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## Is history repeating itself? The future of opticianry and its effect on optometry

### Abstract

This article discusses the current issue of opticians and certified ophthalmic technicians in the United States and sight testers in Canada. The background of this topic will be discussed as well as a review of the legislation that has occurred to see where the issue stands at this point.

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Robert L. Yolton

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**IS HISTORY REPEATING ITSELF?  
THE FUTURE OF OPTICIANRY AND ITS EFFECT ON OPTOMETRY**

**By  
TAMIS. ANDERSON, B.A.**

**LINH Y LAM, B.S.**

**A thesis submitted to the faculty of the  
College of Optometry  
Pacific University  
Forest Grove, Oregon  
for the degree of  
Doctor of Optometry  
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**This article discusses the current issue of opticians and certified ophthalmic technicians in the United States and sight testers in Canada. The background of this topic will be discussed as well as a review of the legislation that has occurred to see where the issue stands at this point.**

**Acknowledgments:**

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**We would also like to thank the students of Pacific University College of Optometry who took the time to fill out our survey.**



## **Introduction**

Do optometrists still want to refract? A generation ago, optometry was solely based on refraction. Back then, the students entering into optometry school predominantly had degrees in physics and other hard sciences. The current generation of optometry students has an overwhelming number of life science majors. Therefore, the trend to other aspects of optometry is definitely in the making. What will happen to the future of optometry? What options does optometry have when others are waiting in the wings to take refractions away? There seems to be three options for optometry at this point. They can sit back, do nothing, and watch refractions disappear like youth slipping away from the middle-aged. Optometry can hand refractions to other professions on a silver platter or lastly, optometry can take control of the situation and work with others who would like to refract to come up with a solution that pleases both professions.

## **Background Information**

The field of optometry was started back in the early 1900's when a group of scientists trained in physical and physiological optics got together and decided that ocular refraction was a 'human' service that needed to be addressed.' These scientists became a group known as opticians. In fact, in 1872, two of these opticians at the Wills Eye Hospital in Philadelphia taught physicians how to refract. Since there was reluctance on the part of the physicians to **refract**, opticians realized the need and further developed their skills.<sup>2</sup> Therefore, they worked to obtain legal recognition of the profession, and thus the field of optometry was born. These optometrists were there solely to provide optical correction for any optical defects found and to only recognize if any abnormalities of the eye were present.<sup>1</sup>

Now fast forward to today, the beginning of the 21<sup>st</sup> century. Optometrists, through much effort, have transformed the field of optometry into what is now a more medical based field. Not only are we recognizing abnormalities, we are actually diagnosing and treating disease. The field of optometry has come a long way, but where does that leave the root of optometry? Optometry began as a profession based on **refractions**. Have we **left** this behind and are we allowing others to take over an area that was most dear to us back in our beginnings?

This article serves to discuss the current issue of opticians and other professions refracting in the United States. We will discuss the background of this topic, review the legislation that has occurred and see where the issue stands at this point.

Legally, optometrists and medical doctors are the only professions allowed to refract. However, other individuals have been refracting for years now, but just under the supervision of a licensed optometrist or ophthalmologist.<sup>3</sup> As health care in the United States is changing, the field of opticianry is beginning to emerge as a unified field wanting the rights to refract independently of an optometrist or ophthalmologist. In fact, there are these 'refracting opticians' all over the world. Canada has just become another

country in which opticians are allowed to refract under certain circumstances. Is this a new trend and if so, will it spread south to the United States?

