

The Journal of the Association of Schools and Colleges of Optometry

OPTOMETRIC EDUCATION



Volume 22, Number 4

Summer 1997

**Ethics Education
in Optometry**

Association of Schools and Colleges of Optometry

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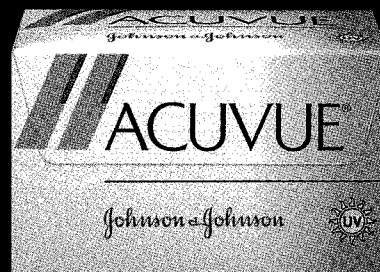
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EDITORIAL

Ethics Education in Optometry — Has Its Time Come?

Neal Nyman, O.D.

Medical education has witnessed the coming of age of instruction in "medical ethics" over the past twenty-five years. This has taken place in the context of a larger curricular effort to develop physicians' values, social perspectives, and interpersonal skills for the practice of medicine. These efforts have been considered a response to concerns about the personal attributes and humanistic sensitivity of physicians, the overly "scientized" trend in premedical education, the selection of medical students and the socialization and cynicism engendered by medical education.¹

Traditional modes of teaching ethics stress supplying the student with the knowledge and cognitive skills necessary for ethical decision making as opposed to teaching morals or values. Medical ethics is usually taught as a separate course in either the first or second year of medical school (frequently by philosophers or medical ethicists) and may include ethical theories, codes of medical ethics, and various clinical topics.² Lectures, small group discussions, and readings are the preferred formats. The course work lays the foundation for the use of the case method during the clinical years along with a variety of innovative techniques that are being experimented with across the country in different training programs.³

Formal ethics education in optometry is still in its infancy. An ad hoc Optometric Ethics

Educators Committee sponsored by the American Optometric Association and chaired by Dr. D. Leonard Werner has met four times over the past several years and developed a Recommended Curriculum for the Teaching of Professionalism and Ethics in Optometry.⁴ In its introductory statement the group points out that "the goals of an optometry ethics curriculum are to enable graduates to recognize, critically analyze, and resolve ethical issues that may arise in the practice of optometry." Evolving from this committee, an ASCO Ethics Educators Special Interest Group has been formed to continue collaboration on ethics education in optometry.

This issue of the journal includes a thought provoking article by Dr. David T. Ozar, professor and director of the Center for Ethics at Loyola University of Chicago who addressed the ASCO Ethics Educators SIG at its meeting this spring. Also included in this issue is a paper by Dr. Jerry L. Christensen which presents some suggested elements of a course in biomedical and professional ethics for optometry students emphasizing the development of critical thinking skills and the use of case studies encouraging students to put ethical theories and principles into meaningful practice.

With the expansion of the scope of practice of optometry, the increase in technologically driven innovations in care, the managed care revolution, and the possibility of national health reform, there are

many pressures on an already crowded optometric curriculum. The inclusion of ethics education in the optometry curriculum faces many formidable obstacles and requires creativity and faculty and administration cooperation if it is to occur in more than a marginalized way.

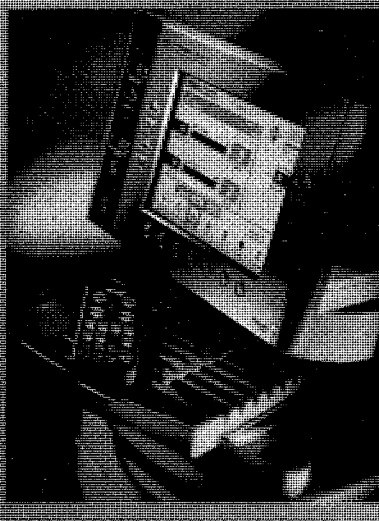
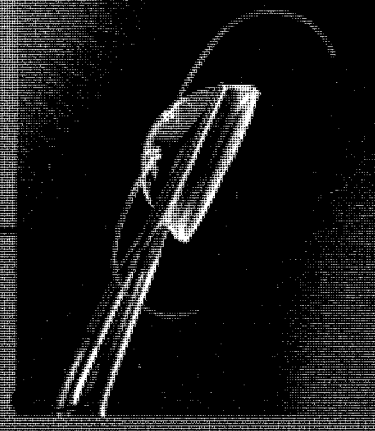
While many of the recommendations about teaching ethics in optometry emphasize conceptual knowledge and analytic skills it is critical to keep in mind the importance of teaching specific behavioral skills which permit the student to put theory into practice. This may be accomplished through specific instruction in interactional skills and course work in the humanities. It is also crucial to keep in mind that students' beliefs, attitudes, values, and personal identities are strongly influenced by the entire optometric educational process and the culture in which it operates. Formal ethics education is more likely to succeed if it takes place in an environment which reinforces the behaviors taught in the lecture halls, laboratories, and clinics where the next generation of optometrists is being trained.

In an informative article appearing in *Academic Medicine*, the authors, one a professor in the Department of Behavioral Sciences, and the other the dean of the University of Minnesota, Duluth School of Medicine, argue persuasively that most of the critical determinants of physician identity operate not within the formal cur-

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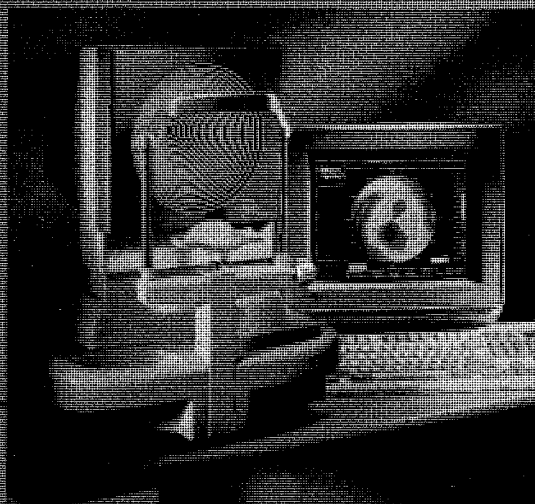
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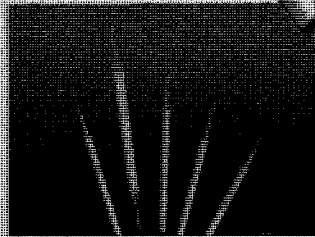
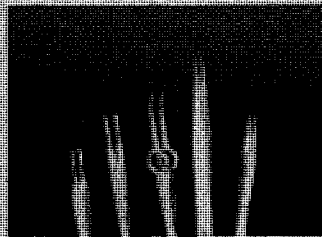
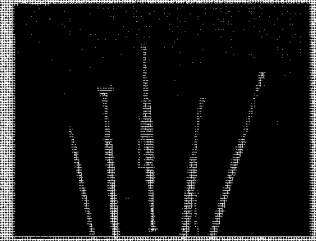
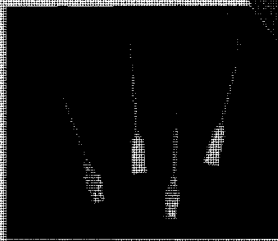
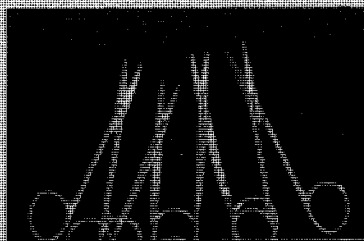


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INDUSTRY NEWS

Companies appearing on these pages are members of ASCO's Sustaining Member Program. Sustaining Members are listed on the inside front cover of each issue. Membership is open to manufacturers and distributors of ophthalmic equipment and supplies and pharmaceutical companies.

Vistakon Names New Group Product Director

Vistakon, a division of Johnson & Johnson Vision Products, Inc., has appointed Cynthia Lee-Ryden, an executive with 18 years of diverse marketing experience, as Group Product Director — Established Brands.

James J. Callahan, president of Vistakon, said that Lee-Ryden will report directly to the vice president of marketing and will have full responsibility for the performance and development of 1-Day ACUVUE Daily Disposable Contact Lenses, ACUVUE contact Lenses and SUREVUE Contact Lenses.

Lee-Ryden came to Vistakon from Polymer Technology, a subsidiary of Bausch & Lomb, where she was vice president — Retail, Consumer, Professional Marketing for Oxygen Permeable Contact Lenses and Lens Care.

Essilor Appoints New Training Manager

Essilor of America announced the addition of Linda Eschenburg as the Essilor Advantage Consultant. Eschenburg will develop, implement and refine the Essilor Advantage program, an innovative curriculum that will provide laboratories with management and employee development skills training in order to help them grow their business.

CIBA Gives Grant To Partnership Foundation

CIBA Vision Corporation contributed \$100,000 to the recently established Partnership Foundation for Optometric Education, Inc. The Partnership is a non-profit organization created by the Association of Schools and Colleges of Optometry (ASCO) and the American Optometric Association (AOA) to provide financial support for the

advancement of optometric education and related special needs of the profession.

"CIBA Vision wants to take a leadership role and encourage the cooperation shown by ASCO and AOA in developing a plan for generating resources to address the future needs of the schools and colleges of optometry," said Sally Dillehay, O.D., M.S., manager of academic development, CIBA Vision Corporation. "We hope that our contribution to the Partnership will inspire other companies to follow suit."

"CIBA Vision's contribution, the first received from the corporate sector, marks a significant expansion of the Partnership and shows that the news of our efforts is becoming widely recognized," said Jerald W. Strickland, O.D., Ph.D., president, Partnership Foundation for Optometric Education. "As the Partnership grows, we will remember that CIBA Vision took the first step in making our dream a reality."

Paragon Acquires Flexlens, Enters Specialty Soft Lens Market

Paragon Vision Sciences, a leading producer of innovative materials used in the manufacture of oxygen permeable contact lenses, announced that it has acquired Flexlens of Englewood, Colorado, a specialty soft contact lens manufacturer.

This move marks the first time Paragon has entered the finished soft lens market and continues the rapid expansion of Paragon as a worldclass specialty vision care company. Paragon regained its independent ownership just 18 months ago. With new products, technology and services, including lacrimal occlusion, the use of topography for contact lens fitting, and ongoing product research and development in space, Paragon is

regarded as one of the most progressive vision care companies worldwide, according to Joe Sicari, president and CEO.

Krist Jani, vice president of worldwide marketing at Paragon, said the specialty contact lens business — such as contact lenses using advanced oxygen permeable materials and designs by Paragon and soft specialty contact lenses by Flexlens — grew by 14 percent in 1996.

In a supplement to the June 1997 issue of Contact Lens Spectrum, Paragon Vision Sciences offered information on the patient and practice benefits of an RGP Planned Replacement Program. For more information, contact Paragon at 1-800-528-8279.

Wesley Jessen Launches Web Sites

Wesley Jessen has launched two Internet Web sites. One contains consumer information, and the other is designed for use by practitioners.

The consumer Web site, which can be accessed at two addresses (www.colorcontacts.com and www.wjfreshlook.com), features FreshLook Colors, including Christy Turlington advertisements. The Web site allows consumers to try on colored lenses in "virtual reality."

The practitioner site is found at www.wesley-jessen.com. It provides bottom line management advice, including practitioner information for maximizing contact lens revenues, product information and promotional campaign information. Both Web sites allow users to question Wesley Jessen via E-mail.

"Both Web sites are just beginning," said Ann Foppe, Wesley Jessen Webmaster. "Going forward, it is our intention to expand the range of information available on

our Web sites to include consumer surveys and a referral service."

Marchon Announces New CE Course

As part of Marchon's commitment to continuing education, a new course has been added to its extensive program entitled "Optometric Management of Age Related Skin Changes of the Eyelids and Surrounding Tissues" recognized for 2 hours of credit by COPE (Committee on Optometric Education of the International Association of Boards of Examiners in Optometry).

