to the untiring dedication by faculty, adjunct faculty, staff, and student clinicians to the enhancement of optometric education. □

References

- ¹Medical Education Programs Sponsored by Government Agencies. *J. Am. Med. Assoc.* 283(26):2815-2824, 1977.



Teaching Aids and Informational Material

A Definitive Study of Your Future in New Optometric Careers

By James R. Gregg, O.D.

Richards Rosen Press

New York, New York — 1978

150 pp., 29 illustrations, \$4.98

Reviewed by

David W. Davidson, O.D., M.S.

This valuable new resource is one volume in a series covering ninety-six career areas. The series is very comprehensive including careers as diverse as air conditioning, fashion design, and restaurant management. Twelve volumes in the series pertain to health careers. They are: dental assisting, dental hygiene, nutrition, hospital administration, medical technology, nursing, occupational therapy, optometry, pharmacy, medicine, veterinary medicine and X-ray technology.

In reading through this book, I found it to be well written and very informative. It is written in a style that is appropriate for the student in college or for a sophisticated high school student. There is a generous assortment of illustrations that have been carefully selected and which serve to complement the written material. The text paints a very contemporary picture of the practicing optometrist. Many very timely subjects are discussed; such as national health insurance and its potential effect on the optometric profession; the use of drugs in the practice of optometry, price advertising, and professional service review organizations. I found the professional role of the optometrist, as portrayed in this text, to be realistic and the future professional role of the optometrist, appropriately optimistic.

There is an entire chapter devoted to optometric career opportunities for women. This chapter should prove to be very useful in reaching the female

segment of the potential applicant pool. In contrast, the text is somewhat lacking in information dealing with career opportunities for other traditionally underrepresented population groups. I was disappointed that a similar chapter was not included that dealt with the unique concerns of the ethnic minority optometrist. Furthermore, I would like to have seen included a more detailed discussion of the differences one can expect between traditional suburban optometric practice versus rural practice or urban, inner-city practice.

I would anticipate that this book will be commonly found on the bookshelves in vocational guidance counselors' offices in high schools and preprofessional advisors' offices in colleges and universities. It should also be available through most community libraries. I feel that it would also be desirable to make this recruitment resource available through the offices of the American Optometric Association. I would hope that practicing optometrists will obtain a copy of the book to be made available to their young health career-oriented patients.

Technically the book is superb, and Richards Rosen Press should be applauded for the quality of production and for the absence of typographical errors. The only changes that I would recommend are:

1. The old address of the American Optometric Association is referred to throughout the text and should be updated.

2. The instrument described in the picture caption on page 21 is more appropriately referred to as an "electron microscope" rather than an "electronic microscope."

3. The National Board of Examiners in Optometry has been listed on page 147 under the Association of Schools and Colleges of Optometry and should receive a separate listing.

In summary, *New Optometric Careers* represents a valuable recruitment tool that should be made available to all high school and college students considering careers in health care.

Clinical Optics

By Frank Kozol, O.D.

Dabor Science Publications

Oceanside, New York — 1977

229 pp., \$14.95

Reviewed by

Bradford W. Wild, O.D., Ph.D.

This new volume is written as an introduction to the topics of ophthalmic lenses and ophthalmic dispensing. It is specifically addressed to the needs of optometric technicians. The information is presented simply and, insofar as it is possible, nontechnically. Because of this method of presentation, most optometrists will find the information of limited value for themselves but of considerable value for their technicians and other office personnel.

The major deficiency of this text is the lack of up-to-date information on products and processes. A few examples are sufficient to emphasize this point. The chemical tempering of lenses to make them impact resistant is barely noted without explanation or elaboration; photochromic material is not covered; progressive addition lenses are covered in a total of four sentences; sunglasses and absorptive tints are described collectively in about one-half page; cataract lenses are covered in one paragraph; corrected (curve) lenses are sketchily and somewhat inaccurately covered in less than half a page.

