

**THE SECTION ON CORNEA AND CONTACT LENSES
DIPLOMATE CANDIDATE'S GUIDE
RESEARCH DIPLOMATE
Revised October 2008**

BECOMING A RESEARCH DIPLOMATE

This guide contains the requirements and the procedures for becoming a Research Diplomate in the Section on Cornea and Contact Lenses of the American Academy of Optometry.

Please note that this guide supersedes all previous information and instructions.

We welcome you as an applicant. We believe that the learning experience you will go through during this process is a rewarding one. We, who have preceded you, have all found it to be so. Not only will you profit from the added knowledge of your studies, but you will also achieve satisfaction in the recognition of your competency. You will also meet colleagues who share mutual interest and concerns from all parts of the world to whom you may refer patients and discuss research with confidence. After you have successfully completed your candidacy, we hope your interest will keep you curious about new contact lens advances and that you will accept new responsibilities and other leadership activities in lecturing, writing, and teaching within the section and among our colleagues.

To apply as a Diplomate candidate, you must:

1. Be a Fellow in good standing of the American Academy of Optometry.
2. Submit an application form (see attachment) indicating your desire to become a Diplomate of the Section. The application should be returned prior to June 15th of the year in which any part of the requirements will be undertaken with an application fee of \$100 (made payable to the AMERICAN ACADEMY OF OPTOMETRY) and a photograph of yourself to:

Diplomate Award Program

Section on Cornea & Contact Lenses
American Academy of Optometry
6110 Executive Blvd., Suite 506
Rockville MD 20852 USA

Requirements for Research Applicants

- I. Purpose
- II. Qualifications
- III. The Scientific Paper
- IV. The Oral Examination
- V. Application Period

REQUIREMENTS FOR RESEARCH DIPLOMATE

I. Purpose

- A. The Research diplomate is exclusively limited to those candidates who are unable to meet the qualifications of the clinical diplomate.
- B. The purpose of the Research diplomate is to permit diplomate status for those individuals who contribute significantly to the field of cornea and contact lenses but who are not in clinical practice and, thus, are unable to meet the qualifications of the clinical diplomate.

II. Qualifications

- A. The applicant should have made substantial contributions to the body of knowledge relating to the cornea, contact lenses or refractive technologies.
 - 1. The applicant should have already published, as a listed author, at least ten papers in peer-reviewed journals in the area of cornea, contact lenses and refractive technologies. If the applicant has a funded NIH grant (or equivalent), this can substitute as two published papers.
 - 2. The applicant should be conducting research in the area of cornea, contact lenses and refractive technologies.
- B. The research diplomate status is equivalent to that of the clinical diplomate, and both have the same rights and privileges.

III. The Scientific Paper

A. Topic Selection

- 1. Once the application has been submitted, the applicant should contact the Diplomate Award Chair to discuss possible topics for a scientific paper.
- 2. The topic of the scientific paper should be one in which the applicant has considerable interest. It should be a topic that the applicant wants to learn more about, and improved understanding of that topic could potentially benefit the applicant's research.
- 3. The topic of the scientific paper should not encompass the applicant's research career. It can be a topic related to the applicant's research interests, but it should not be the central theme of the applicant's current or prior research and publications.
- 4. The applicant must submit five topics appropriate for a scientific paper to the Diplomate Award Chair.
- 5. The Diplomate Award Chair will appoint a Diplomate Award Committee of three Cornea and Contact Lens Section diplomates, who have some expertise in the topic areas suggested by the applicant. At least one member of the committee will have attained diplomate status through the research diplomate process.

6. The Diplomate Award Committee will rule-out any unacceptable topics, and the applicant may select the topic of the paper from the remaining topics.

B. Outline

1. Once a suitable topic is agreed upon, the applicant must submit an electronic copy outline of the proposed paper to the Diplomate Award Chair, who will forward it to the three Committee members.

2. The Diplomate Award Committee will evaluate the outline for the following:

- a. depth and breath of coverage of the topic
- b. background information on basic mechanisms
- c. potential for development into a scholarly paper
- d. time and effort involved in producing a paper from the outline

3. If the members of the Diplomate Award Committee determine that modifications are needed to the outline, the changes will be communicated to the Diplomate Award Chair. Committee members will also determine, based on the number and importance of the changes to the outline, whether or not submission of the modified outline is required.

4. Upon acceptance of the outline, the applicant may begin to write the scientific paper.

C. The Paper

1. Requirements

a. The process of researching and writing the scientific paper is intended to be a challenge. The candidate is to demonstrate knowledge and expertise in cornea, contact lenses, and refractive technologies, while analyzing and justifying methods and results of scientific studies on the selected topic. It is intended to be a learning, as much as a testing, process.

b. The paper must provide evidence of extensive literature review and be comprehensively referenced. Cited papers may include publications by the candidate; however, the candidate's own publications must represent a small fraction of the total references.

c. The paper should demonstrate the candidate's background knowledge in cornea, contact lenses and refractive technologies. The scientific basis of issues explored should be well-expressed.

d. Considerable depth of scholarship should be evident in the topic area.

e. The paper should be approximately 50 pages long, excluding references, figures, and tables. It should be double-spaced in 12-point font with 1 inch margins.

f. The paper should include critical evaluation of methods, results, and analyses of past studies concerned with the topic. For references cited, the candidate should be

able to (but is not necessarily obligated to in all cases) discuss the rationale for the design used in the study, potential threats to the validity of the study, and improvements that could be made to the study if the candidate were to perform the study.