The course covers A Review of Normal Skin Anatomy and Physiology, Common Benign Disorders of the Lids and Surrounding Tissues, Management of Eyelash and Eyebrow Problems, Age-related Benign Skin Tumors, Precursors to Malignant Skin Disorders and Malignant Melanoma — The Life Threatening Skin Tumor. Marchon's Department of Education also offers courses on Dispensing Eyewear to Kids; Frame Materials; The Optics of Light and Vision as well as several other courses approved by COPE for optometrists. For more information call 1-800-645-1300.

Vistakon-Sponsored Research Grants Announced

The American Optometric Foundation announced three Vistakon-sponsored research grants for 1997. The Foundation, in conjunction with the American Academy of Optometry Research Committee, will award these competitive grants to fund basic or clinical research in the area of soft disposable contact lenses. There will be three one-year awards: one award of \$25,000 and two awards of up to \$5,000 each.

CIBA Initiates Ad Campaign For Focus Lenses

CIBA Vision Corporation is telling consumers to "Bring Your Life into Focus," via an approximately \$10-15 million advertising campaign, featuring commercials on MTV, E!, Lifetime, and other targeted television networks. Focus is CIBA Vision's family of monthly replacement soft contact lenses,

including Focus Toric, Focus Softcolors, and Focus VISITINT.

The 1997 campaign aims to educate consumers about contact lens options which the Focus family of soft contact lenses offers, with emphasis on driving patients into eye care practices nationwide. "We have already received hundreds of thousands of calls to the Focus consumer line, allowing us to follow up with a campaign, directing callers to their nearby eye care professionals," said Dave Sanderson, vice president of marketing, North American Optics.

Consumers who call the toll-free number receive a brochure and a certificate for a free trial pair of Focus lenses, a list of participating eye care professionals in their area, and a rebate for up to \$35 on their first purchase. For more information, contact the CIBA Vision website at www.cvworld.com



Wesley Jessen Issues Contact Lens Industry Report

Wesley Jessen has issued a special report, "U.S. Soft Contact Lens Industry Update." The four-page report contains 11 graphs detailing recent trends in the soft lens market.

Among the highlights:

- Overall, the U.S. soft contact lens market in 1996 enjoyed double digit growth, as it has in recent years. Growth continues to result from increases in both the wearer population and in the number of lenses consumed per wearer each year.
- In 1996, manufacturer sales of soft lenses in the U.S. surpassed \$1 billion for the first time, increasing 11% over the prior year. The premium specialty segment accounted for 30% of man-

ufacturer sales and has enjoyed more rapid growth than the commodity clear class in recent years. Since 1994, premium specialty lens sales have grown 29% versus 20% for commodity clear lenses. The premium specialty segment includes torics, bifocals, cosmetic and other specialty lenses.

- Within the premium specialty lens class, torics and cosmetic lenses enjoyed the strongest growth rates. They account for more than 80% of the specialty lens market.
- WJ's share of the soft lens market increased to 13.5% in 1996, up from 12.7% in 1995.

Vistakon Introduces a UV-blocker And Inside-Out Marks

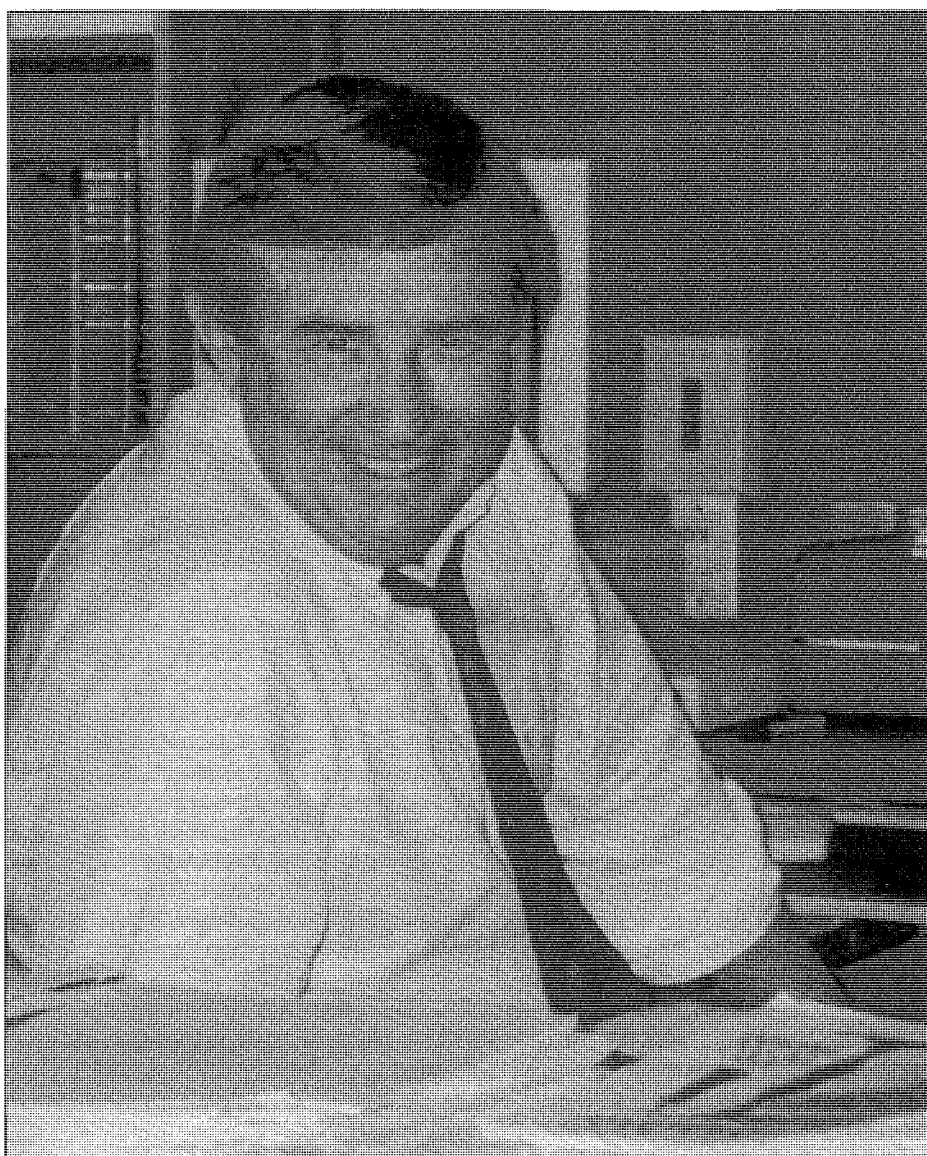
Vistakon announced two major new product enhancements — ultraviolet (UV) protection and inside-out marks.

"UV protection and inside-out marks are just two of many important announcements we have planned for the future," said James M. Callahan, president of Vistakon. Callahan said the company will have a UV-blocker in all its products — ACUVUE Contact Lenses, SUREVUE Contact Lenses and 1-Day Acuvue Daily Disposable Contact Lenses — by the end of the summer.

Callahan also explained that the addition of inside-out marks responds to a consumer need for greater ease of contact lens handling. "We have tested the inside-out marks extensively, and found them to improve and simplify lens orientation and insertion," said Stanley J. Yamane, O.D., Vistakon's vice president, professional affairs. "Patients tell us that even lenses that normally handle well could benefit from inside-out marks."

Correction: The spring 1997 issue contained incorrect information on the awards won by students in the Varilux-sponsored Optometry Super Bowl. The awards were presented to Greg Steele, UAB (first place - \$1,000), Derek Allmer, PUCO (second place - \$500) and Jeff Johnson, ICO (third place - \$250) Congratulations to all! ■

Focus on the President



ASCO's new president, Jerald W. Strickland, O.D., Ph.D.

Jerald W. Strickland, O.D., Ph.D., began a one-year term as ASCO's president in June 1997. Dr. Strickland is a native of Indiana with undergraduate, professional and doctorate degrees from Indiana University, in Bloomington. After graduate studies he joined the faculty of the School of Optometry at Indiana University where he taught and was the director of external affairs. In 1974 he joined the faculty and administration of the Pennsylvania College of Optometry, Philadelphia, Pennsylvania, as the

director of the Division of Professional Studies. The following year he was appointed dean of academic affairs at the College and he served as dean and chief academic officer until going to the University of Houston in July 1979.

His initial administrative role at the University of Houston College of Optometry was as the associate dean for administration and professor of optometry, and in 1981 he was appointed associate dean for professional studies. He continued to teach in the areas of patient care and com-

munity health while an administrator and served the College and the University as member and elected chair of the Graduate and Professional Studies Council and the President's Budget Advisory Council, and as a member of the University Planning and Policy Committee. He has also served on special committees, task forces and ad hoc committees within the university faculty governance system.

Since May 1992, he has served as dean of the College and represented the faculty and the College at the national, state, university and practitioner levels.

He has recently been appointed by the Texas Commissioner on Higher Education of Texas to the Health Professions Education Advisory Committee to the Texas Higher Education Coordinating Board.

In 1996 Dean Strickland was selected as "Optometrist of the Year" by the Texas Optometric Association, the first time a dean of the College has received such an honor. Dr. Strickland has been a longtime and vocal advocate for the funding of advancements in optometric education through endowments specifically for the schools and colleges of optometry, and recently he was elected President of the newly formed Partnership Foundation for Optometric Education.

Dr. Strickland recently received the "Spirit of Philanthropy Award" from the Indiana University School of Optometry and the Indiana University-Purdue University-Indianapolis Campus. The award was presented for his support of the School of Optometry, its programs and the profession.

Dr. Strickland was interviewed recently by Patricia Coe O'Rourke, managing editor of *Optometric Education*.

OPTOMETRIC EDUCATION: Dr. Strickland, what are your goals for ASCO as you begin your year as president?

Strickland: In a few words, we need to "stay the course" which my predecessors and the Board of Directors have set for the past several years. The ASCO Strategic Plan, adopted in 1986 and revised in 1994, sets out directions from which strategic initia-

tives may evolve. Such direction and focus for an organization should provide the underpinnings and rationale for all the activity of the Association. Indeed, the 1997-98 initiatives and goals are framed by this overall vision.

As we begin the work for the 1997-98 ASCO year, we need to remember all the past hard work of the staff and the volunteers who have provided wisdom and guidance through participation on task forces, committees, focus groups, councils and special interest groups. Their work should be revisited and, if appropriate, brought back to the table as we begin to investigate new initiatives. It is this valuable background of information and intellectual heritage which provides the strength and endurance of an organization. Tying important initiatives to more than one administration is essential to the organization; therefore, the 1997-98 goals, I hope, will be overarching ones that attack a few questions, initiate dialogue about them and set a path to answer them.

The first initiative will be a Critical Issues Seminar to be held in March 1998, in Houston, Texas, to address the rationale, need, demand, definition, breadth, accreditation and funding of postdoctoral clinical education (residencies) in the profession. Other issues raised in the Summit Conference on Graduate Education, Residencies and Fellowships held in August 1993, will be addressed using the wisdom garnered from five additional years of experience, thinking and work by the profession. This includes completing the work we began at the 1997 Critical Issues Seminar on "defining entry level competency."

The second initiative will be to formulate the role of ASCO in the promotion, development and advising of international programs in optometry with a specific focus on Latin America for the 1997-98 year. For many years individual colleges have had sister-school relationships with many institutions around the world. These relationships, in many cases, have included consultation regarding the curriculum, faculty development, equipment, visiting scholars, continuing education, preceptorships and cooperative patient care activities and missions in underserved areas. Formal mechanisms should be developed in cooperation

with the World Council on Optometry, the International Association of Boards of Examiners in Optometry, Latin American schools and colleges and organized professional societies and associations in Latin America. Such a truly broad-based approach would provide a greater depth and breadth of support and counsel than is currently provided by sister-institution relationships.