However, the strong point of the book is the section on dispensing. It gives excellent coverage to the ordering, verifying, fitting, adjusting, and repair of eyewear. These topics, particularly the latter two topics, make the entire book worth having. They are sufficiently detailed to permit them to be used as laboratory guides in schools of optometry or in optometric technical programs or as how-to-do-it guides in the office or dispensary. The diagram and sketches are generally very clear and provide helpful extensions of the text.

Overall, it is an honest and conscientious effort by an optometric educator and practitioner who has many years of experience in the areas covered in this volume. It would be a useful addition to the office library of any optometrist. □

Annual Survey of Optometric Educa- tional Insti- tutions 1977-78

The accompanying tables have been extracted from the 1977-78 Annual Survey of Optometric Educational Institutions compiled by the Council on Optometric Education (COE) of the American Optometric Association. They tabulate some of the characteristics of student enrollment and financial aid for the academic year 1977-78. An overall summary of the data shows the following.

Student Enrollment

Total student enrollment in the professional degree program for the year 1977-78 was 4,209. This represented an increase of 176 students or 4% over the previous year's figure of 1,106. Of these first-year enrollees, 70% had four or more years of college; 18% had three years and 11% had two years. In 1976-77, 67% of first-year students had four or more years of college. First-year students with baccalaureate or higher degrees comprised 64% of the 1977-78 entering class. This represented an increase of 7% over the 61% recorded the previous year.

The percentage of women entering optometry school has been increasing steadily over the last few years. Women comprised 19% of the 1977-78 entering class. Of all students, women represented 15% or 647 of the total enroll-

1977-78 Annual Survey of Optometric Educational Institutions

STUDENTS

Number of First Year Students Enrolled with:

	2 + Yrs.	3 + Yrs.	4 + Yrs.	B.A., B.S.	M.A., M.S.	Ph.D.	TOTAL
ICO	15	18	15	98	4	0	150
IU	25	14	3	27	0	0	69
NECO	5	6	1	70	6	9	97
PCO	0	20	0	133	8	1	162
PU	17	22	14	31	1	0	85
SCCO	8	15	10	62	0	1	96
SCO	13	32	13	90	2	0	150
SUNY	0	7	0	57	2	0	66
TOSU	27	12	0	18	3	0	60
UAB	0	5	4	31	0	0	40
UCB	2	26	2	33	2	0	65
UH	18	27	11	42	2	0	100
U.S. TOTALS	130	204	73	692	30	11	1140

1977-78 Annual Survey of Optometric Educational Institutions

STUDENT ENROLLMENTS

Minority Group Students Enrolled

	Black American	Spanish Surname	Native Amer. Ind.	Asian American	Foreign Nationals	TOTAL	% of Student body
ICO	8	2	0	16	3	29	5.0
IU	19	4	1	0	5	29	10.8
NECO	6	2	0	3	7	18	5.1
PCO	8	4	0	2	1	15	2.7
PU	1	2	0	21	3	27	8.2
SCCO	2	10	2	36	3	53	13.3
SCO	5	0	0	4	0	9	1.6
SUNY	5	3	1	7	3	19	10.3
TOSU	2	0	0	2	0	4	1.8
UAB	11	0	0	0	0	11	8.3
UCB	9	15	0	56	0	80	31.0
UH	3	13	3	6	24	49	14.1
U.S. TOTALS	79	55	7	153	49	343	8.1

ment. This was an increase of 19% over the previous year's total of 542 female students.

Minority student enrollment, however, has been declining on an overall basis. Whereas there were 346 minority students enrolled in 1975-76, representing 8.9% of the total student body; there were 343 enrolled in 1977-78 which represented only 8.1% of the student body. Although the 1977-78 figures increased slightly (4%) over the previous year's enrollment of 328, the overall percentage of minority students has not increased at a rate comparable with that experienced prior to and including 1975-76.

Of the total minority students enrolled in 1977-78, 44% were Asian American, 23% Black American, 16% Spanish surname, 14% foreign nationals and 2% native American Indian.