### Survey of Current Optometry Students

Since the optical industry is starting to change up north, we decided to see where it's at in the states and how it has been perceived by the profession of optometry. We surveyed optometry students at Pacific University College of Optometry about the idea of opticians or other professions doing refractions. We distributed a survey to the first, second, third, and fourth year optometry students. We received 39 responses back from the first year, 31 from the second, 68 from the third year and since the fourth year students are not on site, there were not enough given back to form a conclusion. For all of the questions, we asked them to assume they were five years out of optometry school. One set of questions pertained to how many patients they expected to perform refractions on rather than doing a medically based exam. We also wanted to know if they wanted to do as much **refraction** as they thought there were going to have to do. There was a wide range of answers, but the general trend was that students were expecting to refract *more* than they would like. (Table 1)

	% of time they THINK will refract	% of time they WANT to refract
First Year	64.71% (SD 19.23)	54.14% (SD 19.57)
Second Year	60.34% (SD 22.60)	49.31% (SD 21.37)
Third Year	62.25% (SD 20.21)	51.90% (SD 18.52)

Table 1. Average percentage of time optometry students **think** and want to spend **refracting** five years out of school.

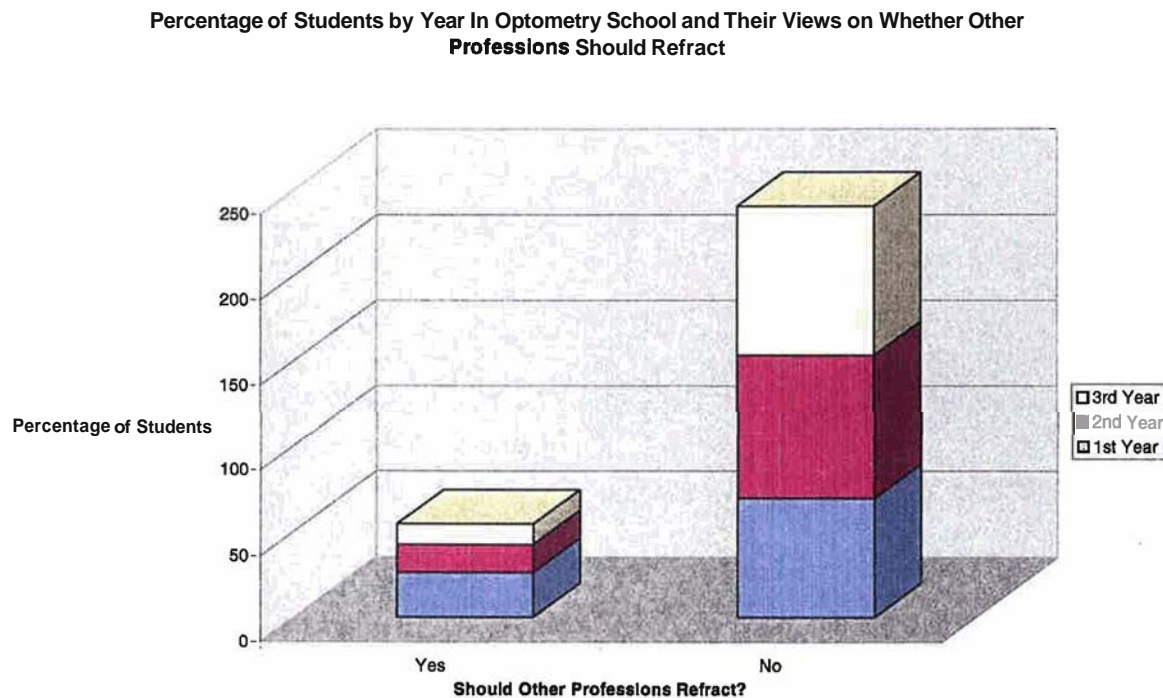
Some might wonder what these students wanted to do besides refracting. With the extra time not working on refractions, most of the students wanted to focus on other aspects of the exam, such as the diagnosis and treatment of disease. But is this really possible? In reality, the average patient coming through our doors will present for an exam without any disease. Only a small percentage of the population will have some type of problem so between ophthalmologists and optometrists is there enough disease to go around?

Another question is why students are so interested in disease. This may have a lot to do with being in the educational environment for so long. Beginning with the first year of optometry school, we have been exposed to many disease classes. Since we have not worked in a real practice as a doctor, there could be an altered sense of what optometry entails. Therefore, the issues we surveyed may not reflect accurately what students will be doing five years out of school. However, since there is willingness for others to refract, this could be a new trend in optometric **mindset**.