Finally, as a continuation of Past President Tom Lewis' initiative to embrace the future of the profession through a well-organized future-oriented investment plan, and because the good health and welfare of the schools and colleges are indeed the necessary ingredients for a strong and viable practicing profession, I will commit further energies to the Partnership Foundation for Optometric Education. This partnership between the practicing profession, the schools and colleges of optometry, the ophthalmic industry and related organizations will help finance, through long-range fund raising and investing, the huge infrastructure and technology demands required in the next millennium. The estimated need of \$1.6 billion dollars by 2015-2020 can only be approached by forward thinking and future-minded initiatives. The Partnership Foundation is the exact vehicle to accomplish the task.

OPTOMETRIC EDUCATION: What do you see as the challenges facing the schools and colleges in the next ten years?

Strickland: I have already mentioned that current and future resources for the schools and colleges are very high priorities. Most private institutions are dependent upon tuition-driven resources, while many state university programs are becoming more and more dependent upon student paid tuition and fees. With undergraduate student debt growing and with professional school loans added to this debt, the debt burden has become substantial and significant for practitioners entering the profession. The cost of education and training for the health professions has spiraled upward and has exceeded the national rate of inflation for the past ten years.

Some attempts at cost containment and leveling of tuition/fee rates have been successful in the schools and colleges. There is no doubt that other colleges could learn from these significant examples. Perhaps a future critical issues seminar will look at the cost of education and student indebtedness with a special focus on best practice concepts in cost containment and non-tuition revenue enhancement in the schools and colleges of optometry.

OPTOMETRIC EDUCATION: What have been your priorities as dean at Houston?

Strickland: Since assuming the deanship in 1992, I have had a single focus, although often blurred by reality, and that is to provide greater financial resources to the college in order for the faculty and staff to do their creative work in teaching, research and scholarship, service and patient care. This task has been formidable, particularly during a period of flat state and university budgets. We have been successful on several fronts, including grants and contracts, state formula funding, special line-items, philanthropy and patient care revenue.

A second focus has been to embrace current and emerging technology in all aspects of the college operation, from the Internet to telemedicine. We have been successful in this initiative with the help and encouragement of the University. Up-to-date and cutting edge medical and ophthalmic diagnostic and therapeutic equipment and technology have also been included in this initiative. Indeed, we have been fortunate to have the resources to be able to add such advanced technology in the past four years.

OPTOMETRIC EDUCATION: I know you are also the president of the Partnership Foundation for Optometric Education. Could you explain to our readers how the concept of the Partnership Foundation developed?

Strickland: The concept of a partnership between the practicing profession, the schools and colleges, the ophthalmic industry and related

organizations was born at the Georgetown Summit on Optometric Education, March 19-22, 1992. Following provocative and stimulating pre-conference papers on all aspects of financing optometric education, the requirement of 1.6 Billion dollars — yes, with a “B” — was estimated by several sages within the profession to meet the special challenges which were on the horizon (near 2015-2020). It was clear that bricks and mortar, technology and basic infrastructure of the programs were the known variables which drove the figure. The magnitude of the problem dictated the magnitude of the solution, not just in terms of dollars but in terms of creativity and imagination.

It was after subsequent discussions — and while talking with Roger Boltz (UH), Tony DiStefano (PCO), and Felix Barker (PCO) — that a concept materialized for funding the future through incremental assessments, none of which were themselves large, but which could be attached to hundreds of thousands of the “units” that were being utilized by the public, the ophthalmic industry, and the profession on an annual basis. In addition, traditional philanthropy would also play an important part of the plan.

This incremental concept was further developed to include continuing optometric education from all venues. A second thrust would reach into the ophthalmic industry for a pass-through charge from the consumer directly to the foundation. We then named the parent organization the “Partnership Foundation,” indeed representing the relationship we felt with our colleague practitioners and our friends in the ophthalmic industry. We felt the concept of a “foundation” represented a futurist approach and was necessary to reach our goal in the first 20 years of the 21st millennium.

The ideas for incremental funding are well grounded in other industries and have had a history in optometry for only the past 20 years. The cattle, vegetable and fruit growers associations have used this funding mechanism for many years. In health professions education, the often cited example is the “pop tax” utilized in West Virginia, which was imposed on soft drinks to fund the development of a new dental school. In the past, a few schools and colleges of

optometry worked closely with wholesale optical laboratories to transfer dollars donated by practitioners, as a percentage of their laboratory bill, directly to the institution. In Australia, the Optometric Vision Research Foundation (OVRF) recruited practitioners to donate funds based on a 50 cents per contact lens levy from participating practices. In most cases these incremental costs were passed on to the patients. The funds were transferred to OVRF and credited to the National Cornea and Contact Lens Research Fund.

As many of your readers know, the organization was legally born in December 1996 as the “Partnership Foundation for Optometric Education,” a 501(c)(3) charitable foundation chartered in the State of Maryland, and I was elected the first president of the Foundation. John McCall is the vice-president, Larry Clausen is the secretary-treasurer, and Joel Byers is the executive committee member-at-large. Others serving on the Board are Tom Lewis and Mike Jones. From the makeup of the initial Board, you can clearly see this is a true partnership between the AOA and ASCO leadership and their respective organizations.

OPTOMETRIC EDUCATION: What is your vision for the Foundation's growth?

Strickland: The initial resource development program in the Foundation consists of a philanthropic component and an incremental fee component. CIBA Vision, Inc., made a substantial commitment to the Foundation in December 1996 and again in March 1997. In addition, all the schools and colleges of optometry agreed to contribute \$1 per hour of paid continuing education delivered directly or cooperatively by the institution. The American Optometric Association also agreed to the same plan and the American Academy of Optometry and the Southern Council of Optometrists have been approached to participate as “partners.” Within the next 12 months we hope to expand the Foundation to the one million dollar level with further continuing and accelerated growth of the corpus through new incremental assessment programs and generous ophthalmic industry philanthropy.

OPTOMETRIC EDUCATION: Your career in academia has included experience in three of the schools and colleges of optometry. Who were the people who influenced the development of your educational ideas?

Strickland: I have been fortunate to work under or alongside a number of persons from whom I have learned much about academic administration. Those who have had the greatest affect on my career have been Henry Hofstetter (IU), Gordon Heath (IU), Bill Baldwin (UH) and Norman Wallis (while at PCO). These individuals were patient counselors and fine academic administrators. They were there to help as mentors and colleagues whenever there was a need to keep me on the right track or nudge me to “wake up” to the not-so-obvious facts in a particular situation.

Others with whom I have worked and learned much from are Don Pitts (UH), Tony Adams (UCB) and Tony DiStefano (PCO). These colleagues were indeed peer mentors, advising, counseling, while also sometimes seeking advice and counsel.

I have been fortunate to work with leaders of this caliber throughout my career in optometric education. Persons within the University of Houston and outside of optometry have also provided mentoring and training for me in the affairs of the academy. These include Jim Pickering, former UH president; Glenn Aumann, former UH senior vice president and provost; George Magner, UH senior vice chancellor and provost, and my 13 dean colleagues at the University. ■

Optometry: The Twentieth Century Profession

Alden N. Haffner, O.D., Ph.D.

President Hopping, distinguished colleagues, new and old, ladies and gentlemen, friends all.

Commencement addresses, by tradition, in whatever venue, are not infrequently trials of endurance for those who must listen. I am keenly aware of that circumstance and I am largely empathetic with it. But this message today is a special one for the venerable Southern California College of Optometry and for its large and extended family of faculty, staff, students, trustees and alumni. It is, indeed, the final commencement ceremony presided over by its dynamic and dedicated President, Dr. Richard L. Hopping.

We are approaching the end of a decade and, with it, the end of a century and of a millennium. There will be no shortage of historians and pundits who will review the global events of these periods in order to assess the human condition, its glories and its tragedies, its achievements and its failures. No end of analyses await us.

But closer to home, one analysis is worthy of some exploration. It is the

march of our profession in the period of this century. Notwithstanding our much earlier and acknowledged historical antecedents, the profession of optometry legally is a twentieth century profession with its first statutory enactment in 1901, recognizing and regulating optometry in the State of Minnesota. This recognition process was completed in one generation culminating in 1924 in the District of Columbia. Legal recognition was the first of five great epochs in this century that have spurred the evolution of optometry from a discipline to a profession.

Indeed, from the beginning of this century until the end, the growth, the development, the sophistication and, yes, the radical change have been nothing less than spectacular. Evolutionary change has been, at once, controlled and yet bold in its design and configuration. And, without doubt, the most controlling epoch and, in my view, the most fundamental, has been the acculturation of its complex and finely textured system of professional education. It is a system of depth and of sophistication and one that has, by its educational outcomes, stood the test of rigorous accreditation concepts and standards. Beyond the baccalaureate, doctoral level professional optometric education is the major epoch upon which all

others have been built and upon which all other developments so fundamentally have depended and will continue to depend.

Optometric education was the *raison d'être* for the development of graduate education at levels of advanced degrees. Thereby, research in the vision sciences and in physiological optics fostered a sense of respect for our educational process and for the soundness of our curricular constructs. We began to add new knowledge, understanding and intellectual strength to our programs. This, then, was a second epochal development and it culminated in the universal acceptance and recognition of the O.D. degree as the terminal professional degree for optometry in the colleges and universities throughout the United States. And with this stunning achievement were the parallel recognitions in all of the states and by the federal government. No doubt about it, the development of the optometric educational enterprise up to the late 1960's set the stage for the remarkable practice metamorphosis which immediately was to follow.

It is an interesting and, I believe, compelling observation that the legal scope of professional responsibility in optometry had not fundamentally changed from the historic development in Minnesota in 1901 and for the period of more than seven decades. While statutory responsibility remained constant, the educational and academic preparation had radically been expanded and altered, thus creating what I hold to have been a serious imbalance. Education far exceeded practice responsibility in a very pronounced incongruity. That imbalance has, in part, been corrected by the rapid expansion of practice responsibilities in each of the states in less than three decades. And, colleagues and friends, while practice responsibility expansion statutes were achieved in one legislative body after another, in stellar fashion, it must not be forgotten that it was intellectually earned in the lecture halls, in the laboratories and in the clinics of the schools and colleges of optometry. And the Southern California College of Optometry never paused for a moment in its exercise of progressive leadership in this regard. This third epoch in the modern history of our profession was and is dramatic in its impact and dimensions, and it cannot be viewed out of context of the prior

Dr. Haffner is president of the State College of Optometry, State University of New York. He was the commencement speaker at the Southern California College of Optometry on May 16, 1997.

two. I venture the thought that the expansion of professional responsibility will be a continuing one with ever broadening scope occasioned by new knowledge, new technological development and greater sophistication of our educational process, particularly that of our clinical education.

The fourth epochal stage of development has been in advanced clinical education in the formal setting of structured residency programs. The very first began in 1967 at my own institution in New York City and was formally recognized and accredited in 1973. It is in continuous operation today and is the oldest of its type. But formal residency education, as advanced clinical learning, steadily grew and developed during this period, with rapidity and with curricular depth. The pace has been remarkable. The United States Department of Veterans Affairs has been a singular force in this expansion and there appears to be no abatement in sight in this drive for advanced clinical education. While there is controversy about the doctrine that entry level competence is, in fact, the O.D. degree, and I agree with that doctrine, it nevertheless cannot be denied that there is a growing need for, and justification of, structured and accredited residency programs of advanced clinical education. The doctrine will have to be reexamined periodically because we will not yet be able to rationalize this problem for at least a generation. One element is certain; it is that formal residency education will propel our profession toward greater and more defined clinical sophistication. The years ahead in this regard are both exciting and challenging.