Grade Point Average

The mean grade point average for entering optometric students in 1977-

78 took another large jump from 3.216 in 1976-77 to 3.278. This 1977-78 average is based on a total of 1,118 first-year students reported in the Fall, 1979 *Information for Applicants to Schools and Colleges of Optometry* published by the American Optometric Association in conjunction with the Association of Schools and Colleges of Optometry.* Information concerning grade point averages was not collected for the COE 1977-78 Annual Survey.

Whereas six of the twelve U.S. schools had a mean grade point average of 3.25 or better in 1976-77, eight of the twelve schools achieved this level in 1977-78.** Also, four schools achieved a mean GPA of 3.40 or better.

Financial Aid

The total amount of aid to students excluding loans*** for the academic year 1977-78 was \$660,317. This represented a decrease of 12% from the previous year's total of \$755,996. The share provided by federal funds of

this aid was \$224,676. This, too, represented a decrease of 39% from the previous year's share of \$368,868. However, the state share of aid excluding loans increased by 9% from \$316,157 in 1976-77 to \$344,791 in 1977-78.

In loans granted to optometric students during 1977-78, the total number of dollars did not increase significantly from that of the previous year (\$3,225,446 in 1976-77 to \$3,285,196 in 1977-78). However, the federal share of this dollar increased significantly by almost \$500,000 or 34% from \$1,446,684 in 1976-77 to \$1,945,653 in 1977-78.

Summary

Overall, these portions of the 1977-78 Annual Survey of Optometric Educational Institutions show an increase in the total student enrollment within the schools and colleges of optometry, with the percentage of female students increasing at a significant rate. Minority student enrollment, however, has declined in growth from that experienced prior to and including 1975-76.

First-year students enrolled in optometry schools bring a better educational background with the majority of them having four or more years of previous college work. Also, mean GPAs of first-year students have increased steadily.

Financial aid to students of optometry has decreased through scholarships, grants, and the like; but has increased through loans. Likewise, the federal share of aid to students through awards and loans has decreased and increased respectively. □

**Information for Applicants to Schools and Colleges of Optometry*, Fall, 1979. American Optometric Association, St. Louis, Missouri. No explanation can be given for the discrepancy in numbers of first-year students reported in this booklet and the COE 1977-78 Annual Survey of Optometric Educational Institutions.

**There are now actually 13 accredited schools and colleges of optometry in the U.S. However, since Ferris State College, College of Optometry, was not polled for previous COE surveys, no comparisons are given here which include Ferris. The college did, however, report a mean GPA of 3.45 for its 1977 entering class.

***Includes scholarships, fellowships, grants in aid, etc.

PROFILE OF 1977 ENTERING CLASS

Grade Point Averages

	High	Low	Mean	Students
ICO	N/A	N/A	3.27	150
IU	N/A	N/A	3.46	69
NECO	3.90	2.50	3.12	89
PCO	3.95	2.50*	3.23	150
PU	4.0	2.2	3.40	85
SCCO	4.0	2.79	3.30	96
SCO	3.90	2.06	2.89	150
SUNY	4.0	2.7	3.40	64
TOSU	3.974	3.126	3.527	60
UAB	3.95	2.72	3.25	40
UCB	4.0	2.54	3.32	65
UH	4.0	2.7	3.18	100
TOTAL			3.27	1118
Ferris**	N/A	N/A	3.45	28
TOTAL ALL SCHOOLS			3.29	1146

Source: *Information for Applicants to Schools and Colleges of Optometry*, Fall, 1979. American Optometric Association, St. Louis, Missouri.

N/A — Not Available

*Students normally may not be considered for admission with less than 2.5 (C+ average).

**Ferris State College, College of Optometry, was not reported in previous COE surveys; therefore, totals are provided separately for purposes of comparison.