Another question posed in our survey was who the students thought would be doing the refractions if they, the doctor, was not going to do them. For the majority of the students who wanted others to do the refraction, they felt that other optometric personnel would be doing them, namely opticians. In actuality, opticians and other professions have been

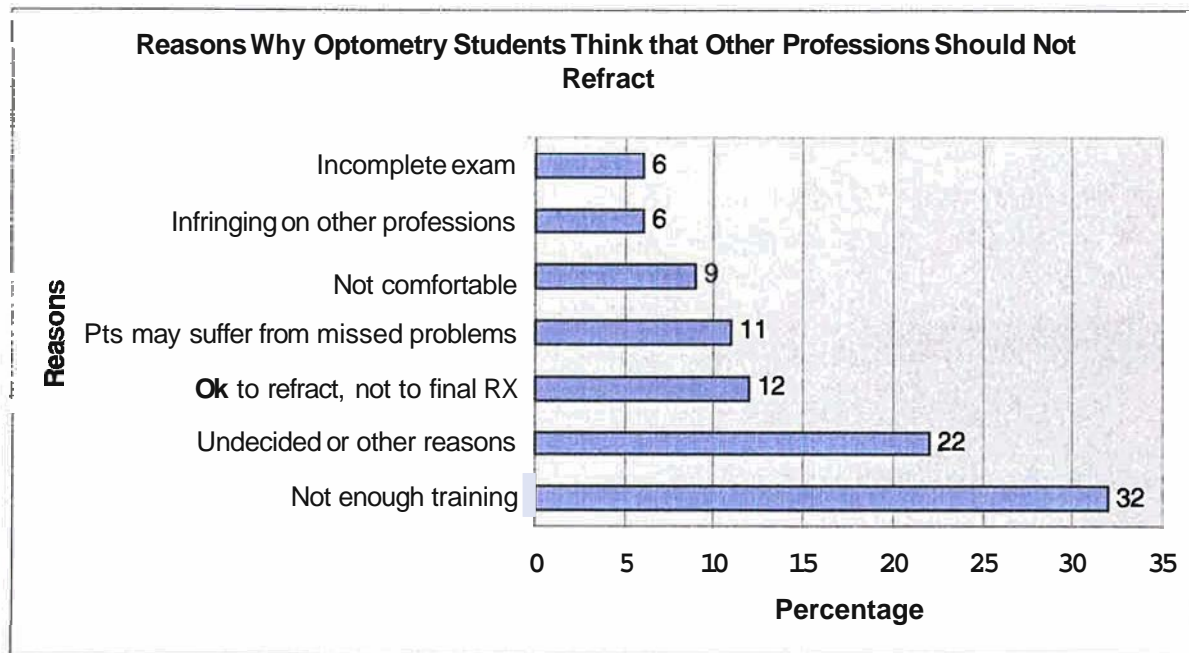
doing **refractions** for a long time now under the supervision of an ophthalmologist or optometrist. Opticians are able to participate in a 100 hour refraction course offered by the Opticians Association of America that provides 'thorough training and experience in vision assessment and subjective **refracting**'.<sup>4</sup>

The real question is if it's a good idea for opticians and other professionals to gain the right to refract independently of ophthalmologists and optometrists. This question was posed to the students as well. (Figure 1) The majority of the students were against the idea and there became fewer positive answers as the year in optometry school increased.



**Figure 1.** Percentage of students by year in optometry school and their views on whether other professions should refract.

There were many reasons as to why students opposed this idea, which are included in Figure 2. For most of the students, they didn't think that opticians would have the proper knowledge and training for **refracting**. One student wrote, "...they might miss underlying structural/functional/behavioral problems they are not trained to find." Another idea was that "...doing the refraction gives me a lot of qualitative information on the patient's ocular health..." while another student commented that "some people think **refraction** equals a comprehensive exam, which isn't the case..." Many just answered that overall it was a "bad idea."