- g. The candidate should discuss the impact of research in the topic area on the public.
- h. The candidate should formulate the specific research questions that have not yet been answered in the topic area and should be able to formulate hypotheses that need to be tested.
- i. References should be cited at the end of the paper, following the guidelines of Optometry and Vision Science.
- j. Prior to submission of the paper, the candidate should have the paper reviewed by colleagues for grammar, style, clarity, and conformity to the standards of vision science publications.

2. Submission of the Paper

- a. Four printed copies of the completed paper should be submitted to the Diplomate Award Chair, who will keep one copy and send the other copies to the three Committee members.
- b. The paper must be received ten weeks prior to the annual meeting of the American Academy of Optometry in order to be reviewed and accepted prior to the meeting.
- c. The candidate should consider publishing the paper in its entirety or in sections as a review paper. If appropriate, a portion of the paper should be submitted for publication in a relevant peer-reviewed journal.

3. Acceptance of the Paper

- a. If the members of the Diplomate Award Committee agree that the scientific paper is acceptable, the Diplomate Award Chair will schedule a time for the oral examination, to take place during the next meeting of the American Academy of Optometry.
- b. If there are reservations about the paper, the members of the Diplomate Award Committee will write specific recommendations for improving the paper. The Diplomate Award Chair will communicate these recommendations to the candidate, who can re-submit the paper after appropriate improvements have been made.

IV. The Oral Examination

- A. After the paper is accepted by the Diplomate Award Committee, the applicant must pass an oral examination of approximately two hours given by the Diplomate Award Committee. Each member of the Committee will be involved in asking the candidates questions and evaluating the ability of the candidate to answer the questions. Depth and accuracy of response and the ability to communicate articulately are assessed.

B. Requirements.

The 2 hour exam will be divided into 2 sections. The first described as "general knowledge", will count for a maximum of 30% of the exam grade and time of the exam. Topics that will be included are the cornea, conjunctiva, tear film, contact lenses (listed below) and those topics that the candidate provided as potential "scientific" papers (2) other than the one that was written. Questions on this section will be equally sub-divided by time and score (maximum of 15%) between the general knowledge and the candidate provided topic papers. The general knowledge section should also be personalized to the candidate's background

1. The Cornea

- a. corneal anatomy
- b. corneal hydration control
- c. corneal biochemistry
- d. corneal optics and transparency
- e. corneal regeneration and wound healing
- f. corneal sensitivity
- g. corneal surgery
- h. biomechanics

2. The tears

- a. Structure and Secretion
- b. Drainage
- c. Physical Properties
- d. Tear Film Stability and Dry Eye

3. Contact Lenses

- a. Contact Lens Optics and
- b. Contact Lens Materials
- c. Fitting of Contact Lenses
- d. Verification and Inspection
- e. Complications of Contact Lens Wear
- f. Contact Lenses in Abnormal Ocular Conditions
(keratoconus, post-surgical, therapeutic)
- g. Contact lenses in Special Populations
(children, presbyopes, astigmats)
- h. Modes of Contact Lens Wear
(disposable lenses, extended wear, orthokeratology)

4. Instrumentation and Methodology

- a. Methods to Measure Corneal Topography
- b. Methods to Measure Corneal Thickness
- c. Microscopy of the Cornea
- d. Methods of Evaluating Corneal Physiological Response
- e. Methods for Tear Film and Tear Flow Evaluation
- f. Methods to Evaluate On-Eye Performance of contact lenses

The second section of the oral exam will be confined to questions on the candidate's paper (70% by score and time). The questions will include the significance of the paper, unanswered questions on this topic, limitations of the described research, what additional techniques/technology should be developed or applied. Additional questions will be designed by the examining committee that must be personalized to the candidate's work.

All the assessments by the examiners will be scored on a pass/fail basis rather than a numerical score for each question. The second section requires pass assessment whereas section one may only require a sub-minimum (i.e. approximately 10% less than a pass score) if the candidate performs well on the second section.

C. Failing the Oral Examination

1. If the Diplomate Award Committee members determine that the candidate failed the oral examination, then they must write an explanation for the negative decision. They must list the areas in which the candidate was weak, as well as suggestions for improvement.
2. The candidate may repeat the oral examination the following year at the next meeting of the American Academy of Optometry.
3. A new Diplomate Award Committee will be selected by the Diplomate Award Chair. One member of the original Diplomate Award Committee must serve on the new committee. The new committee will not assess the acceptability of the topic, outline, or scientific paper. They are charged only with re-evaluating the candidate in the oral examination.

V. Application Period

As an applicant for diplomate status under the above procedure, the candidate must complete the requirements within five years of application and payment of the application fee. If the candidate has not completed the process after five years have expired, a new application form and new application fee (non-refundable) are required.