1977-78 Annual Survey of Optometric Educational Institutions

STUDENT ENROLLMENTS

Full-Time Students Enrolled in the Professional Degree Program

	First Year		Second Year		Third Year		Fourth Year		Totals		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	TOTAL
ICO	126	24	131	15	128	17	125	18	510	74	584
IU	46	23	49	17	54	13	51	15	200	68	268
NECO	75	22	67	17	57	19	75	18	274	76	350
PCO	126	25	114	26	111	17	122	9	473	77	550
PU	64	21	65	13	81	7	71	7	281	48	329
SCCO	74	22	82	12	97	7	98	6	351	47	398
SCO	150	7	135	12	134	14	122	6	541	39	580
SUNY	40	26	46	11	35	4	17	6	138	47	185
TOSU	51	9	48	7	46	8	49	8	194	32	226
UAB	29	15	34	4	28	4	17	2	108	25	133
UCB	52	13	50	13	53	14	43	20	198	60	258
UH	81	19	90	13	61	11	62	11	294	54	348
U.S. TOTALS	914	226	911	160	885	135	852	126	3562	647	4209

1977-78 Annual Survey of Optometric Educational Institutions

STUDENTS

	FINANCIAL AID Granted through institutions excluding loans							STUDENT LOANS Granted through institutions					
	Percentage of Students Receiving Aid							Percentage of Students Receiving Loans					
	1st Year	2nd Year	3rd Year	4th Year	Total	From Federal	From State	1st Year	2nd Year	3rd Year	4th Year	Total	Federal
ICO	4	2	2	4	\$ 10,250	—	\$ 5,250	29	36	44	41	\$ 221,800	\$ 221,000
IU	1	1	1	1	9,000	\$ 1,000	8,000	35	35	40	35	160,000	160,000
NECO	8	9	9	31	39,200	14,400	11,550	28	27	22	23	194,050	115,910
PCO	4	32	38	33	13,631	731	5,300	32	24	24	20	149,140+	149,140
PU	15	18	19	22	170,000	1,400	150,000	12	15	21	30	136,000	52,000
SCCO	10	10	5	5	35,000	2,000	12,000	55	66	74	70	886,698	219,778
SCO	0	0	0	8	19,719	19,719	—	35	31	46	38	501,417	501,417
SUNY	88	92	95	95	150,000	40,000	100,000	40	50	65	70	450,000	60,000
TOSU	16	13	22	12	16,600	3,500	—	25	22	37	28	103,099	99,400
UAB	0	7	5	5	4,700	1,400	1,000	43	59	50	26	155,930	47,623
UCB	2	2	8	31	15,000	13,500	1,500	10	13	37	44	131,000	116,000
UH	35	35	35	32	177,217	127,026	50,191	20	18	19	33	196,062	163,385
U.S. TOTALS					\$660,317	\$224,676	\$344,791					\$3,285,196+	\$1,945,653

1977-78 Annual Survey of Optometric Educational Institutions

PERMANENT RESIDENCE

	Total Students												U.S. TOTAL
	ICO	IU	NECO	PCO	PU	SCCO	SCO	SUNY	TOSU	UAB	UC	UH	
AL		1					2			86			89
AK		1	1		3	1							6
AZ	1			1	8	17	2				1		30
AR			1				44					14	59
CA	19	2	2	1	34	124	4	3			229		418
CO	2		2		16	16	1						37
CT	4		33	13	1	2	3						56
DE				9		1	2						12
DC				2							1		3
FL	10	5	3	13	7	10	12			1		23	134
GA	3	2	2	1		1	45			7			61
HI	3	2			11	8			1		4		29
ID					10	6			1				17
IL	168	13	2	1	4	5	2	1					196
IN	3	172				4	2						181
IA	45	4			9	11	4						73
KS	4				3	5	17					22	51
KY	2	2		1			24			8		16	53
LA						2	27			3		23	55
ME			25	4	2	1	1				1		34
MD	7	1	6	42		3	21			5		2	87
MA	6	1	130	6	2	1	1	2			1		150
MI	71	3	2	1	7	7	8	1	2		2		104
MN	14	3			17	11	3				1		49
MS		2					31			2		5	40
MO	21	8				7	4						40
MT	5				19	14					1		39
NE	7				10	10	17					11	55
NV					7	11					1		19
NH	1		13	1	2	1	1						19
NJ	6	2	8	78		3	3	7					107
NM	1				5	14	1				2	7	30
NY	54	5	71	81	11	14	6	167			7		416
NC	3	3	1	25		1	54			7	1	5	100
ND	5				8	7			2				22
OH	15	3	3	5	1	4	4		213		1		249
OK		1			5	4	42					23	75
OR			2		45	7							54
PA	16	4	7	222	1	4	3		2		1		260
RI	1	1	16	3	1								22
SC	1	2	1				30			7			41
SD	8	1	1		4	3							17
TN	4					1	71						76
TX	2				1	2						172	177
UT	2				10	11					1		24
VT			4	2									6
VA		6	3	25	2	2	14			7			59
WA	3		1		47	13							64
WV	8	1		10			22		4				45
WI	56	12	2		5	13	1		1		2	1	93
WY		1			8	11	1						21
CZ													
PR		1	1	3		1							6
USP						1							1
ALB					1	1							2
BC					1								1
MAN													
NB													
NF												3	3
NS													
ONT								1					1
PEI													
QUE			3										3
SAS													
C. TER.			1										1
O. COUN.	3	4	3		1	2		3			1	21	38
TOTALS	584	269	350	550	329	398	580	185	226	133	258	348	4210