**Figure 2.** Reasons why optometry students **think** that other professions should not refract.

For those students that were in favor of the idea, they stated that "as long as the doctor comes to check the final prescription and determines that it is appropriate" it would be fine. Many who were not in favor of the idea were not completely opposed to other professions **refracting** as long as they were not doing it independent of an optometrist or ophthalmologist.

As the field of optometry is changing and as we are gaining more therapeutic rights, we are becoming more focused on other aspects of optometry, such as treating and diagnosing disease. Are we leaving the door open for other professions to step in and take over what we have left **behind**? If this is the case, who would be the ones taking over and what is it that they want to do?

### **Sight Testers In Canada**

Opticians in British Columbia and Alberta, Canada have been able to refi-act under a licensed ophthalmologist as a sight tester since the early 1990s.<sup>5</sup> A sight tester does the refi-action with automated equipment and allows the patient to get glasses with that new prescription. They also do an ocular health screening at that visit to determine if there are any abnormalities to the **eye**.<sup>6,7</sup> According to a sight tester in British Columbia, he conducts the **refractions**, but the final prescription needs to be reviewed by an ophthalmologist even though the ophthalmologist may not be on site. There are limitations on who can be eligible for these sight-testing procedures based on age and any presence of ocular disease. The socialized health care in Canada sets the age as those over

18 and under 65 years based on coverage for the other age groups already in place. These exams are usually free if the optical correction is purchased at the site, however the prescription is not given to the patient.

### **Certified Ophthalmic Technicians**

In the United States, certified ophthalmic technicians (COTs) have been taught to do **refractions** ever **since** the Vietnam War. This profession is a relatively new one, only being about 40 years old. It was created in the 1960's when ophthalmologists realized the need to have help with eye exams.<sup>8</sup> COTs, working under ophthalmologists, do 'refractometry' which is a term that means a refraction done under the supervision of an ophthalmologist. They are not legally allowed to do the **refraction** on their own and must always be working under someone else's license. We interviewed a certified ophthalmic technician who has been working as a COT ever since 1972 to gain an understanding of his perspective on this topic of other professions doing refractions. When asked whether COT's were interested in gaining the right to **refract** independently, he responded that this profession doesn't seem to have the drive to go on their own and that they are perfectly happy working under a MD's license.<sup>3</sup>

Training in this profession is dependent upon which level you want to be at. There are three levels which include certified ophthalmic assistants (COA), certified ophthalmic technicians (COT), and certified ophthalmic medical technologists (COMT). To become a COA, one must complete a home study course that is sponsored by the **American Academy of Ophthalmology**. COT's are required to finish a two year program while COMT's are required to take a written test and practical exam in addition to completing the two year program.<sup>3,9</sup> Overall, there are over 15,000 certified medical personnel in the United States.<sup>8</sup>

Certified ophthalmic assistants are trained to take medical histories, administer eye medications, instruct patients on how to use their corrective lenses and perform preliminary tests.<sup>10</sup> The duties of a certified ophthalmic technician is to do a whole patient work up which includes case history, visual acuities, refraction, tonometry, visual fields, and administration of the dilating drops. Certified ophthalmic medical technologists also have the same responsibilities but they can specialize in such things as ultrasound, fluorescein angiographies and photography, and become surgical technicians.<sup>3,8</sup>

### **Opticians**

Another profession that potentially wants to gain the right to refract is opticians. Currently, opticians can work for either optometrists, ophthalmologists, or set up their own optical shop and hire a doctor on site. They are trained to fit eyeglasses and contact lenses from prescriptions written by either optometrists or ophthalmologists. They determine what specific lens and frame specifications should be, considering the patient's facial features, hobbies, and occupation. In addition to this, they may also participate in

patient education regarding their eyewear, administrative duties in the office, and help in the fitting of contact lenses.<sup>11-14</sup>