Now, let me turn to the fifth epoch in this modern era of optometry. It is the decided and significant movement of the profession from the periphery of health care organization more centrally to the mainstream. This too, can be measured in its beginnings in the late 1950's when optometrists began to seek advanced education and graduate degrees in the field of public health. Today, persons with MPH's, MPA's, MBA's and related doctoral degrees number about 200. They are critically important to the thrust of the profession not only in public and community health, but, as well, in public policy, business and finance in health care and, very importantly, in administrative roles in government, in the health insurance

industry and in clinical management. It is an area of growth that is needed and one for which some OD's are fully qualified. While not yet widespread, optometric leadership in these areas is in demand and it will, I hold, add to the standing of optometry as the area grows. Reverting to an old theme, I assert that we, in the profession, should do more to develop career tracts in administration and management and outside of clinical practice in order to foster this essential progressive evolution. It is already taking place and we must embrace it and further its advance.

It is difficult, if not hazardous, to define the march of a profession in any period except from both sociological and historical perspectives. But these five epochs, it seems clear, can be defined for our profession and



Then SCCO President Richard L. Hopping, O.D., congratulating Dr. Haffner on receiving the honorary degree, Doctor of Science, from the Southern California College of Optometry.

they continue to evolve. Later historians will help to refine what I have said — or, indeed, reject the themes I have enunciated.

Suffice it to say that you, who are graduating today, my new colleagues, are in the midst of one of the most exciting periods of health care and of optometry. These are two systems of change, one within the other. Optometry is evolving within a larger and far less stable system of health care change. And, what is needed from you, indeed, from each of you, is the intelligence, professionalism and leadership of which you are so capable. You are optometry's best and its

brightest and we fully expect that your contributions, in what I have termed the march of the profession, will be no less dramatic and epochal in the next century as those that we experienced in this century. I wish you God speed in this great career adventure in which you are about to embark.

I said in my opening remarks that this ceremony today was very special because it is the final one that Dr. Hopping will conduct as President of this institution. Colleagues and friends, it is not special for him, but, rather, for us. We must not be saddened by this event. Rather, it is time to express joy, admiration, respect and affection for him. We are all fortunate, beyond any doubt, that we were the recipients of his leadership and of his prodigious accomplishments.

Richard Hopping's career spanned three separate spheres — as a practitioner, as an educator and as a leader — and each one was marked by distinction, accomplishment, and most important, by the establishment of new standards of excellence. For over four decades, half of that time at Fullerton, Dick has molded the advancement of professional practice just as he has effectively handled the advancement of professional optometric education. In my view, he has provided a consistently high level of leadership among leaders to enhance the standing, importance and utility of our profession to the public welfare.

With utter devotion and undiminished commitment to the enhancement of optometry, we truly can be thankful for his extraordinary career. Indeed, colleagues and friends, he is a leader of leaders. In a simple turn of the phrase, Mohandas Gandhi expressed it so eloquently, "You must be the change you wish to see." Those words express the purposeful, remarkable and faithful leadership of Richard Lee Hopping. You are fortunate that he was your President and I am fortunate that he is my friend. And with these words, I pay tribute to President Hopping, an ultimate exemplar.

Friends, you have bestowed upon me an honor in two very personal and very important ways. With this honorary degree, I will, until my last days, cherish my relationship with this splendid institution. And second, you have given me the signal honor to share with you, and with each of you, this very important and happy occasion. I will not forget this day, and I thank you for it. ■

Teaching Professional Ethics

David T. Ozar, Ph.D.

On March 21-23, 1997, the ASCO Ethics Educators Special Interest Group held a Conference in Chantilly, Virginia, with Dr. John Arras, professor of biomedical ethics at the University of Virginia and myself as keynote speakers. The Conference included six sessions, with a lot of time in each session for discussion.

The first session was on Optometry as a profession and the general theme of professional ethics. For most professionals, the ethical standards of their profession constitute the single most important moral resource in their professional lives. But very few professions' ethics are spelled out in any detail in their professional organizations' published codes. Instead, the details of ethical professional practice are principally expressed in the habitual actions of the members of the profession. Even when self-conscious deliberation is called for, most members of most professions are not very articulate about the precise contents of the professional commitments they have made.

This means that those who teach ethics in the schools and colleges of Optometry must make a special effort to become articulate about such mat-

ters. One useful tool for this purpose is a set of "Eight Categories of Professional Obligation," originally developed by Ozar and a co-author to guide the analysis of professional obligations in dentistry. A copy of these categories appears on page 119. The best way to use it is to think of each category as asking a set of questions about optometrists' professional conduct. If you can give a careful answer to each of the eight sets of questions about Optometry's professional standards, then you will have a rich set of conceptual tools for deliberating about how to act professionally when that is in doubt and for communicating to patients, colleagues, co-workers, and others your reasons for believing that you or someone else ought to act in a certain way.

The second session focused on the specific professional-ethical issues involved in relating properly to patients, including the legal/ethical theme of informed consent. The third session examined the kinds of situations in which optometrists' professional obligations conflict with other concerns and commitments, and offered an overview of several approaches to moral reflection that might be used to address such conflicts. The fourth examined the general challenges to professionalism for health care providers who must also keep a business afloat, and then looked at some of the particular ethi-

cal challenges posed for optometrists by managed care. A fifth session focused on ethical issues related to respect for patients' confidentiality. Each of these sessions concluded with a general discussion of a relevant case from ordinary optometric practice, both to keep the focus on concrete, real life concerns and to model for the participants the techniques ethics educators can use in case-based teaching.

The final session, which lasted all of Sunday morning, focused specifically on the teaching of professional ethics to optometry students. Drawing on recent developmental psychology and the two faculty members' experience in teaching ethics, a set of appropriate outcomes for ethics education was proposed. Then various methods of assessment appropriate to these outcomes and a variety of teaching strategies were examined, including especially case-based teaching techniques and case-based assignments for students.

The faculty stressed that, unlike common methods of instruction in many other fields, the teaching of professional ethics (or any other area of ethics when taught to adults) must be principally by way of conversation. Every adult, whether articulate or not, has had experiences that are relevant and informative in relation to most common ethical questions. Part of the teacher's skill is to connect the learner's own experience with the issues under consideration. Even though optometry students are just becoming acquainted with the realities of professional optometric practice, they have had experiences that can be built upon in explaining and applying the professional standards of optometric practice. In addition, in every professional field, ethics education is ordinarily most effective when it begins in the concrete, usually around a case, even when what needs to be taught is some general or more abstract point.

In connection with these points, the faculty referred the participants to a document, *Framework for Discussing Ethics*, that had been distributed at the beginning of the conference as a guideline for the conference's own conversations. This document, which follows, can also provide a useful framework for conversation about ethical issues in any appropriate setting, including ethics classes, among groups of faculty, or between optometrists and their patients or anyone else who is interested. ■

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Framework for Discussing Ethics®

David T. Ozar, Ph.D

The following items are offered in order to establish a workable framework for discussing ethics in the Conference. They are here simply posited, rather than carefully explained or defended. For present purposes, then, they must be considered presuppositions of the workshop and its discussions, rather than matters that have been established by careful discussion as part of the workshop.

1. To keep matters very simple, an "ethical" or "moral" question (in contrast to a question that has nothing to do with ethics or morality) is a question in which someone's well-being or rights or duties are at issue or at stake. In addition, because the meanings of these two terms are not carefully distinguished in a manner that is widely and consistently employed, the terms "ethical" and "moral" will be treated as synonyms here and used interchangeably, indicating in each case simply whatever ought or ought not to be done. More complicated distinctions within this arena of discussion should be made explicitly. I will often say "ethical/moral" to emphasize this point.

2. There are no experts, in the usual sense, in ethics or morality. Objectivity (and the move away from

subjectivity) in ethical judgments is increasingly achieved as one's ethical judgments are grounded in a broader and broader base of human experience—both one's own personal experience and the experience of other humans shared in dialogue. (Such objectivity is closely parallel to the objectivity of the natural sciences.) Experience that is relevant to the discussion of ethical issues is not exclusive to any particular group. All humans can learn from these matters from each other. In this sense, while there are no special experts on ethical matters, every person who reflects carefully on his or her experience has expertise to share with others.

3. A hindrance to dialogue about moral matters, and hence a hindrance to broadening our experience and to our achievement of greater objectivity in moral judgments, is the lack of a common, widely understood vocabulary—in contrast, for example, to the detailed, widely understood and accepted technical vocabulary of the natural sciences. Similarly, discussions of moral issues ordinarily lack a commonly accepted method of demonstration to resolve disagreements, in contrast to the widely accepted method of demonstration in the natural sciences that we call the "scientific method." Except for dis-

putes about the foundations of the sciences and of the scientific method itself, this method can be used to resolve most disagreements in the natural sciences. Even among philosophers and others who work hard at analyzing moral reflection in a careful, systematic way, there are three or four or more systems of moral reflection, rather than one that is accepted by all who participate in the discussion.

4. Careful dialogue about ethical issues can begin to correct these lacks, by developing mutual understanding of the words people use and the experiences their words refer to, by comparing different methods of moral reflection and judgment, and by broadening the base of each one's experience through others' willingness to communicate theirs. A key to the success of such dialogue is mutual respect among the participants. Each must be willing to share his or her experience of what ought and ought not to be done, and the reasons why, with the others. Each must also be willing to learn from the others; selective listening is as destructive as the refusal to share.

5. There is a view widespread within our culture that there are no correct answers to moral or ethical questions, or rather that every answer that anyone might give is just as correct as every other. In this workshop there is no time to examine this fundamental issue carefully. The view that seems the most productive for present purposes, however, is that the matter is at least an open question. No one has yet demonstrated that there are no correct answers to moral questions; and no one has yet demonstrated that one particular ethical system provides all the correct answers to such questions. Therefore, it is reasonable to continue the search, to carry on an inquiry into the correct answers to the particular set of ethical questions that happens to concern us here, on the assumption that we may find answers, or at least that we have no reason to think that we won't.

6. Questions about what is morally or ethically required or morally or ethically permitted are distinct from questions about what is legally required or permitted. The law is sometimes a guide to what is morally correct; but it is not a fundamental determinant of what is morally correct. We look to morality to tell us what law ought to be, rather than vice

versa. In practice, of course, determinations of our strategies of action will have to include questions about the law and its impact on our lives and the lives of others. But the bearing of legal requirements on what is morally or ethically best in a given situation will always depend more radically on what morality requires than on what the law requires. Thus, if we determine that the law is supportive of what morality requires, all the better; but if we determine that the law hinders or runs counter to what is ethical, this is a sign that the law ought to be changed, or perhaps even that we ought to disobey the law. Therefore, for our purposes here, the primary focus will be on what morality requires, not on the law.

7. People's ethical views and convictions have many sources. People learn various aspects of their ethical views and convictions from their family and other important figures in their upbringing, from their formal education, from informal life-contacts both prior to maturity and afterwards, from the culture of the society at large and within specific social and occupational groups, from religious upbringing during their youth and their religious commitments as adults, and from personal reflection throughout life. For present purposes, because of the likely diversity of backgrounds and views of participants in these workshops, we have to consider all of these sources as equally valuable and equally irrelevant. That is, none of them can be viewed as a privileged source of ethical answers or as authoritative in its own right. Each idea or insight proposed within our discussions should stand or fall on the basis of the reasons that we can offer for it or against it within our own conversations, regardless of its origin for any of us personally.