ASSOCIATION of SCHOOLS and COLLEGES of OPTOMETRY

The Association of Schools and Colleges of Optometry (ASCO) represents the professional programs of optometric education in the United States and Canada. ASCO is a non-profit, tax-exempt professional educational association with national headquarters in Washington, D.C.

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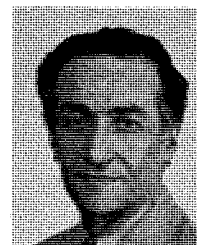
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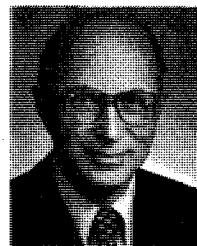
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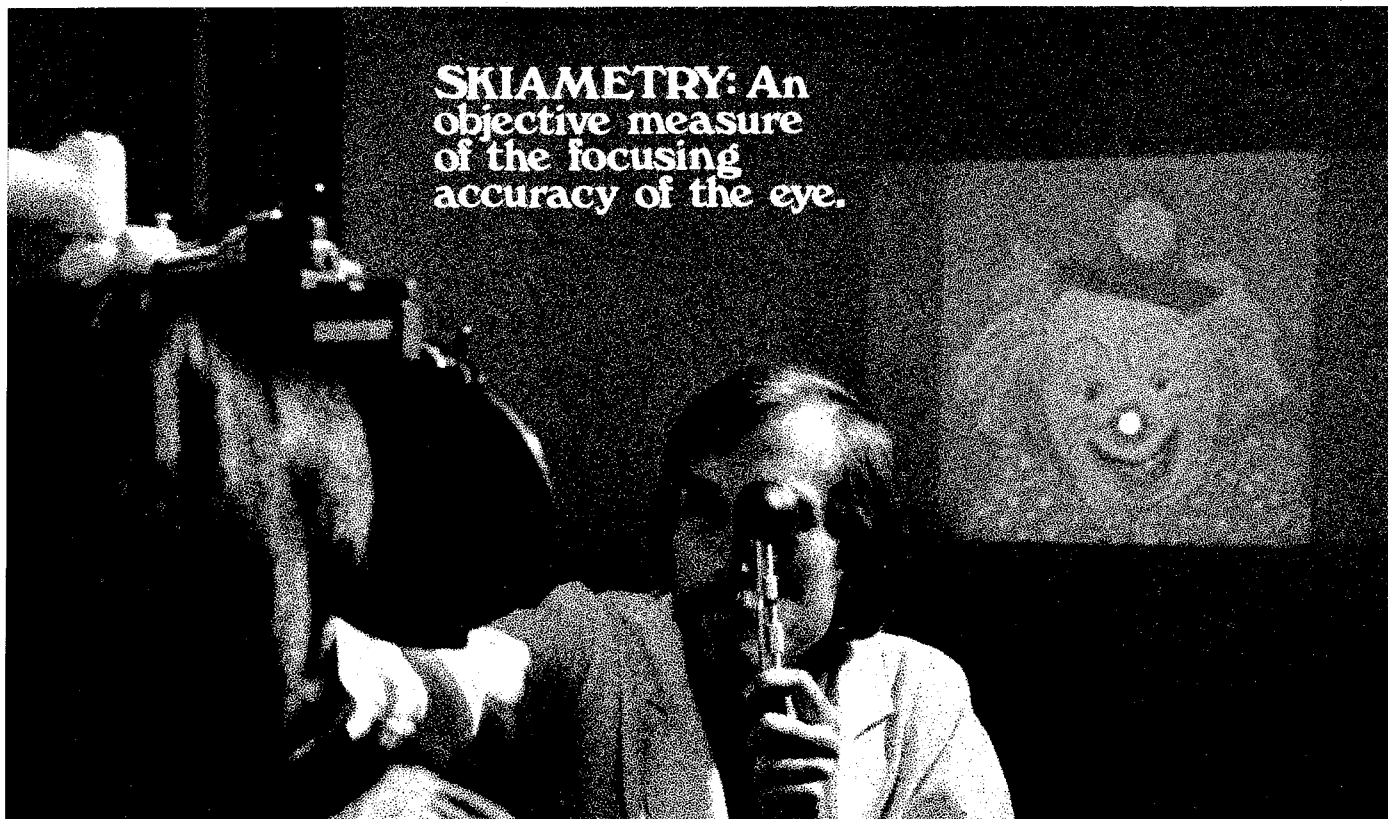
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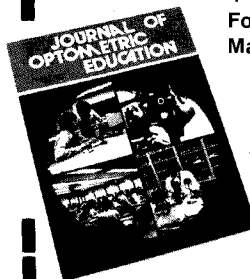
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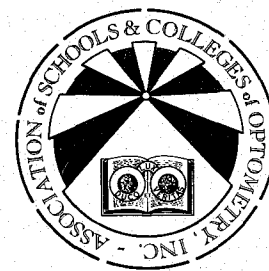
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The Association of Schools and Colleges of Optometry (ASCO) represents the thirteen schools and colleges of optometry in the United States and two programs in Canada. Continuously training nearly 4,000 optometric students, the schools now graduate upward of 1,000 qualified Doctors of Optometry per year.