As of now, only twenty-two states require a dispensing optician to be licensed." (Table 2) The licensing allows potential for an increase in earning power as well as a way for the public to recognize that they have a certain competence while also potentially increasing their employment opportunities. As of the year 2000, there were 68,000 positions held by opticians in the United States, in which half of them were working for either an optometrist or an ophthalmologist.<sup>11</sup>

◆ Alaska	◆ New Hampshire
◆ Arizona	◆ New Jersey
◆ Arkansas	◆ New York
◆ California	◆ North Carolina
◆ Connecticut	◆ Ohio
◆ Florida	◆ Rhode Island
◆ Georgia	◆ South Carolina
◆ Hawaii	◆ Tennessee
◆ Kentucky	◆ Vermont
◆ Massachusetts	◆ Virginia
◆ Nevada	◆ Washington

**Table 2.** States That Require Opticians to be Licensed

So why does this profession want to be able to gain the right to refract? In this profession, if you are not working for a doctor, your source of income is when customers come into their optical shop wanting to purchase a **frame**. Most of the time, they would have a prescription (written by an optometrist or ophthalmologist) that needs to be filled. Therefore, their livelihood is dependent upon these prescriptions coming through their doors. So how can they take control and have an influence on their optical business? They need to be able to legally refract on their own, independent of an optometrist or an ophthalmologist. They don't want to depend on people coming in with prescriptions that need to be filled, and the only way to do so is to take **refractions** into their own hands. Once they have this right, they can do a quick **refraction** and supply the customer with both the prescription and the frames.

### **Current Legislation**

According to the mission of the Opticians Association of America it is "to promote and expand **opticianry** by being the single, unified voice of America's opticians. In support of this mission, we are committed to promoting professional stature through leadership, educational opportunities, legislative representation and communication."<sup>4</sup>

The **Opticians** Association of America states that the idea of opticians **refracting** has been around since the 1980's. Their organization plays an integral part in advocating for the expansion in scope of practice for opticians across the nation. Their association put together a refractometry course that provides training in refraction. They realize that this

is not an easy fight, but they are **fully** prepared to take it on and they have a plan of action in place. In fact, on their **website**, it lays out a legislative strategy that members are encouraged to embrace. Several states have already introduced legislation trying to allow opticians to do refractions. One of the first states to do this was Nevada in 1993 however; the bill was met with opposition and did not proceed **further**.<sup>15</sup>

Besides Nevada, there are four other states that have put forth some type of legislation to expand the scope of practice for opticianry with refractions. They are Hawaii, New York, Florida and Washington. Washington was one of the leaders. Washington has 851 licensed **opticians**.<sup>16</sup> During the past five years, the state association has drawn up a plan to make dispensing opticians into **refracting** opticians. They have used the profession of optometry to see how to work with legislation and know what are effective strategies to accomplish their professional goals. There are many reasons why they feel that refraction can be taken out of the comprehensive exam. Many procedures from a more comprehensive medical exam are already done separately. For instance, blood pressure and cholesterol screenings are done routinely outside of the physical exam. The opticians did not find any evidence that these created a false sense of security among **consumers**.<sup>16</sup>

Opticians proposed the following benefits from allowing opticians to refract.

- (1) adds the convenience of "one-stop-shopping" for vision care
- (2) expands the choice of providers
- (3) saves valuable chair time for prescribers
- (4) promotes cost savings for both consumers and prescribers
- (5) allows additional cost containment within the vision care **marketplace**<sup>16</sup>