8. At the most fundamental level, every discussion of ethics presupposes that our judgments about what ought and ought not to be done can affect our actions. A number of different accounts of the makeup of human action have been given which explain the possibility of such impact. Most of these take seriously the common sense conviction that humans are able to make choices between alternative courses of action, a capacity often expressed with the word "freedom," although this word has many other meanings besides this one. For present purposes, we shall presuppose

that human actions are, in some significant sense, the product of judgment and choice.

9. In actual life situations, especially when a patient is being cared for, few of us are likely to take time out to engage in a meticulous weighing of professional obligations. Instead, most of our actions, professional and otherwise, are the product of trusted habits that we have formed and reinforced over the years. But such habits can be subjected to reasoned examination as surely as the apparently spontaneous actions that they prompt. It is this reflective process that we shall be trying to stimulate here. In fact, even when we are discussing very particular cases, the questions that concern us here will in each instance admit of being reformulated to read: Should an optometrist have a habit of acting in this way or that?

10. At the same time, it is important to remember that the presence of long-established habits in a person does not mean that they cannot grow or change. We have all had the experience of identifying in ourselves, as adults, an habitual pattern that we judged inappropriate, even morally objectionable, and of making a choice to remove that habit and replace it with something more acceptable. To be sure, habits are sometimes very difficult to change; and in some special cases, habitual patterns cannot be changed without the professional assistance of others. But the fact that many of the actions and convictions that we examine in ethical discussions are based on long-established habits does not demonstrate that we can do nothing about them. In fact, the first step in any process of change is careful reflection on how we ought and ought not to be acting. Only then will we be in a position to know if change is required or not, and to begin asking about the best way of accomplishing it.

11. It will be obvious that not much direct attention is paid during the conference to any of the published codes of professional conduct. This is not out of a lack of respect for the important role of such codes in the daily practice of health care. The reason is rather an interest in discussing ethics and professional obligation at a more basic level. Such codes, by their very nature, must address particular classes of issues and situations without submitting the fundamental ethical and professional values and prin-

ciples on which their strictures are based to careful examination. In the present setting, however, we can examine the starting points of professional ethics by looking at the most fundamental bases of professional obligation and at the basic elements of ethical decision-making. Our aim is to develop a clear understanding of the values and principles on which health professionals ought and ought not to act, and of the habitual patterns that they ought to inculcate in their practice. With that in hand, we will be able to study particular code requirements much more effectively.

12. The materials for this workshop presuppose a certain general understanding of what a profession is. According to this view of professions, every health care professional has joined a group of persons who have made, both individually and collectively, a set of commitments to the community at large, commitments which entail important obligations for each health care practitioner and for the profession as a whole. Thus the workshop presupposes that the first answer (though not a complete answer) to a health professional's question, "Why should I view myself as having obligations towards my patients?" is simply, "Because you are a physician, nurse, social worker, etc., a professional." This is a view of profession that I call the "Normative View" because it holds that it is an essential feature of a profession that its members have special obligations, both individually and collectively, because they are professionals.

This is in contrast with the view of profession that I call the "Commercial View." Here the health care practitioner has a product to sell and makes such arrangements with interested purchasers, either identifiable individuals or groups, as the two parties are in any instance able to agree to. Beyond fundamental obligations not to coerce, cheat, or defraud purchasers—because acting in these ways would violate the liberty of those who bargain with them—health care professionals have no obligations to patients or to anyone else other than the obligations they have voluntarily undertaken. Obviously, according to this view, health professionals have no particular obligations simply because they have chosen to be health professionals. The working assumption of this conference is that the "Commercial View" of the health professions, and of optometry

in particular is false. This obviously does not mean that optometrists have none of the concerns of business persons; it means instead that success in the market place is not the principal criterion of success in this profession.

The rest of what needs to be said about this profession in order to begin to articulate what its ethic does identify as its priorities is the work of the conference. ■

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Eight Categories of Professional Obligation

(From Ozar and Sokol, *Dental Ethics at Chairsides* (Mosby-Yearbook, 1994))

A. The Chief Client.

Every profession has a chief client or clients. This is class of persons whose well-being the profession and its members are chiefly committed to serving.

B. The Ideal Relationship Between Optometrist and Patient.

The point of the relationship between a professional and a client is to bring about certain values for the client, values that cannot be achieved for the client without the expertise of the professional. Bringing about these values will require both the professional and the client to make a number of judgments and choices about the professional's interventions. The question addressed in this category of professional obligation concerns the proper roles of the optometrist and the patient as they make these judgments and choices and the ideal relationship for which the professional strives with every patient.

C. The Central Values of the Optometric Profession.

No profession is committed to securing for its clients everything that is of value for them. Rather there is a certain set of values which are the focus of each profession's expertise and which it is the job and obligation of that profession to work to secure for its clients. The question asked here is what are the central values of the optometric profession and, if there are several, in what order they rank.

D. Competence.

Every professional is obligated both to acquire and to maintain the expertise needed to undertake his or her professional tasks. Every professional is also obligated to undertake only those tasks that are within his or her competence, and to assist clients whose needs are beyond their expertise in locating a practitioner who can assist them.

E. Sacrifice and the Relative Priority of the Patient's Well-being.

In every profession's self-descriptions, e.g. in published codes of ethics, a commitment to service and the best interest of the public have always received prominent mention. But these expressions admit of many different interpretations with significantly different implications for actual practice. It is important to ask just what measure of sacrifice of personal interest and of an optometrist's other commitments is professionally obligatory and what are limits on such required sacrifices.

F. Ideal Relationships Between Co-Professionals.

Each profession also has norms, usually mostly implicit and unexamined, concerning the proper relationship between members of the same profession in various matters and also between members of different professions when they are dealing with the same clients.

G. The Relationship Between Optometry and the Larger Community.

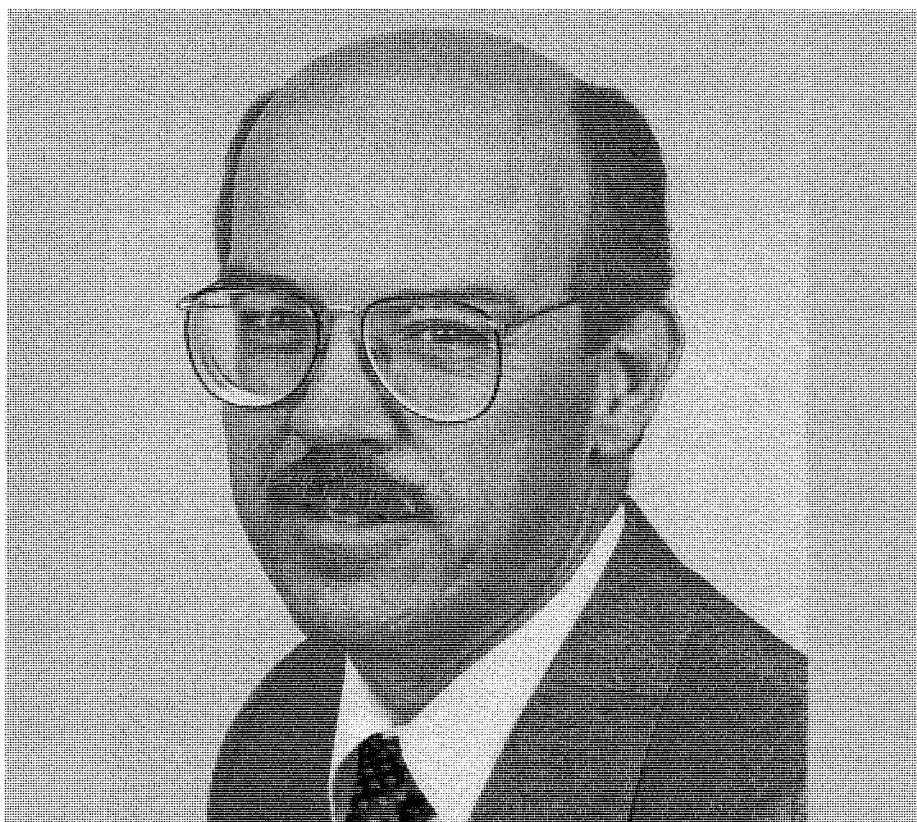
In addition to relationships of professionals and their clients and of professionals with one another, the activities of every profession also involve relationships between the profession as a group or its individual members and persons who are neither co-professionals nor clients. These relationships may involve the larger community as a whole or various significant subgroups of it or specific individuals.

H. Integrity and Education.

Finally, there is that very subtle component of conduct by which a person communicates to others what he or she stands for, not only in acts themselves, but also in how these acts are chosen and in how the person presents himself or herself to others in carrying them out.

Teaching Tutorial Assisting the Learning of Ethics

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Profile

Education:

O.D., 1964, The Ohio State University

M.S., 1966, Ph.D., 1969, Physiological Optics, The Ohio State University

Teaching Experience: Classroom and laboratory teaching at The Ohio State University; the Massachusetts College of Optometry (renamed the New England College of Optometry in 1976); the University of Alabama at Birmingham School of Optometry; and the University of Missouri-St. Louis School of Optometry, since 1980

Teaching Focus: courses in ocular anatomy and physiology, ocular optics, ocular motility, binocular vision, optometric orientation, and practice management, which includes ethics

General: Full-time faculty member since 1969 and the founding dean of the University of Missouri-St. Louis School of Optometry from 1980 to 1995

Introduction

The phrase "assisting the learning" was advisedly selected for use in the title of this article as a way of answering the first question many ask about teaching ethics—Can ethics be taught? Hemingway, when asked if writing can be taught, replied, "No, but it can be learned," and I feel the same is true of ethics. The creation of an effective course on ethics for optometry students requires a careful consideration of the type of activities and the nature of the environment which would be most conducive to the student's learning. In the remainder of this article, I discuss those elements which I think are crucial to the success of an introductory ethics course, one most likely offered in the first professional year.

Active Participation

For the course to have any chance whatsoever of influencing the future behavior of a student, it must be one in which the learner is an active participant. Problems of ethics and professionalism do not have concrete answers, so relying on the traditional didactic lecture approach is a mistake. Memorization has a much lesser place in such a course than in others. Instead students are encouraged to gather, analyze, and assess information, and to test their ideas and reasoning against those of others, because the most effective learning occurs when the students think things through for themselves.

Critical Thinking

The form of participation that is most effective is critical thinking. Richard Paul defines critical thinking as "thinking about your thinking while you're thinking in order to make your thinking better."¹ Though your first reaction may be to mentally ask, "What?" and your second to smile at this peculiar repetitive-sounding definition, read it again.

The first time I read it—after asking "What?" and smiling—I was immediately reminded of similar advice I was given about the proper way to chair a meeting. I was told that a chair should pay attention to both content and process. As a nonchair participant you are customarily only aware of content; however, as chair you must keep abreast of the discussion, but are also obligated to pay attention to things

such as who is participating and who is not, because an effective chair makes sure everyone is involved; the chair must be aware of such things as when the discussion has become repetitive and be ready with strategies to move things forward. Richard Paul's definition urges you to do the same sort of thing while you are thinking—pay attention to the process; maintain certain attitudes, ask yourself specific questions.