ASCO incorporated in 1972 and established a National Office in 1974. The National Office provides a wide range of services to the schools, the faculty and the students. In addition, the National Office maintains cognizance over legislation affecting optometric education and provides comment and counsel to both the legislative and executive branches of government.

The Association has established three major councils in the areas of Academic Affairs, Student Affairs and Institutional Affairs. The Council on Academic Affairs has just completed a teaching guide for optometry instructors and is in the process of developing an optometry curriculum model for use in the schools and colleges. The Council has also established guidelines for optometry residency programs and post graduate pharmacology training.

The Council on Student Affairs actively participates in the development and refinement of an information booklet for students interested in attending schools and colleges of optometry. In addition, the Council coordinates the administration of the Optometry College Admission Test (OCAT) which is administered annually to prospective students.

The Council on Institutional Affairs is involved with the development of new school initiatives in accordance with guidelines previously established by the Council. In addition, the Council is developing guidelines for primary care delivery within the clinical programs of the schools and colleges and is developing models for clinical affiliations and utilization of clinical residents.

In 1975, ASCO spearheaded the publication of the Journal of Optometric Education which was established as a forum for the exchange of information concerning optometric education. Now entering its fourth year of publication, the journal is the only publication in the United States entirely devoted to the advancement of optometric education.

The Association's headquarters is located in Suite 210, 1730 M Street, NW, Washington, DC 20036. Students interested in pursuing a course of study leading to the Doctor of Optometry degree are directed to obtain the booklet, "Information for Applicants to the Schools and Colleges of Optometry." Requests for further information should be directed to the admissions officer of the individual school which the student is interested in attending.

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