In 1998, Washington Senate bill 6265 was initiated to **try** to change the laws for dispensing opticians so they could "**perform** eye refraction and modify existing prescriptions to reflect changes in vision." New education requirements would be added to those who are already licensed dispensing opticians. Eighty hours of course work in theory of refractions, anatomy, pathology and knowledge of equipment operation plus a twenty-hour practicum under the supervision of an ophthalmologist or optometrist would certify those dispensing opticians as refracting opticians. Continuing education would also be needed yearly. It was proposed that if a certified refracting optician could not improve vision better than 20/40 in either eye, if there was greater than a two line acuity difference in a child under age ten or if there was a change of more than 2.00 diopters (plus or minus), the patient would need to be referred to an optometrist or **ophthalmologist**.<sup>17</sup> The reason why they chose +/- 2.00 diopters was because a random review of ophthalmology records showed that as much as 70-80% of office visits showed a "modification" or small change to the prescription only and 93% of these were a change of less than +/- 2.00 diopters.<sup>16</sup> Also, it was proposed that a **refracting** optician would only be able to modify the prescription if the patient had an eye health exam within two years for contact lenses and four years for **glasses**.<sup>17</sup> This bill seemed to have it well laid out as to what their plans were and even though it did not pass, a standard of what they wanted for the future was clearly stated.

Not everyone was in favor of these laws to be passed in Washington. Washington State Optometrists Association (WOA) posed the question of public health risks in stand alone refractions. They felt that the patient would have a false sense of security even though they did not have a comprehensive eye exam. Also, the optometrists felt that many people would be unaware of the fact that even though you can see 20/20, there may be something going on in the back of the eye. For example, diabetic retinopathy **often** does not have acuity symptoms until there is a lot of problems going on. If they got a modification to their refraction, this could go undetected for **longer**.<sup>16</sup> A retrospective study at Pacific University was conducted in 1998. Randomly selected charts were reviewed for 100 patients with glaucoma, diabetic eye disease, thyroid eye disease, coronary artery atherosclerosis, retinal tears or iritis. All categories except diabetic eye disease showed 20/30 or better acuity 90% of the time. It was 85% of the time for diabetic eye disease. Therefore, the cutoff of 20/40 does not seem to be reasonable. "

Another factor brought up by the WOA was that there is no logical or medical basis for distinguishing between a 10 year old and an 18 year old. Therefore, the age cut off of 10 years old does not have good reason behind it. They also stressed that no bill should be recommended unless it requires an optician to work under direct supervision of an optometric physician or **ophthalmologist**.<sup>19</sup> Lastly, it is a common principle that the more training one has, the more one may do and be responsible for. Many times an optometrist or ophthalmologist cannot only do just a refraction because they are responsible for the consequences of health **problems**. "How can opticians, with less education, be **free** to do what a doctor cannot?"<sup>4</sup>

Even other opticians do not feel that this law would be the best. They feel that eighty hours of education to become a refracting optician may not be enough. Also, without knowing why the prescription changed, one optician states, "I would have no way of knowing whether it is routine, pathological, or actually intended by the optometric physician or ophthalmologist for reasons only a comprehensive exam would **reveal**."<sup>20</sup>

Other groups that are not in favor of the law in Washington are ophthalmologists and the American Diabetes Association. Both groups feel that it is not wise to separate the refraction from the complete eye **examination**.<sup>21</sup> In addition, the American **Optometric** Association states that "those who may advocate providing a refraction in isolation **from** a complete eye examination are overlooking the fact that the source of blurred vision is not always a refractive **error**."<sup>22</sup> Even though the law did not pass in Washington, it brought about a big debate about the ethical and monetary considerations of this proposal. According to Lisa **Whitmire**, Business Manager from Opticians Association of Washington there is no pending legislation for refracting opticians since 2002.

## **Conclusion**

So where is the future of optometry, ophthalmology and opticianry headed with all the legislation brought about in the past decade? As the Opticians Association of America indicated, they firmly believe and are truly committed that opticians gaining the right to refract is the 'natural and logical' progression for their **profession**.<sup>4</sup> They liken it to the



history of optometry itself. We, as a profession, started off much like opticians. We were concerned **with fitting** the best **eyewear** and giving the best service to the public. As years passed, we as a profession wanted to gain recognition for all that we could do and expand our **scope of practice**. In fact, our efforts have proved successful and we have come a long way since our meager beginnings.