As an instructor interested in fostering critical thinking your goal should be to teach students *how* not *what* to think. This is especially true in studying ethics, where indoctrination is itself unethical. A logical initial goal is to distinguish rational thought from emotional reaction. The recognition of self-interest, intolerance, and the unthinking acceptance of other's views are important steps in the process of critical thinking. There are a number of questions critical thinkers should be asking. Richard Paul lists thirty-five.² Some of these are:

- Thinking independently
- Developing insight into egocentricity or sociocentricity
- Exercising fair-mindedness
- Exploring thoughts underlying feelings and feelings underlying thoughts
- Developing intellectual humility and suspending judgment
- Refining generalizations and avoiding oversimplifications
- Comparing analogous situations: transferring insights to new contexts
- Developing one's perspective: creating or exploring beliefs, arguments, or theories
- Clarifying issues, conclusions, beliefs
- Clarifying and analyzing the meanings of words and phrases
- Evaluating the credibility of sources of information
- Analyzing or evaluating arguments, interpretations, beliefs, or theories
- Generating or assessing solutions
- Reading critically: clarifying or critiquing texts
- Listening critically: the art of silent dialogue
- Comparing and contrasting ideals with actual practice
- Noting significant similarities and differences
- Examining or evaluating assumptions
- Distinguishing relevant from irrelevant fact
- Recognizing contradictions
- Exploring implications and consequences

Socratic questioning is one way in which the instructor can bring critical thinking into the classroom. During Socratic questioning, the instructor introduces the critical thinking processes he or she wants the students to utilize and eventually internalize. That is, the instructor serves as a role model for thinking by asking members of the class to execute critical thinking procedures. This requires the instructor to call on students, not merely relying on those who volunteer, and ask questions. Paul suggests that in any discussion of a belief, statement, or conclusion there are four directions which can be taken.³ These are: conflicts with other thoughts and answers to objections; the origin or source; the implications and consequences; and the support, reasons, evidence and assumptions.

How else could someone look at this issue? How did you come to believe that? If that's true, what else must be true? What evidence do you have? These questions are examples of ways to move the discussion into the realm of Socratic questioning by causing students to consider competing interpretations and theories, question assumptions, test reasons, develop hypotheses, extrapolate implications, and formulate likely objections. Classroom activities which feature critical writing, critical listening, and critical discussion are of enormous benefit. For example, asking a student to restate what another one said and then whether he agrees with it is a way to ensure critical listening. Learning methods can include such techniques as group discussion, whole-class discussion, short essays which are analyzed and discussed in small groups, debates, and the technique of structured controversy.⁴

Part of this unit is devoted to the evaluation of an ethical argument.⁵ Four common logical traps (informal fallacies of logic) are presented and discussed with examples: illicit appeal to authority, appeal to emotion, red herring, and bifurcation (false dichotomy). Curtler's 6-step argument analysis procedure is presented:

1. Locate key terms and clarify them if necessary
2. Find the main conclusion: What's the point?
3. Look for argument support
4. Look for fallacies
5. Evaluate the argument: Try to falsify
6. What's left? Where do we stand?

With an understanding of some common fallacies and armed with the 6-step procedure, the students are asked to evaluate and formulate ethical arguments. These procedures are used frequently in the remainder of the course.

A major advantage of using the argument evaluation approach is that it leads directly to a number of specific critical thinking exercises. Learning critical thinking skills is not only useful to the student's study of ethics, but will carry over into other courses, into patient care, and into practice.

Characteristics of a Profession

In this discussion, ethics and professionalism will be treated somewhat separately as they are distinct topics, but they have some important points of intersection, points which can be used to an advantage in the course I'm discussing. For example, some of the most important ethical obligations of a health professional are due to the fiduciary relationship (trust) that must exist between the patient and the doctor. These fall into the special obligations category of ethical responsibility. The consideration of the fiduciary relationship is best introduced as part of the consideration of what makes some occupations professions, which leads to the defining characteristics of a profession.

A significant amount of work has been done on these and other issues which relate to the sociological aspects of professions. There are a number of articles that list the most important characteristics of a profession.^{6,7,8} Millerson analyzed the characteristics collected by 21 sociologists and created a grand summary. In addition to the trust required for an effective patient/doctor relationship, features such as extensive education, a skill based on theoretical knowledge, credentialing, professional organizations, a strict code of ethics, and altruistic service with an absence of self-interest appear on most lists. It is instructive to ask which of these characteristics typify optometry and which don't, and why? The next major topic in the course, that of optometric history, will help answer some of these intriguing questions.

Dr. Edward Pellegrino writes persuasively of the centrality of trust in the patient/doctor relationship.⁹ Indeed, patient autonomy, one of the principles of professional ethics that

has grown in importance recently, gains some of its currency from the trust implicit in the patient/doctor relationship. Pellagrino attributes distrust to increasing malpractice litigation, the commercialization of health care, advertising and entrepreneurialism, the impersonality of large prepayment plans, and the rise in lucrative specialization. These provide interesting and provocative topics for discussions.

There is also controversy about the nature of professions; not all those examining professions are convinced that they are what they claim to be.¹⁰ The "functional theorists" view the professions as useful and necessary, and a deterrent to both a marketplace or state-controlled collective orientation. However, the "conflict theorists" regard the professions as "harmful monopolistic oligarchies."¹¹ The "conflict theorists" do not accept that the professions are dedicated to public service; rather they see the professions as an organized interest group seeking money, power, autonomy, and prestige. They concede that some of the characteristics of a profession which the functionalists posit are correct, but feel that they are used to create a false picture. They warn that the real goal of an occupation aspiring to professional status is the establishment of a monopoly over a service and control of a market. They also believe that the ethical standards to which the professions claim they adhere are nonexistent, and in most instances serve mainly to protect the profession's self interest, economic and otherwise. Topics such as these understandably generate lively class discussion.

The formative influence of religious principles and of gentlemen's codes of honor on early professional codes of ethics are discussed. The Hippocratic Oath and its shortcomings are analyzed. The codes of ethics of various professional organizations are compared and contrasted, including those of the American Optometric Association, the Association of Schools and Colleges of Optometry, the Yale Medical School, the American Medical Association, and the American Dental Association.

History of the Profession of Optometry

It is clarifying to follow the preceding discussion of the characteristics of

a profession with a consideration of the founding of optometry and its establishment as a profession. The evolution of optometry from dispensing opticians to refracting opticians to its current-day status of an independent primary-care health profession accounts for several of its unique features and explains why it possesses certain characteristics to a high degree and others to a lesser extent. Optometry's origins as a business and the continuing problem of being associated with the sale of materials are crucial to anyone's understanding and appreciating the profession today and the problems its practitioners face. The early decision that the profession should not be "medical" in orientation set the stage for the developments of the last twenty-five years during which optometry has moved into the health care mainstream. The profession's origin and early form has determined the issues it has encountered and the direction of its growth for the last one-hundred years, and these, in turn, have defined the ethical and moral issues faced by its practitioners.

In addition, every profession has its heroes—those who have unselfishly contributed, battled, and sacrificed so that the profession could develop and flourish. Learning about individuals such as Prentice and Cross, and others, helps develop professional pride and can serve as a catalyst for the virtue-based behavior befitting a health professional.

Principles of Biomedical Ethics

The central topic in the course is that of ethics, specifically normative ethics, which according to Beauchamp and Childress is an inquiry that answers the question "Which general norms for the guidance and evaluation of conduct are worthy of moral acceptance and why?"¹² There are, of course, many valid and effective ways to proceed. In the course I teach I begin with a consideration of ethical theories such as utilitarianism (consequence-based theory) and deontology (obligation-based theory). A case study involving the microallocation of health care is used to stimulate critical thinking about the strengths and weaknesses of these two approaches.

Subsequently, virtue-based theory, care-based theory, and casuistry (case-based theory) are introduced.

Classroom activities and written assignments have been devised for the purpose of stimulating critical thinking about the appropriate application of these theories to real problems to devise a moral course of action.

Then the principles of autonomy, nonmaleficence, beneficence, and justice are explored.¹³ These principles have been found to be particularly useful in biomedical ethical considerations, and have recently been referred to as principlism. Case studies requiring individual response, small group response, or whole section response are used in this section.

Ethical Problem Areas

Ethical issues that have particular relevancy to the provision of patient care have been singled out for closer inspection. These include truth telling, confidentiality, informed consent, the reporting of impaired or incompetent colleagues, problems arising from the particular practice setting, and some relatively new issues posed by managed care. The methods used are the ones already discussed, with critical thinking and activities that engage the students playing major roles. These issues provide excellent material for meaningful case studies.

The Use of Case Studies

It is important to use case studies in an ethics course. Those I use are written in the manner of short stories, using third-person or multiple viewpoints, rather than in a narrative or documentary style, to draw the students in and have them identify more strongly with the point-of-view character. Case studies written in the fashion of fiction can "illuminate the human condition" and reveal the inner thoughts of characters, making the case realistic, compelling, and instructional. An example of one of these, "In Sickness and in Health," appears in the appendix; it is read and discussed at the first class meeting. Questions used with this case are also included, but are not provided to the student; they are used by the instructor to initiate and guide Socratic questioning.

Ethical Problems of Students

Some time in the course should be set aside for a consideration of the ethical problems of students: prob-

lems such as the cheating and reporting of classmates, and ethical problems students face in clinical training both in on-campus clinics and in outreach patient care activities. Certain situations crop up again and again and this a good time to ask the students to consider how to handle them.

Summary

A number of the features that can profitably be included in a first course dealing with biomedical and professional ethics have been considered. In order to have the course change behavior, involving the students, stimulating critical thinking, and the use of case studies are all recommended. In addition to these learning methods, general content material was suggested, including the characteristics of a profession, the history of optometry, principles of biomedical ethics, and ethical problems of students.

Looking beyond this first course, it will be necessary to introduce ethics into the rest of the curriculum, particularly into the clinical courses and experiences, for if this type of thinking is not put into practice it will fade. This can be done on a daily basis, in clinical seminars, and through the use of ethical grand rounds. It does necessitate that the clinical faculty, both on- and off-campus, have some familiarity with ethics and with what is taught in the course.

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Appendix

In Sickness and in Health

A chill wind sent the last of the autumn leaves skittering noisily across the blacktop parking lot like brittle crabs. There'll be snow soon, thought Dr. Hunter Ramsey, who shivered as he walked slowly from his car toward his office. He'd had a bad night's sleep and the cold that had kept him awake showed no signs of lessening its grip. The decongestant that he'd taken a little over an hour ago was already wearing off. It promised to be a long day. He paused at the outer door to his optometric office and dabbed at his nose with a handkerchief.

Inside he stopped at the reception desk and checked with Lucy. You might know it, he thought, the appointment book was full today. And the first patient was due in ten minutes. Stifling a sneeze, he asked Lucy to bring the files for the morning's patients back to his office.

"Sounds like your cold's gotten worse," Lucy said.

"Yeah, last night it came on full force. I feel like a zombie. The drugs I've taken don't help."

He continued on back to his office where he hung up his coat and put his briefcase in its usual spot next to the credenza behind his desk. He slipped on a clinic jacket and picked up a cup and took it up the hallway to the small room that served as a staff lounge. There he poured a full cup of hot coffee from the decanter sitting on the Mr. Coffee and quickly took a burning sip. His throat had become sore in the night and the hot liquid soothed it.

Minutes later, back in his office, Lucy came in with a handful of patient records.

He took them from her and said, "I may need you, or one of the staff, to run down to Johnson's Pharmacy and get me some throat lozenges. The kind with the analgesic. And some decongestants."

Lucy started out of the room, then stopped and turned back. "Dr. Ramsey, it's not really my place to say anything, but . . . do you think you

should see patients when you have such an active cold? If it were me, I wouldn't want to pick one up. Especially just before the holidays."

He flipped open the record on top and spread the sheets inside, speaking without looking up, "Oh, I'll just stay out of their faces and it's only a cold anyway. It's not gonna kill anybody. We're down this month and I don't want to try to reschedule. Might lose some of them."

He had a big mortgage with the new house he and Carol had bought, and Christmas always strained their budget.