So the key question is whether opticians will be doing the same thing. Five states have already tried to pass legislation on this issue, will there be more? Even though their initial efforts weren't **successful**, it wasn't futile as well. This process is a very long and drawn out one. If the bill doesn't pass initially, it doesn't mean the issue has disappeared. The fact is that this is probably inevitable. Our fields are forever changing. It may take awhile, maybe five, ten, or twenty years but when it does happen, we should be prepared for it. Optometry should not give **refractions** to opticians on a silver platter, neither should we sit back and **do nothing**. Therefore, **optometry** needs *to* "stay **abreast of legislative** happenings in their **state** and remain proactive in **protecting the** profession of optometry."<sup>5</sup> In the end, it should *come* down to giving the **best possible care** to the **patients** and **spending productive** time making sure this happens.

**References:**

1. Normole, Eugene. History of Optometry in its Right to Refract. <http://www.pof.org/refract.htm> Accessed March 5,2003.
2. Professional Opticians of Florida. Evolution of Opticianry-Date. <http://www.pof.org/nhist.htm> Accessed March 5, 2003.
3. Personal interview with Patrick Caroline, Certified Ophthalmic Technician. February 6,2003.
4. Opticians Association of America. <http://www.oaa.org> Accessed February 5,2003.
5. Canadian Opticians Add Glaucoma Testing, Push for **Refraction**. **AOA News**. November 25,2002.
6. Sight Testing. <http://www,opticians.ca/edandtrain/sighttest.htm> Accessed September 6,2002.
7. Northern Alberta Institute of Technology (NAIT). Sight Testing and **Refractometry** Program. <http://www.nait.ab.ca/optical/sightesting.htm> Accessed November 25,2002.
8. Duke University Eye Center. Duke's Ophthalmic Medical Technician Training Program. <http://w.dukeeye.org/newsletters/vision14-1/training.htm> Accessed October 9,2002.
9. Joint Commission on Allied Health Personnel in **Ophthalmology** (JCAHPO). Certification and Recertification, <http://www.jcahpo.org> Accessed October 9,2002.
10. Ophthalmic Assistant/Technician/Technologist. <http://www.flahec.org/hlthcareers/OPHASt.HTM> Accessed October 9,2002.
11. Occupational Outlook Handbook. <http://www.bls.gov/oco/ocos098.htm> Accessed October 2002.
12. Florida Health Careers. Optician. <http://www.fhc.medinfo.ufl.edu/vision/optician.html> Accessed October 2002.

13. Career Center. Optician. <http://www.missouri.edu/~ppcrwww/holland/r/optician.html> Accessed October 2002.
14. What is an Ophthalmologist, Optometrist and Optician. <http://www.clevelandclinic.org/health/health-info/docs/2000/2085.asp?index=8565> Accessed September 6, 2002.
15. Opticians Association of Washington. Legislative Corner. <http://www.oaw.org/Legislation/legislative%20Corner.htm> Accessed January 29, 2003.
16. Optician Refracting Sunrise Review Report. [www.doh.wa.gov/hsqa/sunrise/optic2.doc](http://www.doh.wa.gov/hsqa/sunrise/optic2.doc) Accessed January 2003.
17. Senate bill 6265, State of Washington. 1998 regular session by Senators Wood, **Wojahn** and **Fairley**.
18. Harvey, P.L. Optometry 10: The Eye and Vision in a Changing Environment. <http://spectacle.berkeley.edu/class/opt10/lec2.shtml> Accessed July 5, 2002.
19. Commission on Opticianry Accreditation. <http://www.coaccreditation.com/body.html> Accessed July 5, 2002.
20. American Board of Opticianry National Contact Lens Examiners. [http://www.ncleabo.org/why\\_cert.html](http://www.ncleabo.org/why_cert.html) Accessed July 5, 2002.
21. Department of Professional and Occupational Regulation. <http://www.stateva.us/dpor/indexie.html> Accessed July 2002.
22. The Diagnostic Significance of Refraction. *American Optometric Association*.