Lucy shrugged and left him alone with the files.

Class Discussion

(used as a guide by the instructor)

I. Lead Question: What would you do if you were in Dr. Ramsey's place? Additional Socratic question: What other courses of action could Dr. Ramsey have taken?

Possible Answers: Not seeing patients today; informing patients of the situation and letting them decide; wearing a mask (not effective with a virus); the same as Dr. Ramsey in the story.

If a student responds that he would do what Dr. Ramsey did, then follow-up with this Socratic question: What if one of the patients was an 83-year old with a history of heart trouble?

II. Socratic question: What moral issues are at conflict in this case? Answer: Patient well-being versus self-interest.

This is an important question which I ask about all ethical problems and dilemmas encountered in the course. By the end of the semester, it makes a lasting impression on the students that self-interest is an opposing issue in so many instances.

III. Socratic question: What about the "slippery slope"?

What about cases in which the illness is more serious, like the new more resistant strains of tuberculosis, or AIDS?

What about prescribing when you aren't really certain the patient will benefit, in order to maintain or increase your income?

Slippery slope arguments are ubiquitous in ethical thinking and this is a good way to introduce them and foster a discussion of their strengths and weaknesses. ■

Editorial

(Continued from page 106)

riculum, but in a more subtle "hidden curriculum" operating within the classrooms, hallways, and within the very structure of training institutions.⁵ They describe a culture of medicine which begins even before students are admitted to medical school during the admissions process and which continues to transmit a distinctive medical morality to its trainees.

A similar dynamic is functioning in the schools and colleges of optometry and the committed efforts of all members of the academic and profes-

sional optometric community will be necessary if this culture is to be transformed into one that integrates ethical principles into the daily life of optometric training institutions and into the profession itself. The task is great, and it certainly will not be accomplished overnight, but failure to meet the challenge will carry a heavy price. ■

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ASCO Meeting Calendar 1997

September 1997

25th-28th — Clinic Directors/Administrators SIG Meeting (Ft. Lauderdale, Florida)

October 1997

16th — Executive Committee (Chicago, Illinois)

17th — ASCO Board of Directors Meeting (Chicago, Illinois)

December 1997

12th — ASCO/AOA Executive Committees (San Antonio, Texas)

12th — Development Directors SIG (San Antonio, Texas)

13th — Continuing Education Directors SIG (San Antonio, Texas)

14th — Residency Educators SIG (San Antonio, Texas)

Date to be determined — ASCO/Academy Symposium on External Clinical Training (San Antonio, Texas)

March 1998

20th — Executive Committee (Houston, Texas)

20th-22nd — Critical Issues Seminar (Houston, Texas) (tentative)

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Priority Conditions as a Basis for Basic Science Course Content

Steven H. Schwartz, O.D., Ph.D.

Abstract

The content of basic science courses in the optometric curriculum has largely been driven by the academic traditions of these basic science disciplines. Because the amount of material that is covered in the optometric curriculum continues to increase, it is necessary to consider alternative curricular strategies that would permit the identification of clinically relevant basic science concepts. The ASCO Curriculum Model, which establishes clinical priority conditions and derives underlying concepts and learning objectives from these priority conditions, provides such a strategy. This paper shows how basic science course content can be derived from clinical priority conditions. Examples of priority conditions, concepts, and learning objectives are given from the recently revised Sensory Aspects of Vision Basic Science Curricular Track.

KEY WORDS: ASCO

Curriculum Model, basic science course content, priority conditions, sensory processes

Introduction

A fundamental question that confronts each of us who teaches basic science courses in the professional curriculum regards content. What should be included in the course and what should be excluded? Given the rapidly increasing knowledge base that constitutes the basic sciences, this is becoming an ever-increasing dilemma.

The traditional approach has placed an emphasis on teaching basic science concepts, principles, and facts that are, for the most part, defined by the academic traditions of the discipline. In many cases consideration is given to clinical conditions encountered in practice, but these conditions are not the driving force behind the formulation of the course content.

An alternative approach is to identify clinical conditions (referred to as priority conditions) and to work backwards from these conditions to derive fundamental concepts and learning objectives. This approach ensures that basic science concepts for each identified clinical condition are included in the course content.

Dr. Schwartz became vice president and dean for academic affairs at the State College of Optometry, State University of New York on July 1. Previously, he was vicepresident for academic affairs at Southern College of Optometry. He is a member of ASCO's Academic Affairs Committee.

Likewise, all basic science concepts are linked to previously identified clinical conditions. If a sufficient number of diverse clinical conditions are identified, it is possible to construct a broadly based, clinically relevant, basic science foundation.

The establishment of priority conditions and associated concepts and learning objectives was the focus of the 1992 Curriculum Conference held in Denver, Colorado^{1,2}. During this meeting, curricula were drafted for the various basic science tracks (e.g., human biology and systemic conditions, sensory aspects of vision, oculomotor aspects of vision, etc.). The curricula were published in 1995 as the ASCO Curriculum Model, and four discs containing the database were sent to each of the schools and colleges of optometry. Over the next few years, these curricula will be refined by committees of specialists in the various basic science areas.

Over the past year, members of ASCO's Academic Affairs Committee have expressed concern that individual schools and colleges of optometry were not using the ASCO Curriculum Model as they make curriculum changes. This paper shows how basic science course content can be derived from priority conditions. Examples are given from the Sensory Aspects of Vision Basic Science Curricular Track that Dr. David Lee, Dr. David Corliss and the author formulated in the summer of 1995.

Formulation of a Course or Track

Priority Conditions

The various priority conditions selected for the Sensory Aspects of Vision Track are given in Table 1. These are clinical conditions that have a manifestation as an alteration in visual function. Certain of these conditions are of high prevalence (designated as *H*), while others are less frequently encountered in optometric practice (designated as *L*). Conditions designated as having high educational value are labeled *H*, while those of lesser educational value are denoted by *L*.

Concepts

One or more basic science concepts (or principles) underlie each of the priority conditions. Table 2 lists certain concepts that were identified for the priority conditions of amblyopia and glaucoma. It is assumed that the

concepts underlying a priority condition constitute a foundation for the rational clinical management of the condition. Note that the concepts listed in Table 2 relate only to sensory aspects of vision. Concepts relevant to other basic science disciplines would be included in the curricula for those disciplines.

Learning Objectives

Mastery of concepts and principles is defined by the learning objectives that are established for those concepts and principles. Learning objectives — in essence behavioral objectives — are defined in terms of what the student must be able to *do* at the conclusion of the course. Tables 3 and 4 give examples of learning objectives that were established for the concepts that underlie amblyopia and glaucoma. Note the utilization of action oriented verbs (e.g., describe, explain, define, and devise) in the formulation of the learning objectives.

Application of The Model

In the area of sensory aspects of vision, as in other basic science areas, content is often driven by the academic traditions of the discipline rather than the demands of clinical practice. The identification of priority conditions, and the derivation of concepts and learning objectives from these priority conditions, allows the formulation of basic science courses that are clinically relevant. Concepts of high clinical relevance are emphasized, while concepts of lesser clinical relevance are de-emphasized.

As the profession evolves, the priority conditions will change, leading to modifications in the content of the basic science curricula. For example, the exposition of certain neurological priority conditions (e.g., glaucoma, lesions of the sensory pathways, neuritis, papilledema, agnosia, etc.) derives from concepts traditionally considered to be the purview of neurology, rather than vision science. Consequently, models of the sensory aspects of vision may need to place a greater emphasis on the underlying physiology and anatomy than has been customary.

In the course on monocular sensory processes taught at Southern College of Optometry, the establishment of priority conditions and related concepts has lead to a more clinically oriented course. For instance, the inclusion of material regarding parvocellular and magnocellular

pathways, blue cone visual fields, and motion detection, and the relative emphasis that is placed on these concepts, are largely driven by the priority condition of glaucoma. Students' interest and enthusiasm are easier to capture when basic science topics are linked to clinical conditions.

It is conceivable that a basic science curricula based on priority conditions could be narrow in scope and not provide a sufficiently broad background. However, this is unlikely to be a problem in light of the very broad list of priority conditions in Table 1, each of which is traceable back to a rich foundation of basic science concepts.

In summary, a practical strategy for instructors and institutions to come to terms with the ever-expanding basic science knowledge base is to derive content from conditions of clinical rel-

evance. Importantly, such an approach lends itself to a better integration of basic science and clinical concepts and, hopefully, a greater appreciation of the importance of basic science issues by our students. ■

Acknowledgments

I would like to thank Drs. Anthony Adams and David Lee for their thoughtful comments on an earlier version of the manuscript.

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Table 1
Priority Conditions Identified for Sensory Aspects of Vision

Priority Condition	Prevalence	Educational Value
Achromatopsias (Monochromatism)	L	H
Agnosias	L	H
Amblyopia	H	H
Aniseikonia	L	H
Binocular sensory dysfunction	H	H
Brain lesions	L	H
Cataract	H	H
Chromatopsia	L	L
Color deficiencies	H	H
Drug Toxicities	L	L
Floaters	H	L
Glaucoma	H	H
Macular edema	H	L
Normal aging	H	H
Nutritional deficiencies	L	L
Optic neuritis	H	H
Papilledema	H	L
Reading disorders	H	H
Refractive errors	H	H
Retinitis Pigmentosa	L	H
Vascular headaches	H	L
Visual pathway lesions	L	H

Table 2
Concepts Associated with Two Priority Conditions

Amblyopia	Glaucoma
Visual processing in striate cortex	Increment thresholds
Neural basis of stereopsis	Illumination and retinal sensitivity
Functional architecture of striate cortex	Threshold
Normal development of vision	Parvocellular and magnocellular pathways
Plasticity of the visual system	Blue (S-cone) visual fields
Etiology	Temporal transfer function
Scientific basis of treatment	Pattern ERG
Meridional	Motion detection

Table 3
Examples of Concepts and Learning Objectives for Amblyopia

Concept:	Neural basis of stereopsis
Objective:	Describe the receptive field properties of cortical disparity detectors, how these cells code depth, and how they are affected in amblyopia.
Concept:	Functional architecture of striate cortex
Objective:	Describe the organization of the striate cortex into ocular dominance and orientation columns and how this organization is disrupted in amblyopia.
Concept:	Normal development of vision
Objective:	Describe when the visual sensory and motor functions such as visual acuity, color vision, temporal vision, motion detection, stereopsis, and eye movements reach adult levels of maturity.
Concept:	Plasticity of the visual system during the critical period
Objectives:	Explain the mechanisms whereby manipulation of the child's visual environment early in life— during the critical period—leads to both abnormal neural development and abnormal perception in the adult. Recall that after the critical period has ended the visual system's susceptibility to environmental manipulations is greatly reduced.
Concept:	Etiology
Objective:	Explain the developmental causes of amblyopia (occlusion, anisometropia, strabismus), the cortical mechanisms of amblyopia (competition for cortical cells), and the perceptual disruptions associated with amblyopia (reduced monocular acuity, reduced stereopsis).
Concept:	Scientific basis of treatment
Objective:	Devise treatment plans for various cases of amblyopia such that these plans are based on an understanding of the cortical nature of amblyopia as revealed by deprivation studies.
Concept:	Meridional
Objective:	Define meridional amblyopia and explain its cortical basis.

Table 4
Examples of Concepts and Learning Objectives for Glaucoma

Concept:	Increment thresholds
Objectives:	Describe how increment thresholds vary across the field of vision to form the hill of vision and describe how they are affected in glaucoma and why.
Concept:	Illumination and retinal sensitivity
Objective:	Define increment thresholds in terms of Weber's Law and describe their use in perimetry for the diagnosis of glaucoma. Describe the effect that reduced retinal illumination, such as is produced by cataract or miosis, will have on the visual field testing.
Concept:	Threshold
Objectives:	Describe the statistical nature of a threshold. Explain how signal detection theory can predict how a patient's criteria can affect threshold. Compare and contrast the various psychophysical methods used to measure thresholds.
Concept:	Parvocellular and magnocellular pathways
Objectives:	Describe the anatomy and neurophysiology of parvo- and magnocellular pathways. Describe the various psychophysical strategies that may isolate these pathways. Describe the apparent vulnerability of the magnocellular pathway to glaucomatous damage and explain the implications of this vulnerability for the development of tests to aid in the early diagnosis of glaucoma.
Concept:	Blue (S- cone) visual fields
Objective:	Explain how S-cone visual fields are performed and why these visual fields may be more sensitive to glaucomatous damage than standard visual fields.
Concept:	Temporal transfer functions
Objective:	Describe how a temporal modulation transfer function (TMTF) is measured, its neural origins, and the effects that glaucoma has on the TMTF.
Concept:	Pattern ERG
Objective:	Describe the stimulus used to generate the PERG, the retinal origins of the PERG, and its utility in the diagnosis of glaucoma.
Concept:	Motion detection
Objective:	Describe the stimuli used to measure motion detection thresholds and the changes in motion detection that occur in glaucoma and the presumed basis for these changes.

Computer Software Reviews

Fluorescein Angiography Primer: An Interactive Case-Based Review

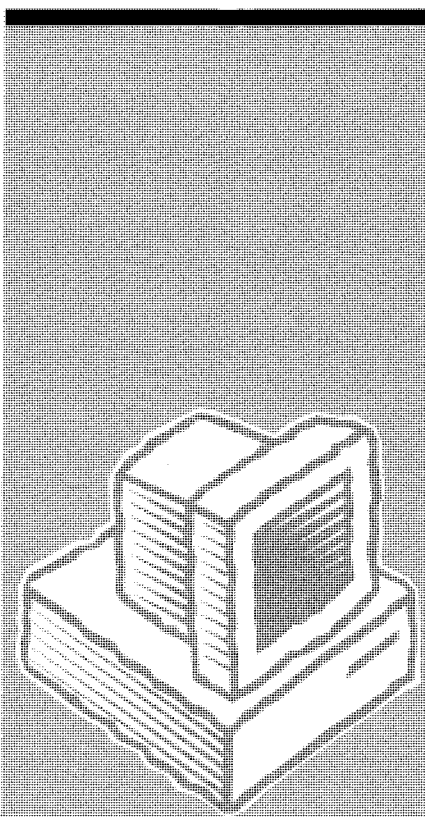
Lifelearn Eyecare, School of Optometry, University of Waterloo, Waterloo, Ontario, Canada. \$125 U.S. dollars.

Fluorescein Angiography Primer was developed by D.M. Deupree, M.D., and R. Potvin, O.D., at the University of Waterloo School of Optometry to facilitate independent study and review of the concepts and interpretation of fundus fluorescein angiography. Such an atlas requires a substantial collection of the photographs. With the accelerating costs of reproducing quality printed images (color or black and white), CD-ROM technology has allowed the developers to print 28 cases of ocular disease, each complete with a brief case description, relevant color fundus photograph, red free photograph, fluorescein angiogram, consisting of frames from the early, middle and late angiographic phases, and a brief explanation of the interpretation and management.

The authors have succeeded in producing an IBM/PC compatible (Macintosh version available) computer program that possesses quick and easy installation, a user friendly interface, high resolution images that can be enlarged for detailed viewing, capable of providing a review and brief explanation of the concepts and interpretations of intravenous fundus fluorescein angiography.

The minimum system requirements for running the program are CD-ROM, double speed or higher, Windows 3.1 or higher, minimum of 8 MB of RAM, 120 MB free hard disc space and a video monitor capable of 800 x 600 resolution with 16,000 colors capability.

The CD contains over 144 still images, divided by case. Each case begins by presenting three photographs (one of the early, middle and late phases) of a fundus fluo-



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rescein angiogram with pertinent text in a dialogue box positioned below. The dialogue box is used to convey case data or salient information. ARMD, AION, BRAO, BRVO, CME, SRNVM, POHPV, DR and CMVR are among the included studies. The choice-based format allows the reviewer to enjoy the program as a guided tour, browse and choose from among 28 cases or engage in a challenging multiple choice quiz.

The quiz's options allow the viewer to choose the desired number of questions and format. The multiple response option allows the participant to choose again if the initial response is incorrect. The annotated option allows the test taker to receive immediate feedback from the dialogue box. The graded exam logs the number correct and incorrect and provides a percentage.

I enjoyed the program and found it to be worthwhile as a teaching tool and a method of review.

Reviewer: Dr. Andrew S. Gurwood
Pennsylvania College of Optometry

Automated Perimetry: An Interactive Primer.

Dr. John Flanagan, Dr. Yvonne Buys, Dr. Graham E. Trope and Dr. Rick Potvin, Lifelearn Eyecare, Waterloo, Canada, 1996, \$120.

The technology associated with computer-based learning and CD-ROMs is just starting to surface in optometric literature with this CD-ROM, "Automated Perimetry: An Interactive Primer," being the first to deal with automated perimetry. The advantage of a CD-ROM is that large amounts of visual information, such as visual fields, can be displayed easily with excellent resolution. Indeed, a primer on visual fields is a marvelous use of the medium. Textbooks on perimetry are constrained because each visual

field would take up a lot of space on a page. Thus when fields from each eye are displayed, a great deal of room is required and when multiple fields are used to illustrate change or progression over time, publishers often balk citing space limitations.

The solutions to this problem are often poor; either the fields are cropped or reduced in number. In this CD-ROM primer, there are no page constraints so that multiple fields using different printout displays, analytic methods and supporting information are shown with the limiting factors not the material presented but rather the speed of your CD-ROM, computer and size of the monitor. Also, there is a need for a new method to teach perimetry. Visual fields are difficult for many doctors to understand and become comfortable with. They appear simple to comprehend at first glance with the grey scale primarily used for analysis. Unfortunately the grey scale is misleading and greater inspection using a watchful eye along with experience and intuition adds to the field's interpretation. Thus, a primer that optometric students and optometrists can use on their own time and at their own pace to learn more about perimetry will make an invaluable collection to their library.

Automated Perimetry: An Interactive Primer is made up of several components. The introduction to perimetry is a nice review of how fields are performed and how each field is analyzed and interpreted. Single and multiple field analysis is discussed in detail with multiple examples utilized. The highlight of the CD-ROM is the 20 cases displayed. Cases include those on open, closed and secondary glaucoma, compressive lesions of the brain, vascular occlusions, optic neuritis, and head trauma. Also, for glaucoma different cases show glaucoma suspects, as well as examples of mild, moderate and advanced disease. For each case, a brief history is given along with optic nerve photographs and the visual fields. Most cases show multiple fields of each eye including the 10-2 printout. Displays available for review include single field, overview, and glaucoma

change probability printouts. A brief note on the principal field interpretation is given the case synopsis with optic nerve stereo photographs available for many of the cases. In a few of the neurologic cases, CT scans are also shown which adds to the clinical information.

The final piece of the CD-ROM is the 40 question multiple choice quiz which an individual can take for CE credit. The test is scored in real time with the correct answer displayed along with an explanation of the question. While the test was difficult and technical, it was a useful way to gauge how information is assimilated.

This CD-ROM is an excellent way for optometrists to learn about visual fields from some excellent clinicians. In particular, Dr. Flanagan is a British trained optometrist (MCOptom) who has become a world-renowned perimetrist and has excellent credentials to write such a multimedia project. The cases selected are all quite good in that they are similar to ones seen in the office, cover the different stages of glaucoma as well as illustrate conditions that may impact upon the visual field other than glaucoma. This is an excellent learning tool that students, teachers and practicing optometrists will enjoy and learn from though there are some items that can be improved in future editions.

There was little mention on the presenting intraocular pressure (IOP). Information on the IOP would enhance some of the teaching benefits in regards to glaucoma of the CD-ROM. Also, the synopsis of the assessment of the optic nerve and retinal appearance was brief. For some glaucoma cases, only the cup/disc ratio was given. For the secondary glaucomas, slit lamp photos were not available. Again, while this primer is supposed to concentrate on perimetry, a CD-ROM allows other information to be included. For many of the visual fields, I wanted more information in the interpretation section. In cases where multiple fields are available, there was no interpretation given about the overview or glaucoma change probability printout. While the information was available visually, some mention in

the text should have been included for the student to use in noting if their observations were correct. Finally, little information was provided in terms of therapy. Considering that many cases are tracked over several years, adding what occurred when progression was noted would have been quite instructional. As most optometrists are involved with either the therapy or co-management of glaucoma, therapeutic information would be helpful.

In summary, this is an excellent vehicle for students, teachers and practitioners to learn about perimetry. The art of how to interpret single field printouts is illustrated in great detail. While some modifications would improve the pertinence to the management of glaucoma, still the different ways the visual field is affected by different conditions is nicely shown and illustrated. The nuances in interpreting visual fields are done in a forum not available anywhere else. After reviewing this CD-ROM, the student will learn a great deal about perimetry, which will only enhance the patient care provided.

Reviewer: Dr. Murray Fingeret
St. Alban's VA Center
St. Alban's, New York

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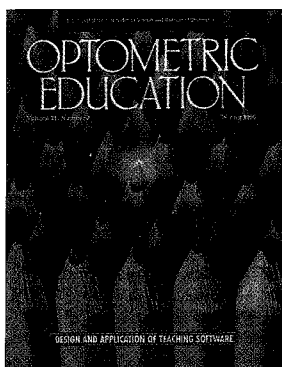
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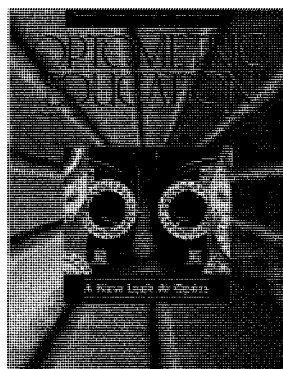
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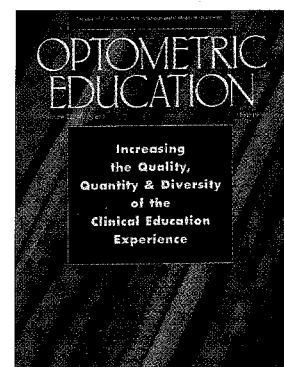
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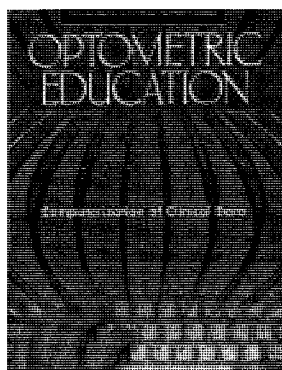
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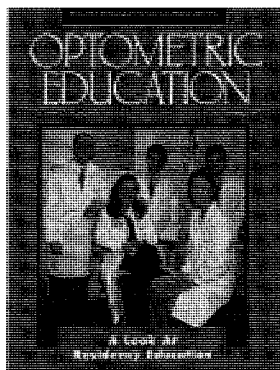
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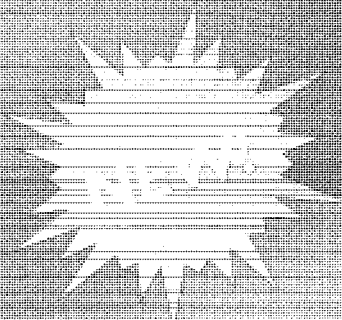
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